

## I. Covid and beyond

### **Key takeaways**

- The global recession was deep, but ended sooner than expected, aided by considerable policy support. The recovery has been uneven; some countries and sectors returned to pre-pandemic growth paths, while others lagged. Meanwhile, financial conditions have remained exceptionally accommodative.
- The next stage of the pandemic will involve different, but no less formidable, challenges. As the rollout of vaccines and improved treatments help countries manage the pandemic, its enduring consequences for economic reallocation and work practices will become increasingly apparent.
- Upside and downside risks to growth loom large. Enormous fiscal stimulus and the drawdown of accumulated household savings could deliver stronger growth and higher inflation; but growth could disappoint and business credit losses mount if the virus is not controlled.
- In the near term, diverging economic conditions could pose policy challenges for emerging market economies. Further out, a key task will be to lay a solid foundation for the recovery to allow for policy normalisation and to manage any tensions that might arise between fiscal and monetary policy.

The battle against the Covid-19 pandemic shaped economic and financial developments over the past 12 months. In most countries, the recovery from the first wave of the virus was stronger, and the financial consequences less persistent, than initially feared. But with the virus continuing to spread, the recovery has been markedly uneven across countries and sectors. Ample policy support has shielded firms from the worst consequences of the downturn, helping to ease financial conditions but also supporting buoyant asset prices, which in some cases have been hard to justify given economic conditions.

In the coming year, it seems likely that many countries will gradually bring the virus under control. This will usher in a new phase of the pandemic involving different, but no less formidable, challenges. While the ebb and flow of infections will continue to influence economic conditions, the frequency and severity of lockdowns should ease. Instead, issues such as potential corporate credit losses and capital and labour reallocation will come to the fore. In advanced economies (AEs), fiscal stimulus should facilitate the financial and economic transition and hasten the recovery. But less policy support is likely in most emerging market economies (EMEs). While EMEs will benefit from increased export demand as the recovery in AEs consolidates, they could also face additional headwinds should global financial conditions tighten. The whole world entered the crisis suddenly and as one; the exit is proving slower and staggered.

In the near term, the need to assist firms and households affected by the pandemic will remain a key policy objective. The nature of policy assistance needs to evolve, however, as broad-based support measures give way to more targeted programmes. Differences across countries in the strength and timing of the recovery could lead to a divergence in policy settings and pose a challenge for policymakers in countries where growth is lagging. Meanwhile, it will be important for

policymakers to keep long-term objectives in mind. Key among these is ensuring a solid foundation for sustainable growth to allow policy to be normalised, and reaffirming clear boundaries between monetary and fiscal policies.

This chapter reviews economic and financial conditions over the past year. It then discusses the key economic and financial challenges that are likely to arise in the next stage of the pandemic and lays out scenarios for how they might evolve. Finally, it elaborates on the near- and long-term policy challenges.

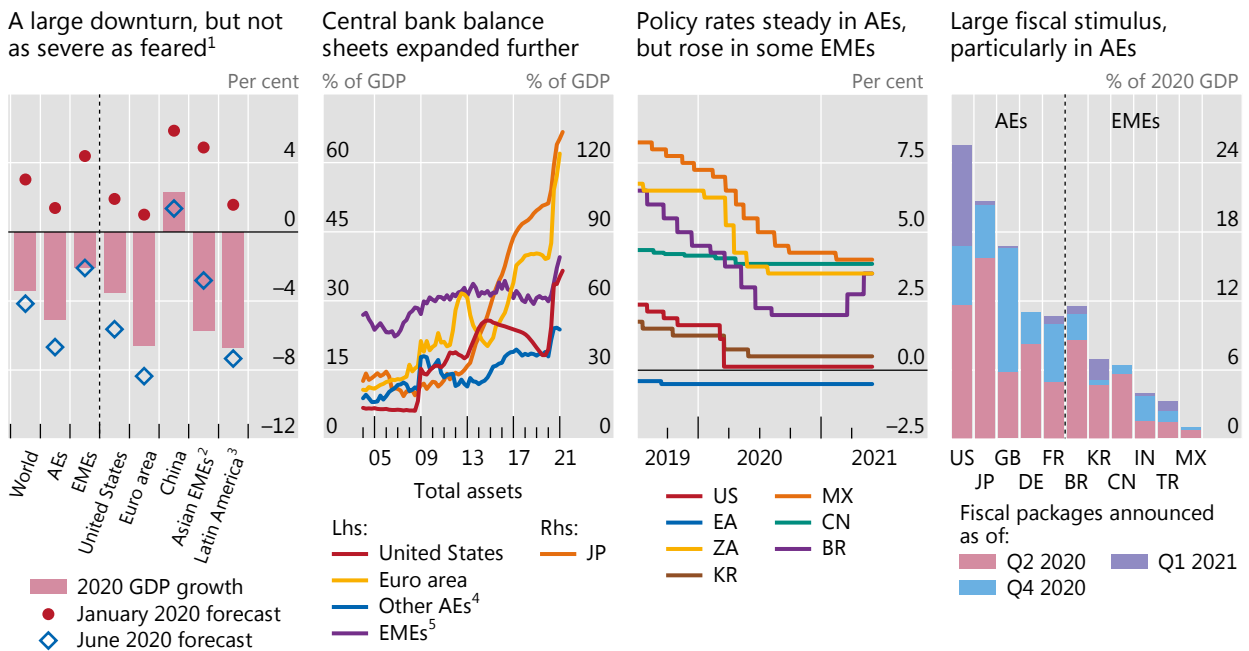
## The year in retrospect

### An incomplete recovery

Many of the key forces that shaped economic developments over the past 12 months were already apparent a year ago.<sup>1</sup> At the time of last year’s Annual Economic Report, the world was in the midst of a historically large and synchronised recession. Unprecedented joint monetary and fiscal policy support had been deployed, although it was unclear how effective it would be or how long it could be sustained.<sup>2</sup> There was widespread anticipation of scarring to broad swathes of the economy including firms, households and global trade. There were concerns about the lingering impact of insolvencies, persistent shifts in consumption patterns and shrinking global value chains. Some vaccines were already being developed, but their effectiveness was unproven. The duration of the pandemic was also highly uncertain; early estimates ranged from a single wave lasting a few months to a much more prolonged process.

A large recession, but macroeconomic policy support limited the fallout

Graph I.1



<sup>1</sup> Country groups calculated as weighted averages based on GDP and PPP exchange rates. <sup>2</sup> ID, IN, KR, MY, PH, SG and TH. <sup>3</sup> AR, BR, CL, CO, MX and PE. <sup>4</sup> Simple median of AU, CA, CH, DK, GB, NO, NZ and SE. <sup>5</sup> Simple median of AR, BR, CL, CN, CO, CZ, HK, HU, ID, IN, KR, MX, MY, PE, PH, PL, RU, SA, SG, TH, TR and ZA.

Sources: IMF, *Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic*, April 2021; OECD; Bloomberg; Consensus Economics; national data; BIS calculations.

The recession was certainly deep, but the rebound was stronger than forecasters had predicted. The second quarter of 2020 saw the biggest quarterly contraction in global economic activity since the Second World War. However, for the year as a whole, the GDP drop amounted to only 3.4% – a dire outcome in any normal year, but considerably better than projected at the height of the crisis (Graph I.1, first panel).

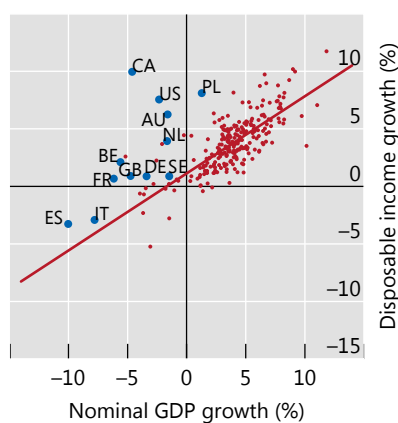
Macroeconomic policy support, which was even more extensive than anticipated, limited the fallout. After acting decisively to pre-empt severe disruptions to credit intermediation and preserve market functioning at the onset of the pandemic, in the period under review central banks provided further stimulus to aid the recovery.<sup>3</sup> In AEs they maintained, and in some cases expanded, asset purchase programmes (Graph I.1, second panel). Some also made greater use of forward guidance, in the case of the Federal Reserve as part of a revised monetary policy framework. In EMEs, central bank actions reflected varying economic forces. Some EME central banks lowered policy rates further; others, such as those of Brazil and Turkey, tightened in early 2021 in response to rising inflation (third panel). Several EME central banks also launched asset purchase programmes for the first time, generally to stabilise markets. In time, most EME central banks were able to weather the furious storm of March and April 2020.

Unprecedented and timely global fiscal stimulus further supported demand, breaking patterns that had become well established in previous recessions. Particularly in AEs, fiscal expansion continued after the initial pandemic shock (Graph I.1, fourth panel). In a number of countries, the packages amounted to more than 10% of GDP. In AEs, household income greatly benefited from fiscal transfers, expanded unemployment benefits and furlough schemes. In a number of cases, household disposable income actually rose in 2020 – sometimes exceptionally fast (Graph I.2, left-hand panel). For firms, government debt guarantees, debt moratoriums and

## Household income held up and firms kept access to credit

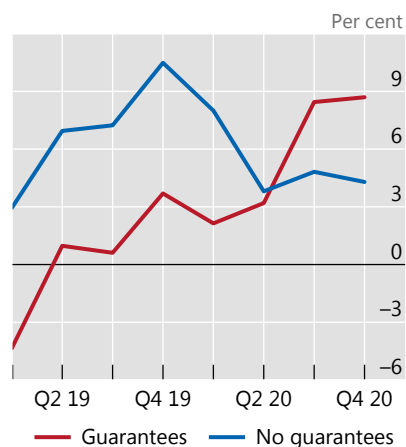
Graph I.2

Household income grew more than expected, given GDP growth



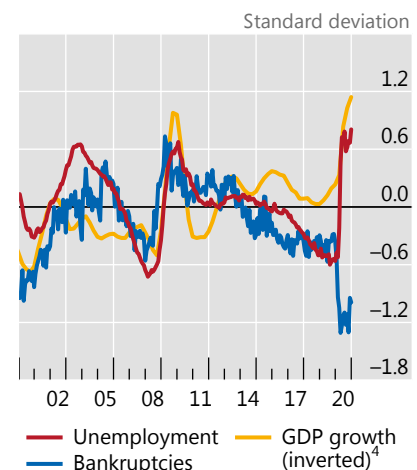
• Historical trend and data<sup>1</sup> • 2020

Credit grew faster in countries with government guarantees<sup>2</sup>



— Guarantees — No guarantees

Corporate bankruptcies decoupled from economic activity<sup>3</sup>



— Unemployment — Bankruptcies — GDP growth (inverted)<sup>4</sup>

<sup>1</sup> Calculated over the period 2000–19 for AU, BE, CA, DE, ES, FR, GB, IT, NL, PL, SE and US. <sup>2</sup> Average year-on-year change in total loans for a sample of 112 large banks in 29 jurisdictions. “Guarantees” refers to loan growth in countries where governments provided credit guarantees. “No guarantees” refers to loan growth in other countries. <sup>3</sup> The mean and standard deviations are calculated over the period 2000–19 on an individual country basis for 11 AEs and 12 EMEs. The graph shows the average of the standard deviations from the mean across countries, where data are available. <sup>4</sup> GDP growth line is inverted, ie values are multiplied by -1.

Sources: IMF, *Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic*, April 2021; OECD; national statistical agencies; Datastream; FitchConnect; S&P Capital IQ; BIS; BIS calculations.

other direct support measures helped ensure ample credit supply, counterbalancing a dramatic fall in revenue (centre panel).

Partly as a result, the anticipated wave of corporate insolvencies did not materialise. In fact, business bankruptcies fell in many countries. This coincided with a significant break in the previously close relationship between bankruptcies and economic activity (Graph I.2, right-hand panel).<sup>4</sup>

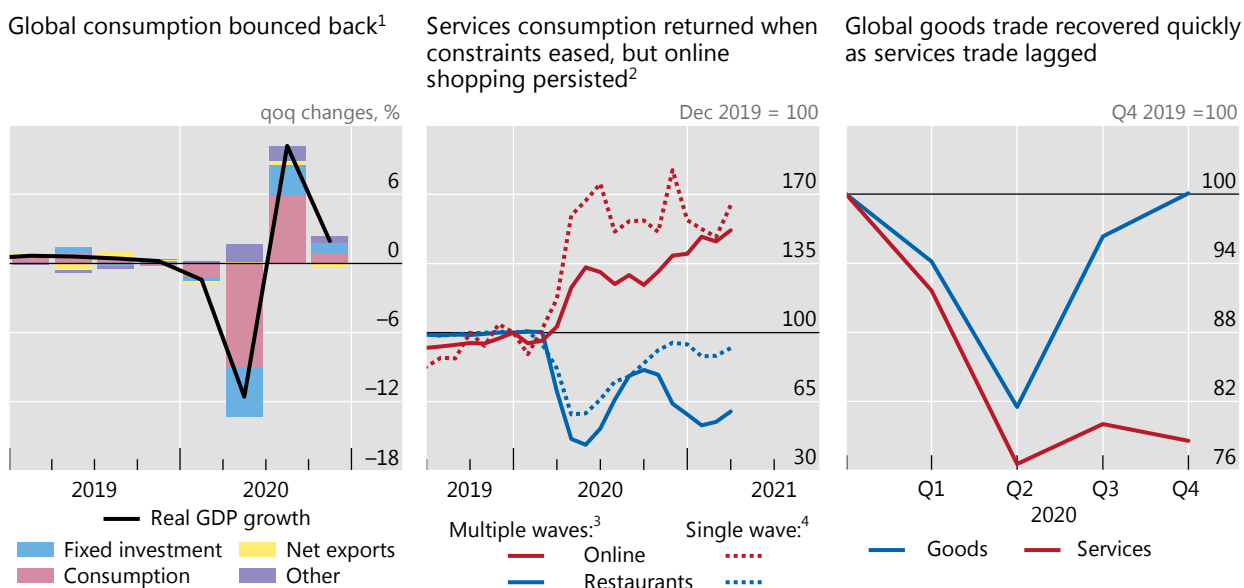
The impact of the crisis on households was less persistent than initially feared. When lockdowns eased in many countries in the third quarter of 2020, spending made up much of its lost ground (Graph I.3, left-hand panel). The lingering weakness in some forms of consumption, notably recreation services, probably reflected constraints rather than enduring shifts in consumer preferences. Indeed, in countries that saw only a single large infection wave, spending on services such as restaurants returned close to pre-pandemic levels (centre panel). At the same time, the pandemic reinforced previous trends in consumption patterns. In particular, the shift to online retailing gathered pace, regardless of whether countries experienced multiple waves of infection. These changes in consumer behaviour also helped insulate economic activity from containment measures. As a result, lockdowns led to much smaller declines in economic activity in early 2021 than they had earlier in the pandemic.<sup>5</sup>

Concerns that the pandemic would deal a lasting blow to global economic integration also proved overly pessimistic. Goods trade rebounded strongly after contracting by nearly 20% early in the first half of 2020 when supply disruptions had wreaked havoc on production networks (Graph I.3, right-hand panel). When supply pressures reappeared in early 2021, they reflected robust demand for goods such as electronic equipment and motor vehicles rather than disruptions to global value chains (GVCs). Services trade, however, did not recover. Cross-border tourism was hard hit, with international air travel declining by 74% in 2020.<sup>6</sup>

Banks weathered the recession surprisingly well. Most had entered the pandemic with relatively strong balance sheets, in large part owing to post-Great

Scarring was not as large as initially feared

Graph I.3



<sup>1</sup> Weighted average based on GDP and PPP exchange rates of 46 countries representing 71% of world GDP. <sup>2</sup> Data up to March 2021. <sup>3</sup> Countries with multiple waves: CA, DE, ES, FR, GB, NL, SE and US. <sup>4</sup> Countries with a single wave: AU, NZ and SG.

Sources: OECD; Consensus Economics; national data; BIS calculations.

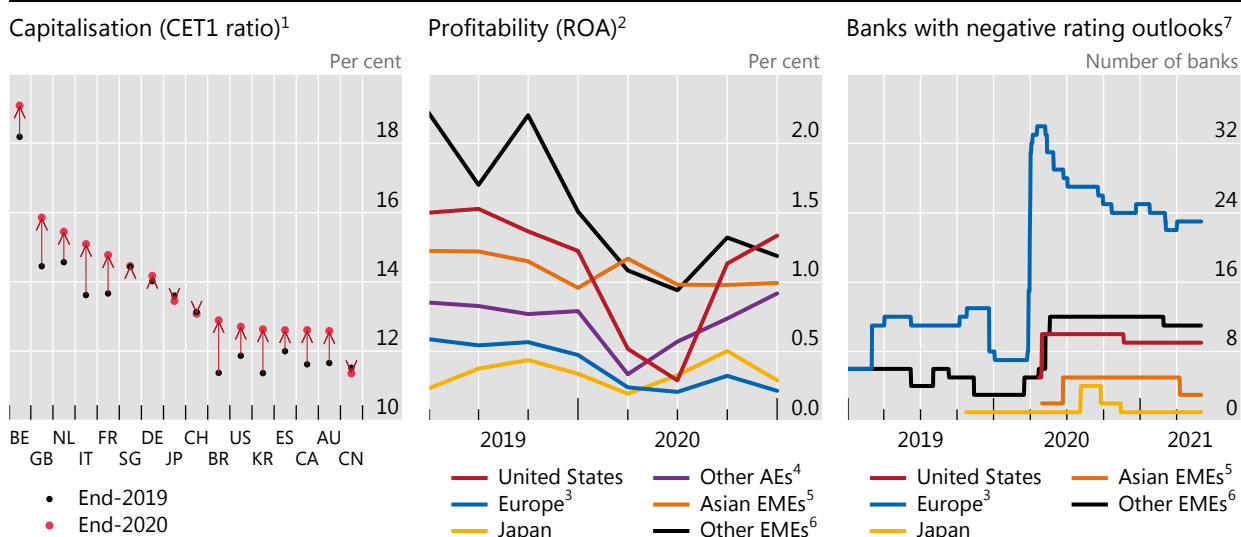
Financial Crisis (GFC) regulatory reforms. Low insolvency rates meant that the hit to asset quality was contained relative to the sharp drop in GDP. Indeed, bank capitalisation increased in many countries in 2020, in part due to restrictions on shareholder payouts and greater flexibility in classifying loans and applying regulations (Graph I.4, left-hand panel). After declining early in the pandemic because of increased provisions against expected losses, bank profitability recovered in the United States and some smaller AEs, although it remained low in Europe and Japan (centre panel). The number of banks with negative rating outlooks also remained elevated, particularly in Europe and EMEs outside Asia. This reflected the uncertain outlook for corporate insolvencies as well as the persistent challenges to bank profitability from low interest rates and competition from technology firms (right-hand panel).

Although the recession turned out to be less severe than initially feared, the recovery has been incomplete. GDP has remained well below pre-pandemic expectations, which admittedly were unusually strong given the length of the previous economic expansion (Graph I.5, left-hand panel). Labour market conditions have deteriorated markedly since the start of the pandemic. And higher unemployment rates tell only part of the story (centre panel). Labour force participation rates have declined substantially in some countries. In Europe, where furlough and part-time work schemes averted large rises in unemployment, the deterioration is visible in shorter working hours. In some countries, enrolment in these schemes – intended initially as a temporary measure – has remained well above pre-pandemic levels (right-hand panel).

The pace and extent of the recovery differed markedly across countries. China, the first economy to enter recession, rebounded quickly. It grew by 2.3% in 2020, on the back of strong business fixed investment and export demand. In turn, China's economic recovery lifted growth in some East Asian EMEs through GVCs. Meanwhile, in the United States a consumption-led bounceback in the second half of the year,

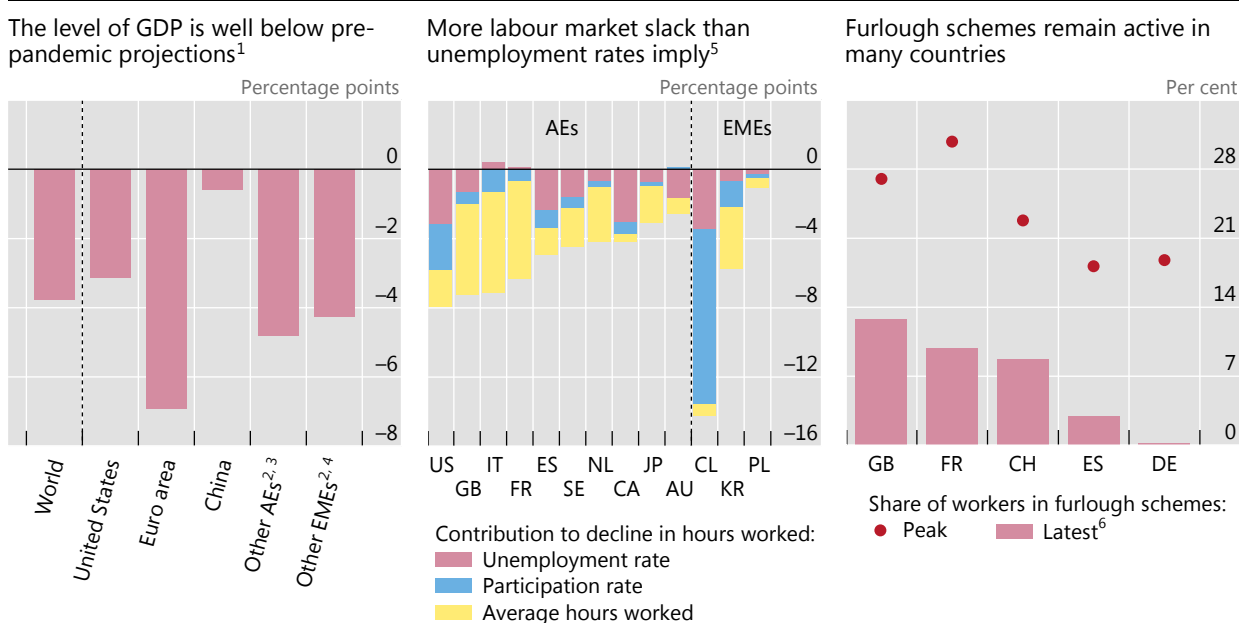
Banks' profitability declined, but capital ratios rose

Graph I.4



<sup>1</sup> Asset-weighted average of banks in each country, based on risk-weighted assets. <sup>2</sup> ROA = return on assets, calculated as operating income as a share of total assets; asset-weighted average of banks in each region. <sup>3</sup> BE, CH, DE, ES, FR, GB, IT, NL and SE. <sup>4</sup> AU and CA. <sup>5</sup> CN, ID, IN, KR and SG. <sup>6</sup> AR, BR, MX, RU, SA, TR and ZA. <sup>7</sup> Outlooks from Fitch on foreign currency long-term issuer default ratings, including negative watches. For banks in other AEs, there were no negative outlooks during the period shown.

Sources: FitchConnect; BIS calculations.



<sup>1</sup> Difference between the level of GDP at end-Q1 2021 and the December 2019 Consensus Economics forecast for Q1 2021 GDP. For countries that have not yet reported Q1 2021 GDP, the most recent Consensus Economics forecast is used. <sup>2</sup> GDP and PPP exchange rates weighted average. <sup>3</sup> AU, CA, CH, GB, JP, NO, NZ and SE. <sup>4</sup> AR, BG, BR, CL, CO, CZ, HU, ID, IN, KR, MX, PL, RO, RU and TR. <sup>5</sup> Deviation of total hours worked per capita at end-2020 from pre-pandemic level. <sup>6</sup> Latest data as of 31 May 2021.

Sources: International Labour Organization; IMF; OECD; Bloomberg; Consensus Economics; Datastream; BIS calculations.

supported by a residential construction boom and strong growth in information technology investment, limited the contraction in 2020 to 3.5%. In both China and the United States, the vigorous growth momentum extended into 2021.

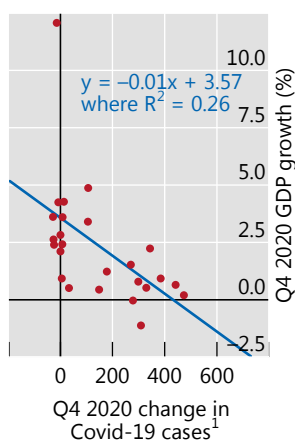
In other countries, however, the initial recovery lost steam. In the euro area, in particular, economic activity declined by 6.6% in 2020 and contracted further in the first quarter of 2021, as new waves of infection led to renewed lockdowns. Growth also slowed in other AEs that experienced multiple infection waves (Graph I.6, first panel).

EMEs in Latin America, Africa and parts of Asia faced particularly challenging conditions. In many of these countries, the structure of economic activity is less suited to remote working and social distancing, constraining their ability to contain the virus, which at times overwhelmed local health services. Early in the crisis, expansionary policy, in some countries alongside remittances, cushioned the initial drop in activity. However, there was little additional fiscal stimulus from mid-2020, in most cases reflecting diminished policy space.

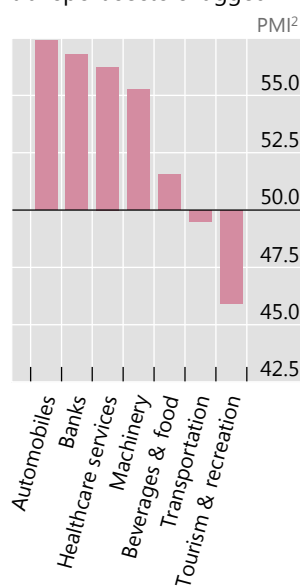
The recovery was also uneven at a sectoral level due to the pattern of containment measures. In most countries, sectors such as manufacturing and construction bounced back rapidly after lockdowns were relaxed (Graph I.6, second panel). By contrast, customer-facing service industries lagged badly. Unsurprisingly, these typically labour-intensive low-wage sectors saw by far the largest job losses (third panel).<sup>7</sup> In EMEs, the informal sector suffered most (fourth panel).

The disinflationary effects of the pandemic continued through 2020 (Graph I.7, first panel). Lower aggregate demand, weaker labour markets and firms' cost-cutting more than offset supply constraints. Slower price increases early in the pandemic in service industries, such as transport and recreation, were only partly offset by stronger ones in the durable goods sector, which actually saw higher

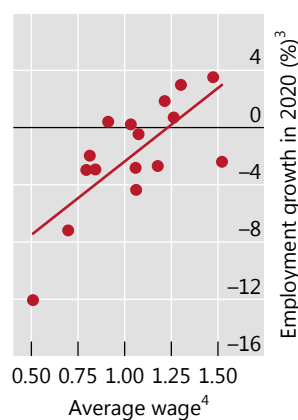
Rising infections weighed on growth



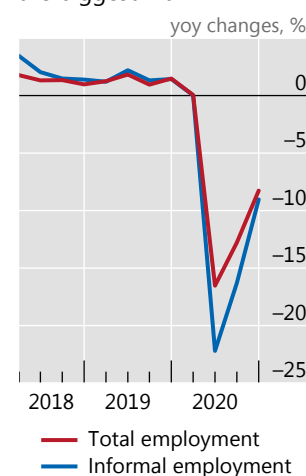
The recreation and transport sectors lagged



Employment fell most in low-wage industries



Informal employment took the biggest hit<sup>5</sup>



<sup>1</sup> Q4–Q3 2020 difference in the average number of new Covid-19 cases per million inhabitants. <sup>2</sup> Global purchasing managers' indices: a value of 50 indicates that the number of firms reporting improvement in activity is the same as the number reporting deterioration. Average from July 2020 to present. <sup>3</sup> Average growth across AU, CA, BE, CH, DE, ES, FR, GB, IT, NL, SE and US. <sup>4</sup> Mean industry wage relative to economy-wide mean in 2019, average across AU, CA, CH, GB and US. <sup>5</sup> Working age population-weighted average of AR, BR, CL, CO, PE and ZA.

Sources: International Labour Organization; IHS Markit; Opportunity Insights, Economic Tracker; Our World in Data; BIS calculations.

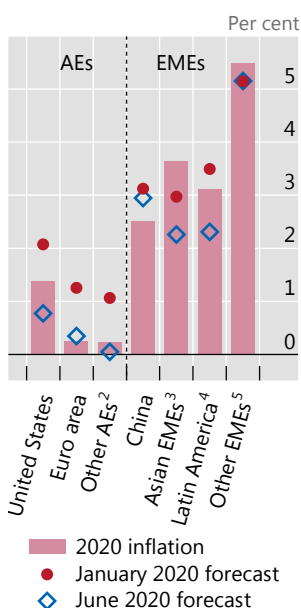
demand during lockdowns (second panel). Low inflation in China also reverberated through other economies due to the country's large role in global trade.

As the period under review progressed, however, supply pressures strengthened substantially and inflation picked up. After declining early in the pandemic, PPI inflation trended firmly upwards in several economies, most notably China, paralleling a steady recovery in commodity prices (Graph I.7, third and fourth panels). In conjunction with exchange rate depreciations, this led to higher inflation in a number of large EMEs. Inflation also rose in most AEs and in some cases exceeded central bank targets. As well as higher commodity prices, a rebound in the prices of items such as airfares and hotels, which had fallen sharply early in the pandemic, contributed to increased inflation in these countries.

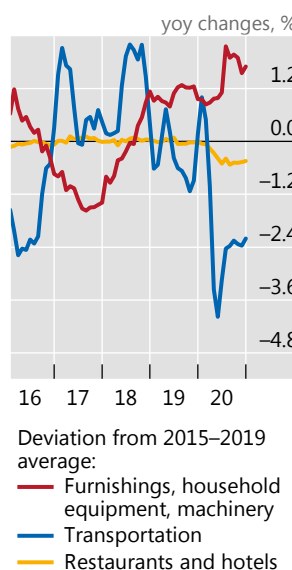
### Exceptionally accommodative financial conditions

The economic recovery went hand in hand with exceptionally accommodative financial conditions. Expectations that very easy monetary policy settings would be sustained, together with unprecedented fiscal expansions that improved economic prospects and supported corporate solvency, were instrumental in reducing business funding costs and compressing risk premia. While public interventions sustained asset valuations, risky assets appeared expensive even after accounting for the level of interest rates. Starting in early 2021, rapidly improving economic forecasts led to a sharp rise in sovereign yields in AEs that then spilled over to EME yields. On balance, however, financial conditions remained very supportive from a historical perspective, including in most EMEs.

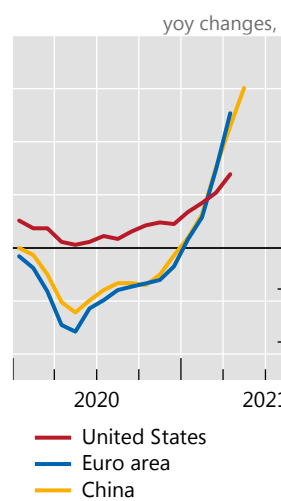
In 2020 inflation stayed low in AEs, but rose in some EMEs<sup>1</sup>



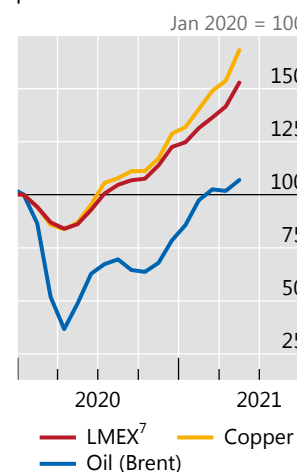
Prices grew more slowly in pandemic-affected sectors than in others<sup>6</sup>



Producer prices increased as the period progressed



After declining early in the pandemic, commodity prices soared



<sup>1</sup> Country groups calculated as weighted averages based on GDP and PPP exchange rates. <sup>2</sup> AU, CA, CH, JP and SE. <sup>3</sup> HK, ID, IN, KR, MY, TH and SG. <sup>4</sup> BR, CO, CL, MX and PE. <sup>5</sup> PL, RU, SA, TR and ZA. <sup>6</sup> Simple average across 36 countries. <sup>7</sup> London Metal Exchange index, consisting of the prices of the six primary metals: copper, aluminium, lead, tin, zinc and nickel.

Sources: OECD; Consensus Economics; Datastream; BIS calculations.

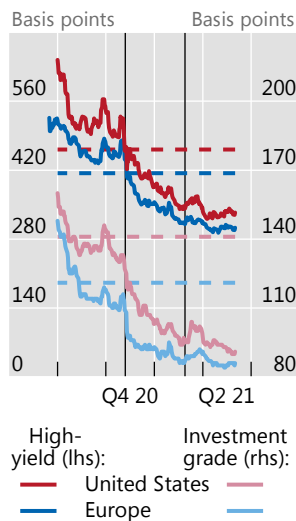
With accommodative policies in place, businesses were able to access finance on very favourable terms. Credit spreads were compressed through mid-2021, even for low-rated firms, falling well below historical averages (Graph I.8, first panel). Following a sharp increase in mid-2020, not least thanks to central banks' asset purchases and liquidity facilities, corporate bond issuance remained exceptionally buoyant into the first quarter of 2021, even reaching record highs in the US high-yield segment (second panel). The prices of funds investing in loans to small risky firms also soared in late 2020, exceeding pre-pandemic levels in early 2021.

Strong risk appetite sustained valuations in equity and real estate markets. Even after accounting for the very low level of interest rates, stocks appeared expensive in the United States and China, although less so in other markets (Graph I.8, third panel). Positive sentiment was also apparent in the steep increase in capital raised through initial public offerings and special purpose acquisition companies, which echoed the rush to public markets seen in the late 1990s tech boom. While commercial real estate (CRE) prices had fallen markedly early in the pandemic, proxies for risk premia remained low. In the United States, the difference between CRE rental yields (also known as capitalisation rates) and Treasury yields – often interpreted as a valuation measure – was at the same level in the first quarter of 2021 as it had been in late 2019, even for the pandemic-hit retail sector (fourth panel). Moreover, although office building valuations fell, they remained well above post-GFC lows. In the meantime, and unusually for a recession, house prices rose sharply in many countries (Box I.A).

Positive vaccine news and an unprecedented fiscal expansion underpinned buoyant sentiment in equity markets. Global stock prices started rising in November 2020 on favourable vaccine trial results, even though they remained



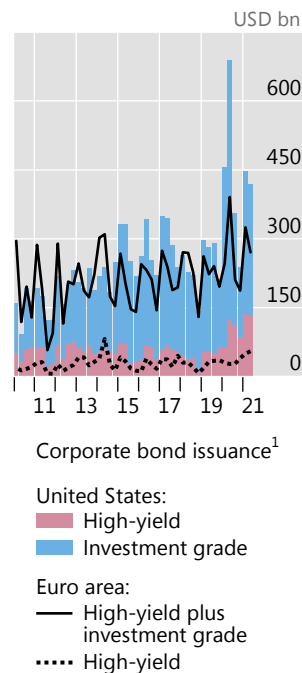
Corporate bond spreads compressed



High-yield (lhs):  
 — United States  
 — Europe

Investment grade (rhs):  
 — United States  
 — Europe

Corporate bond issuance was unusually strong

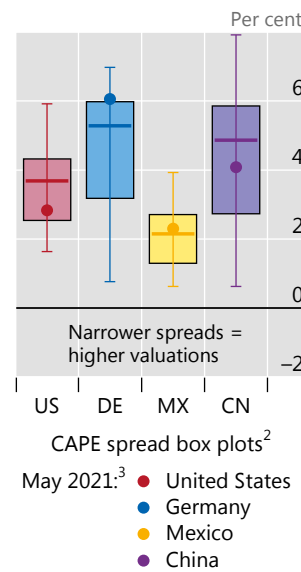


Corporate bond issuance<sup>1</sup>

United States:  
 ■ High-yield  
 ■ Investment grade

Euro area:  
 — High-yield plus investment grade  
 ..... High-yield

Valuations were buoyant for selected equity benchmarks...

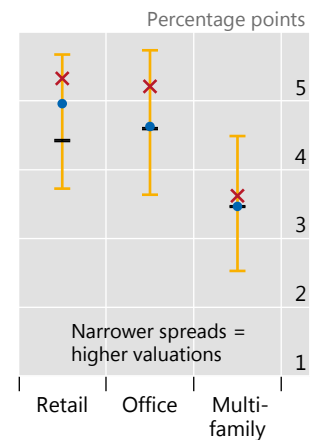


CAPE spread box plots<sup>2</sup>

May 2021:<sup>3</sup>

- United States
- Germany
- Mexico
- China

...and were stable for hard-hit commercial real estate



Capitalisation spreads:<sup>4</sup>

- Q4 2019
- × Q1 2021

Historical distribution:<sup>5</sup>

- 5th–95th percentile range
- Median

The vertical lines in the first panel indicate 6 November 2020 (last trading day before Pfizer released details on vaccine efficacy) and 25 February 2021 (US bond market turmoil). The horizontal lines in the first panel indicate 2005–current medians.

<sup>1</sup> For 2021, issuance data up to 31 May 2021, extrapolated to full quarter. <sup>2</sup> Box plots show medians, interquartile ranges, and fifth and 95th percentiles; data starting in 2005. CAPE yields are calculated by subtracting the inflation-adjusted yield on the 10-year government bond from the inverse of the cyclically adjusted price/earnings (CAPE) ratio. <sup>3</sup> May 2021 values calculated using April 2021 CPI, with the exception of DE. <sup>4</sup> Based on US capitalisation rates minus monthly average of 10-year US Treasury yield. <sup>5</sup> Based on monthly data since January 2010.

Sources: IMF; OECD; Bloomberg; BoAML ICE indices; Dealogic; BIS calculations.

sensitive to the evolution of infection rates and delays in vaccine availability. In conjunction with very accommodative monetary policy, an extraordinary increase in government expenditure, especially in the United States, provided crucial support to risky assets in 2021 (Graph I.9, first panel). As US fiscal legislation neared its approval, volatility rose alongside higher sovereign yields in late February. The rise in EME equities also lost steam at this time on concerns of negative spillovers from higher AE yields. Chinese stocks experienced particularly large losses, which they had yet to recoup by June, partly due to policy efforts aimed at curbing credit growth.

As the period unfolded, sovereign yields started to rise. The brightening economic outlook, sustained by positive vaccine news, fiscal expansion and continued monetary accommodation, bolstered a “reflation trade”. At first, the steady increase in US bond yields reflected higher market-based inflation expectations (Box I.B). Subsequently, forecasts of buoyant US economic growth, supported by exceptional US fiscal stimulus and a tilt towards longer-dated sovereign issuance, lifted long-term yields (Graph I.9, second panel). The reflation trade appeared to ease somewhat in April, even as macroeconomic forecasts improved. Reportedly, increased demand from international investors was partly responsible. Indeed, by the end of March 2021 US Treasury yields hedged into euro and yen had risen to the highest levels in years, becoming particularly attractive to investors from those jurisdictions.

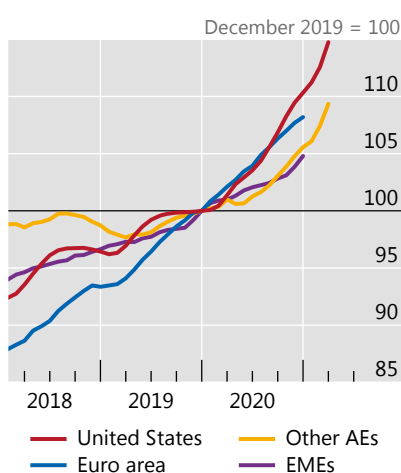
## House prices soar during the Covid-19 pandemic

House prices soared in many countries over the past year (Graph I.A, left-hand panel). Although a rise in house prices during a recession is not unprecedented, partly because accommodative monetary policy meant to stimulate the economy also supports asset prices, recent increases have been unusually large. In AEs, house prices rose by 8% on average in 2020, with growth accelerating further in the first few months of 2021. In EMEs, prices rose by around 5% on average in 2020. Rising house prices can contribute to a build-up of household vulnerabilities. As such, understanding why house prices rise is important when evaluating possible risks ahead.

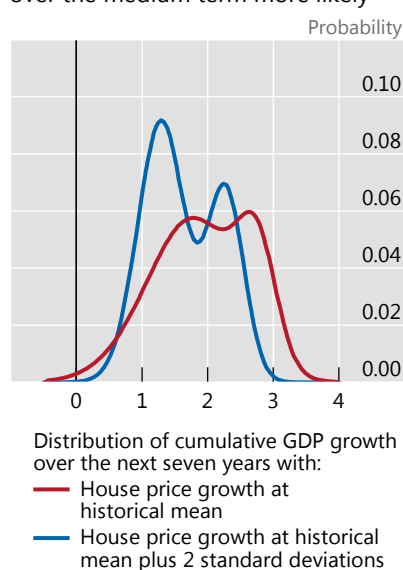
### Drivers and risks of rising house prices

Graph I.A

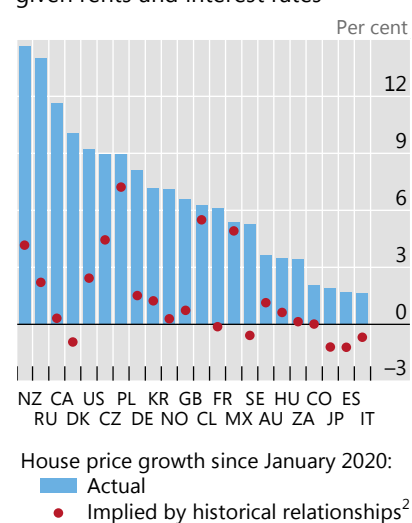
#### House prices rose sharply<sup>1</sup>



#### Rising house prices make low growth over the medium term more likely



#### Prices grew more than expected given rents and interest rates



<sup>1</sup> GDP and PPP exchange rates weighted averages: euro area = DE, FI, FR, IE, NL and PT; other AEs = AU, CA, GB, IS and SE; EMEs = AE, BR, HK, IL, KR, MX and TH. <sup>2</sup> Based on the regression  $\Delta \left( \frac{price_{i,t}}{rent_{i,t}} \right) = \alpha_i + \gamma_t + \beta_1 \left( \frac{price_{i,t-1}}{rent_{i,t-1}} \right) + \beta_2 yield_{i,t-1} + \beta_3 \Delta \left( \frac{price_{i,t-1}}{rent_{i,t-1}} \right) + \beta_4 \Delta yield_{i,t-1} + \varepsilon_{i,t}$  estimated on an unbalanced panel of 13 AEs over the sample Q1 1980–Q4 2019, where  $price_{i,t}$  is the log of the real housing price in country  $i$  at time  $t$ ,  $rent_{i,t}$  is the log of the real CPI rent index,  $yield_{i,t}$  is the value of the real 10-year bond yield and  $\alpha_i$  and  $\gamma_t$  are country and time fixed effects.

Sources: D Aikman, M Drehmann, M Juselius and X Xing, "The Bactrian camel: macro risk in the medium term", forthcoming; OECD; Bloomberg; Datastream; IFRS Foundation; national data; BIS calculations.

Two factors seem to be behind the rise in house prices. The first is the pandemic itself. After contracting significantly as economies locked down in early 2020, the number of housing transactions surged towards the end of the year and into 2021. As well as pent-up demand, the increase in housing turnover seems to reflect changes in housing preferences as lockdowns and working from home caused households to reassess commuting costs.<sup>①</sup> Because housing supply is relatively inelastic in the short run, demand-induced increases in housing turnover typically go hand in hand with rising house prices.<sup>②</sup> The second factor is interest rates, which declined early in the pandemic. Not only do lower interest rates make it cheaper to service a home loan, they also raise the present value of future housing services, which increases the value of home ownership relative to renting.

Soaring house prices give rise to intertemporal trade-offs. They can bolster consumption in the near term and are an important part of the monetary policy transmission mechanism, but they also raise downside risks in the medium term, particularly if accompanied by a pickup in credit growth.<sup>③</sup> In addition, rising house prices tend to go hand in hand with increased residential construction, which is associated with lower aggregate productivity growth.<sup>④</sup> Graph I.A, centre panel, illustrates the medium-term consequences of higher house prices. The red line shows the distribution of expected annual GDP growth over a seven-year window when house price growth is at its long-run mean for a panel of AEs. The blue line shows the same distribution

when house price growth is two standard deviations above its long-run mean. The bulk of the blue line lies to the left of the red line, indicating that faster house price growth is associated with an increased probability of below-trend GDP growth in the medium term.

Moreover, there is evidence that, since the start of the pandemic, house prices have risen by more than fundamental drivers, such as borrowing costs and rents, would imply. Based on their historical relationship to rents and interest rates, house prices would have been expected to rise in many countries since the start of 2020, but in most cases by less than the actual increase observed (Graph I.A, right-hand panel). Growth in rents – a key component in the cost of housing services – slowed in most countries over the past year. But mortgage interest rates and long-term bond yields – the relevant interest rates for discounting housing services – declined, at least until early 2021. This apparent divergence between house prices and their fundamental determinants could make them more vulnerable to larger corrections in the future, especially if financial conditions become less accommodative.

① Indeed, US house prices have grown fastest outside major metropolitan areas since the start of the Covid-19 pandemic, reversing long-run trends over preceding decades. See A Gupta, V Mittal, J Peeters and S Van Nieuwerburgh, “Flattening the curve: pandemic-induced revaluation of urban real estate”, *NBER Working Papers*, no 28675, April 2021. ② See K Hort, “Prices and turnover in the market for owner-occupied homes”, *Regional Science and Urban Economics*, vol 30, no 1, January 2000. ③ For a summary of the empirical estimates of housing wealth effects, see Figure 5 in D May, G Nodari and D Rees, “Wealth and consumption in Australia”, *The Australian Economic Review*, vol 53, no 1, February 2020. ④ See C Borio, E Kharroubi, C Upper and F Zampolli, “Labour reallocation and productivity dynamics: financial causes, real consequences”, *BIS Working Papers*, no 534, December 2015.

The reflation trade in AEs spilled over to EMEs. Starting in February 2021, local currency EME yields jumped (Graph I.9, second panel). Improving growth expectations in AEs had positive effects on EMEs thanks to rising exports and commodity prices. In many EMEs, however, higher AE yields exacerbated vulnerabilities stemming from a combination of slow vaccination rates, rising contagion rates, surging public debt levels and structural economic weakness that preceded the pandemic. The difficult predicament EMEs faced was visible in the depreciation of their currencies relative to the US dollar in the first quarter of 2021, which was unusual given soaring commodity prices (third panel).

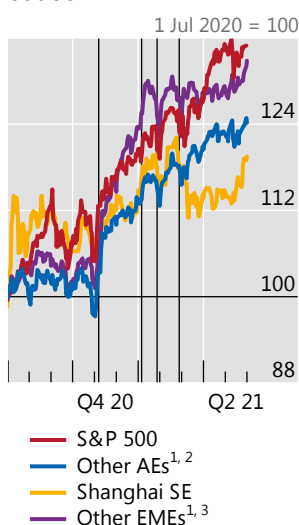
That said, financial conditions in EMEs generally tightened only moderately and remained accommodative on balance (Graph I.9, fourth panel). The tightening effect of higher long-term yields was partly offset by advancing equities. China was an exception and saw financial conditions tighten noticeably, not least due to its domestic policy stance that aimed at containing credit growth. The tightening took place despite buoyant bond fund flows driven by a search for yield and portfolio rebalancing after Chinese bonds were included in international indices.

## The next stage of the pandemic

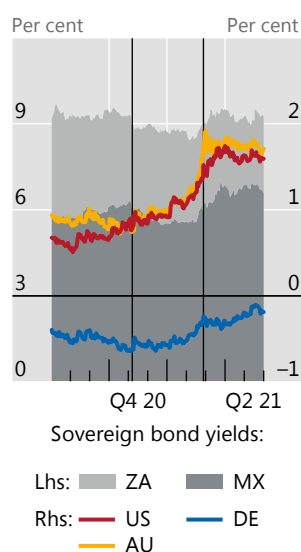
A key goal of policy in the past year was to hold the fabric of the economy together until a path out of the pandemic came into view. While policymakers could do little about the lockdowns’ direct impact, wide-ranging policy support limited the fallout. In many countries, support measures were so extensive that the lasting consequences of the pandemic, including shifts in the composition of economic activity, have scarcely begun to be addressed. In this respect, the experience of the past year illustrates the limits as well as the power of stabilisation policy.

The pandemic is now entering a new stage. While the spread of the virus will still constrain economic activity, a wider set of forces will start to shape outcomes. Among the most significant are US fiscal policy, which could have global consequences through trade and financial spillovers, and the behaviour of households, whose

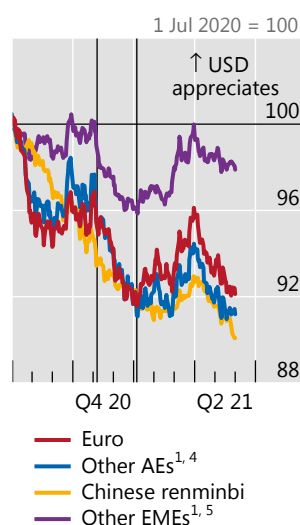
Equities climbed on vaccine news and fiscal outlook



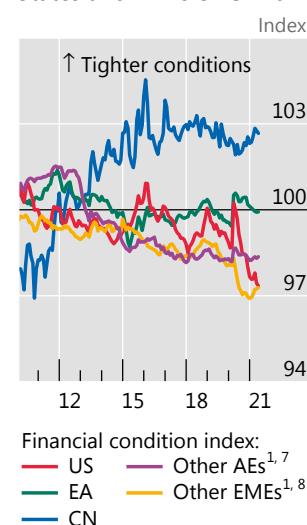
Yield curves steepened on growth prospects



US dollar retraced part of its initial appreciation



Financial conditions loosened in the United States and EMEs ex China<sup>6</sup>



The vertical lines in the first panel indicate 6 November 2020 (last trading day before Pfizer released details on vaccine efficacy), 5 January 2021 (Georgia Senate runoff elections), 27 January 2021 (US House majority leader starts the process for possible non-bipartisan approval of fiscal expansion) and 25 February 2021 (US bond market turmoil). The vertical lines in the second panel indicate 6 November 2020 and 25 February 2021. The vertical lines in the third panel indicate 6 November 2020 and 5 January 2021.

<sup>1</sup> GDP weighted average. <sup>2</sup> AU, CA, CH, DK, GB, NO, NZ and SE. <sup>3</sup> BR, CL, CO, CZ, HK, HU, ID, IN, KR, MY, MX, PE, PH, PL, RU, SG, TH, TR and ZA. <sup>4</sup> AU, CA, CH, DK, GB, JP, NO, NZ and SE. <sup>5</sup> AR, BR, CL, CO, CZ, HK, HU, ID, IL, IN, KR, MY, MX, PE, PH, PL, RU, SA, SG, TH, TR, TW and ZA. <sup>6</sup> Individual financial condition indices are z-scores, hence average levels are not directly comparable across regions. A value of 100 represents average conditions. <sup>7</sup> AU, CA, GB, JP, NO and NZ. <sup>8</sup> CL, HU, ID, IN, KR, MX, MY, PH, PL, RU, TH and ZA.

Sources: IMF; Barclays; Bloomberg; BIS calculations.

“excess savings”, if released, could provide a significant impetus to the recovery. The strength of these forces will help determine whether the wave of business insolvencies that failed to materialise last year eventually occurs. Corporate credit losses would, in turn, feed back into broader economic conditions through business investment and the health of the financial sector. Meanwhile, the pandemic’s effects on corporate reallocation will become clearer.

How will the global economy evolve as these forces play out over the next year or so? A natural starting point is the central scenario embedded in current economic forecasts and financial market prices, and the corresponding assumptions and policy expectations. However, given the exceptional combination and scale of the forces at work as well as surrounding uncertainty, it is worth exploring how economic conditions could differ if the assumptions behind the central forecast are not realised. Accordingly, what follows contrasts the relatively benign central scenario with two plausible and more challenging alternatives. The range of outcomes provides insights into the considerations that could inform policy.

### The central scenario

The central scenario, as embodied in Consensus Forecasts, is for the economic recovery to continue, albeit at varying speeds across countries (Graph I.10, left-hand and centre panels). The pickup in growth should go hand in hand with better labour market conditions. As slack diminishes, inflation is projected to move closer

## What can we learn from market-based inflation expectations?

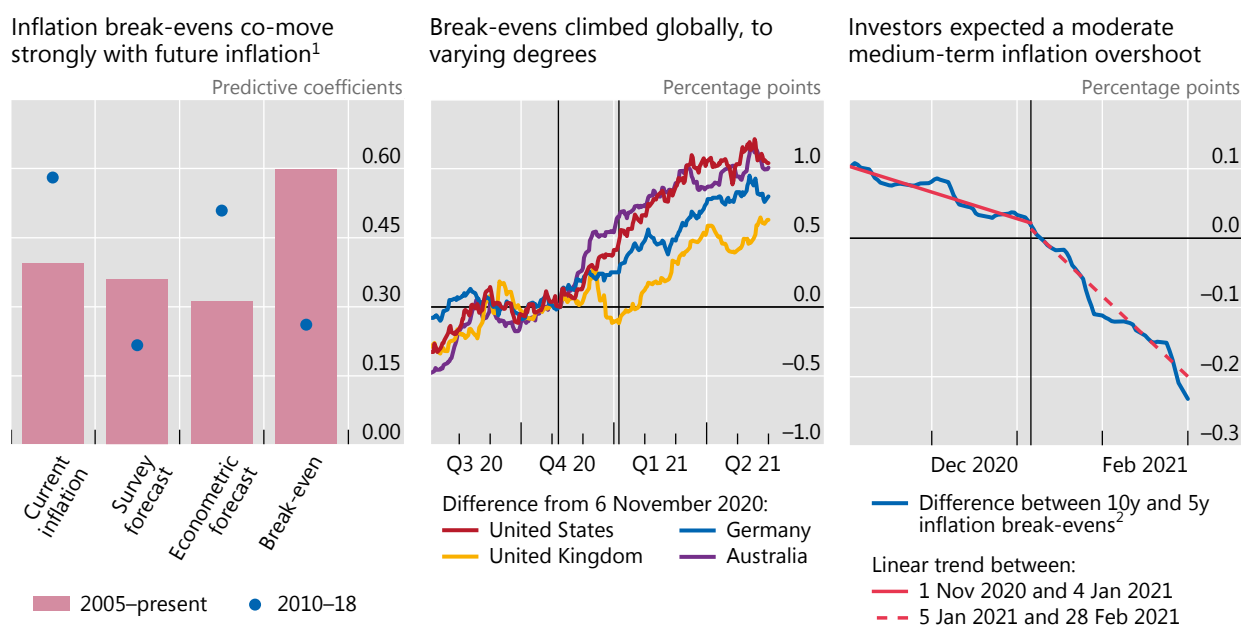
Inflation break-even rates are often used as timely measures of market-based expectations of future inflation. Break-evens are defined as the spread between the yields on nominal and inflation-indexed government bonds. These measures reflect three elements: first, the inflation rate that investors expect will be realised over the maturity of the bonds; second, the compensation for the inflation risk that investors require when holding nominal bonds; and third, the effect of demand/supply imbalances, such as those due to dealer balance sheet capacity.

This box addresses two questions. First, given that expected inflation is only one of their drivers, how informative are break-evens about future realised inflation? Second, what can short-term movements in break-evens tell us about the factors behind rising inflation expectations in late 2020 and early 2021? The first main finding is that break-evens predict near-term inflation well. The second is that, in the context of the Federal Reserve's new monetary policy framework adopted in August 2020, break-evens in several countries appear to have been significantly and durably influenced by positive vaccine news as well as by US fiscal expansion.

Break-evens compare favourably with other predictors of inflation. This takeaway is based on data from the United States over the sample period 2005–20 and on the link between monthly averages of daily five-year break-even rates and future realised inflation. In order to maximise available data, the analysis uses inflation measured during the following year rather than over the subsequent five years. The evidence indicates that break-evens co-move more strongly with future inflation than other common predictors, as reflected in the larger coefficient from regressions of realised inflation on lagged break-evens (Graph I.B, first panel, red bars). During tranquil times, ie excluding the GFC and the Covid-19 pandemic from the sample, the co-movement is weaker (fourth bar vs fourth dot), but even then break-evens have a larger predictive coefficient than survey forecasts of market economists (second dot vs fourth dot). This pattern implies that break-evens can be especially informative during volatile periods, when conditions evolve quickly and market prices respond rapidly to new information.

### Break-evens rose globally as medium-term pressures built in the United States

Graph I.B



The vertical lines in the centre panel indicate 6 November 2020 (last trading day before Pfizer released details on vaccine efficacy) and 5 January 2021 (Georgia Senate runoff elections). The vertical line in the right-hand panel indicates 5 January 2021.

<sup>1</sup> Coefficients from predictive regressions of average monthly US CPI change 12 months ahead on each of the indicated variables separately. Inflation 12 months ahead is used instead of inflation 60 months ahead to minimise sample loss. Survey inflation five years ahead is from the Survey of Professional Forecasters. The econometric forecast is average inflation 12 months ahead from an ARMA(1,1) model on realised inflation since 2005. The break-even rates have a five-year horizon. <sup>2</sup> Difference calculated on the five-day moving average of the two series.

Sources: Federal Reserve Bank of Philadelphia; Bloomberg; BIS calculations.

Starting in the third quarter of 2020, market-based inflation expectations reacted strongly to news about vaccines and fiscal expansion in the United States. In the wake of higher and sustained volatility earlier in the year following the initial pandemic shock, break-evens remained relatively stable in mid-2020 in a number of AEs and EMEs. As early trial results indicated substantial vaccine efficacy, break-evens started to climb rapidly across jurisdictions, with the exception of those for the United Kingdom (Graph I.B, second panel). Underscoring the expected global spillovers from US fiscal deficits, break-evens for Germany and the United Kingdom rose more rapidly after political changes raised prospects of a large fiscal package in early January 2021.

The spread between 10-year and five-year break-evens points to expectations of a short-run bout of inflation from the US fiscal impulse. This spread is typically positive, possibly because longer investment horizons carry more uncertainty and higher inflation risk premia (Graph I.B, right-hand panel). Market participants interpreted the results of US Senate runoff elections in Georgia in early 2021 as raising the likelihood of a very large fiscal expansion under the new US administration, which indeed took place a few weeks later. Immediately after the election results, the break-even spread fell more quickly and turned negative, indicating that investors expected fiscal policy to boost medium-run inflation above long-term levels.

to central bank targets, and in some cases exceed them (right-hand panel). However, with the exception of a few EMEs, inflation overshoots are seen as temporary.

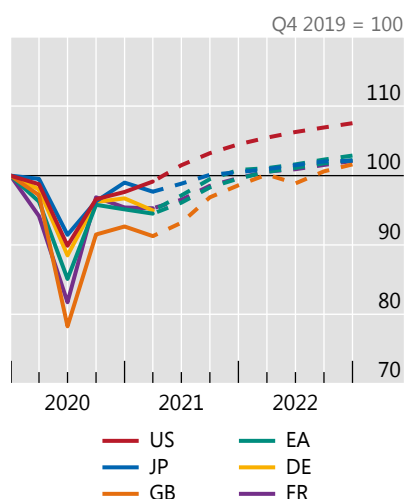
Accommodative fiscal and monetary policy are envisaged to underpin the recovery. Considerable fiscal stimulus remains to be deployed, on top of measures introduced last year, particularly in the United States. Monetary policy is also expected to remain highly expansionary in AEs, where a number of central banks have committed to maintaining their current stance until inflation reaches, or in some cases exceeds, its target. As a result, any tightening in global financial conditions is seen as moderate. However, policy rates could rise in some EMEs to dampen inflation.

Progress in controlling the virus is expected to vary across countries, contributing to the highly uneven recovery. In some AEs, the rollout of vaccines has

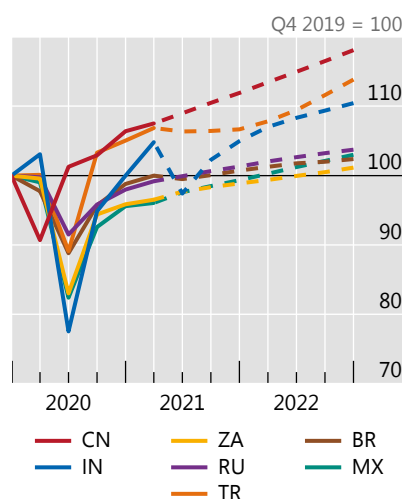
## The central scenario

Graph I.10

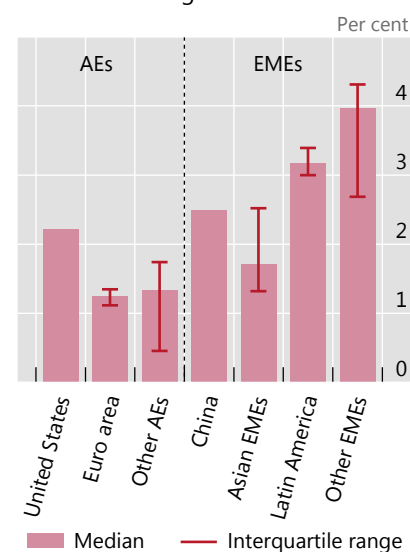
### A steady recovery in AEs<sup>1,2</sup>



### More dispersion in EMEs<sup>1,3</sup>



### Inflation expected to move closer to central bank targets in 2021<sup>4</sup>



<sup>1</sup> Levels based on quarter-on-quarter percentage change. Dashed lines indicate forecasts. <sup>2</sup> From Consensus Economics, *Continuous Consensus Forecasts*, May 2021. <sup>3</sup> JPMorgan forecast as of 31 May 2021. <sup>4</sup> Consensus Economics March 2021 forecasts for CPI inflation in 2021. Euro area = BE, DE, FR, ES, IT and NL. Other AEs = AU, CA, CH, JP and SE. Asian EMEs = HK, ID, IN, KR, MY, SG and TH. Latin America = BR, CO, CL, MX and PE. Other EMEs = PL, RU, SA, TR and ZA.

Sources: Consensus Economics; JPMorgan; BIS calculations.

## Charting a path to “pandexit”

Vaccine rollouts could pave the way for the removal of most remaining constraints on economic activity. Yet vaccination rates remain low in many parts of the world. Until substantial progress is made, many countries, particularly EMEs, remain vulnerable to further waves of infection. Although vaccine production is accelerating, supply looks set to be constrained for some time. This highlights the value of alternative “pandexit” strategies, such as improved treatments and more targeted prevention methods. This box evaluates these strategies and quantifies their possible effects on economic activity.

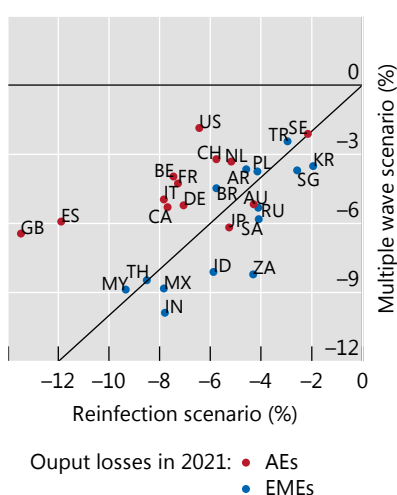
To assess the economic implications of different health strategies, a framework is needed that captures the interactions between epidemiology and economics. One such analysis employs a two-bloc framework that can flexibly accommodate a variety of epidemiological scenarios across many countries.<sup>①</sup> The first bloc describes how mobility affects the evolution of the pandemic, based on the susceptible-exposed-infectious-removed (SEIR) model of infectious disease transmission. The second bloc captures how society adjusts mobility to balance health and economic considerations.<sup>②</sup> Changes in mobility can in turn be mapped into GDP based on the historical relationship between the two variables. The model produces real-time estimates of infection and fatality rates, reflecting changes in the characteristics of the virus (eg the emergence of new variants) and improved treatments, which can be used to project the economic and health implications of current trends. In addition, the model can quantify how advances in vaccination or the emergence of virus variants alter the achievable combination of health and economic outcomes.

The analysis points to significant gains from vaccine rollouts. If the pace of vaccination slows to a third of its currently forecasted rate, the implied drag of the virus on output during 2021 could be one and a half times as large for the median country as is currently assumed. Slower progress with vaccinations also leaves countries more exposed to a resurgence in infections. Indeed, for many EMEs further waves of infections pose a greater risk than the emergence of vaccine-resistant virus variants because they are less protected by vaccination (Graph I.C, left-hand panel). In contrast, for countries with high vaccination rates, the emergence of vaccine-resistant variants poses the greater risk.

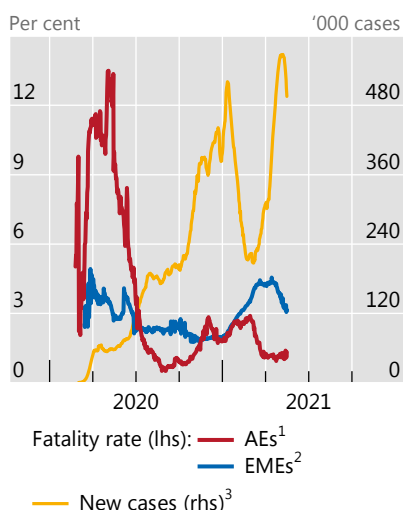
### Pandexit strategies: roles of vaccination and treatment

Graph I.C

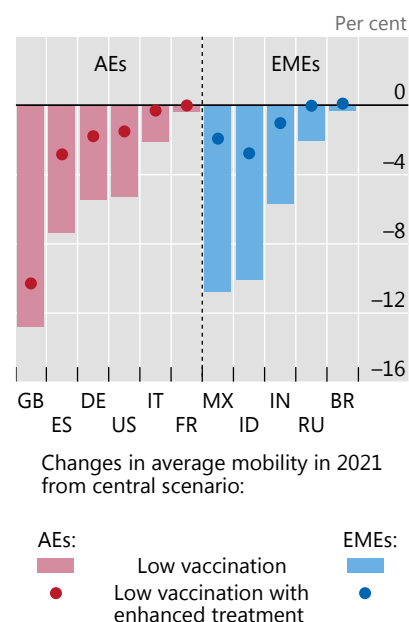
Lower vaccination rates make EMEs vulnerable to infection surges



Improved treatments limit fatality rates even as infections rise



Enhanced treatment could make up for vaccine shortfalls



<sup>1</sup> Simple median of CA, DE, ES, FR, GB, IT and the US. <sup>2</sup> Simple median of AR, BR, IN, KR, MX, RU and ZA. <sup>3</sup> Seven-day moving average.

Sources: P Rungcharoenkitkul, “Macroeconomic consequences of pandexit”, *BIS Working Papers*, no 932, March 2021; Our World in Data; BIS calculations.

With vaccines in short supply in the near term and potentially less effective against future virus strains, a complementary pandemic strategy may be to develop better therapeutic practices. The substantial decline in fatality rates since the start of the outbreak (Graph I.C, centre panel) points to the valuable role of improved treatment.<sup>③</sup> At the same time, significant gaps in fatality rates remain between AEs and EMEs, suggesting potential gains for the latter group. In principle, if the virus were less harmful it would be possible to ease constraints even if much of the population was unvaccinated.

Model simulations lend some support to improved treatment as a useful complement to vaccination. But for treatment to make a material difference, it would need to deliver a large and rapid reduction in fatality rates. The right-hand panel of Graph I.C illustrates the implications for mobility restrictions in selected countries of two alternatives to the central scenario. In the first, only a third of vaccinations planned for 2021 actually occur, and current treatment practices remain in place. This results in a decline in mobility of over 10% in some countries to contain the spread of the virus to a socially acceptable level. In the second, the slower vaccine rollout proceeds alongside improvements in treatment that halve the virus fatality rate. This reduces, and in some cases entirely offsets, the impact of lower vaccination rates on mobility.<sup>④</sup> Achieving such large improvements in treatment would require significant resources to mobilise and scale proven technologies and develop new ones. But, if effective, the cost of doing so would probably be much smaller than that of repeated lockdowns.<sup>⑤</sup>

From a global perspective, increased vaccination and improved treatment should clearly go hand in hand. International spillovers, not considered in the analysis, provide a compelling case for global vaccination and an equitable distribution of vaccines across countries. The presence of infections in any part of the world weighs on global economic activity via trade and supply chains, leaving open the possibility that new variants will undo the progress achieved in vaccination. Widespread vaccination reduces this risk. At the same time, improved treatments would reduce the appeal of “vaccine nationalism”, increasing the political feasibility of a more equal distribution of vaccines focused on the most at-risk groups. Improved treatments would also reduce the economic and health consequences of the emergence of vaccine-resistant variants. As a global challenge, ending the pandemic will require a coordinated effort, including a coherent global vaccination strategy.

<sup>①</sup> See P Rungcharoenkitkul, “Macroeconomic consequences of pandemic”, *BIS Working Papers*, no 932, March 2021 and <https://github.com/phurichai/covid19macro> for an open source code to replicate the results. <sup>②</sup> These responses include government-mandated containment measures as well as individual actions to reduce the risk of infection. <sup>③</sup> The current guideline recommends different combinations of anti-viral medicines tailored to the severity and stages of illnesses, a protocol that is still evolving. See [www.covid19treatmentguidelines.nih.gov](http://www.covid19treatmentguidelines.nih.gov). <sup>④</sup> The final scenario assumes that the fatality rate will converge to the steady state value of 0.5%, about five times larger than that of the regular flu. The central scenario assumes a constant fatality rate at the latest available value. <sup>⑤</sup> For example, the REGN-COV2 treatment contract costs the United States government \$450 million, about \$1.40 per capita.

already drastically reduced infections and mortality rates, raising hopes of a relatively smooth and early “pandexit”. Achieving similar gains in countries with lower vaccination rates would require further improvements in treatment methods and more targeted prevention strategies (Box I.C). Thus, the short-term prospects for containing the virus are less bright for many EMEs, particularly outside East Asia.

### Alternative scenario 1: higher inflation and tighter financial conditions

In this alternative scenario, inflation in a number of countries exceeds current expectations by enough to bring forward the expected start of monetary policy normalisation and prompt an unexpected and substantial tightening of global financial conditions. Naturally, this scenario involves stronger growth than currently projected. And it is more plausible if the pandemic is tamed more quickly than envisaged.

One reason why growth might surprise on the upside is that fiscal policy could turn out to be more stimulatory than expected. From a global perspective, the impact of the large US stimulus package passed in March 2021 is key, given its size and the United States’ influence on economic and financial conditions globally. Additional fiscal stimulus, should it occur, would reinforce these effects.



For the United States, the fiscal boost to GDP depends largely on how households respond. Estimates of fiscal multipliers – ie the overall increase in GDP from a \$1 increase in stimulus – are imprecise. That said, they are generally thought to be lower for broad-based transfer payments – a large share of the most recent US fiscal package – than for spending targeted at financially constrained households, and to be larger when monetary policy is accommodative.<sup>8</sup> To fix ideas, the middle-of-the-road multiplier estimates that inform the central scenario (eg 0.3 for transfers and 1.5 for direct expenditures) imply a boost to the level of US GDP of between 1 and 2% in each of the next two years (Table I.1). But if the multipliers turn out to be closer to the upper end of the range of the estimates, the fiscal impulse could be more than twice as large. Faster growth in the United States will, in turn, boost export demand elsewhere.

A second possible reason for surprisingly strong growth is that household saving rates in AEs, which increased sharply in 2020, could fall back more quickly than expected. The resulting push to consumption would reinforce the more stimulatory fiscal policy. A trigger for a faster reduction in saving rates could be early control of the pandemic, which would lower uncertainty and cut precautionary saving. Improved labour market conditions and rising house prices could also boost confidence and encourage households to draw down their savings more quickly. Additional saving in 2020 in some AEs was equivalent to over 5% of pre-crisis GDP. Thus, even a small drawdown could materially lift global economic activity (Graph I.11, left-hand panel).

The impact on inflation is harder to assess. There are grounds to believe that any further increase would be limited and temporary. The relationship between inflation and slack has weakened in recent decades: empirical estimates suggest that even very tight economic conditions would prompt only a modest rise (Graph I.11, right-hand panel). Inflation expectations are also better anchored, so that the “second-round” effects of an initial rise in inflation are typically small.<sup>9</sup> Moreover, many of the structural factors that have been exerting downward pressure on inflation for a long time and have further dampened second-round effects are still at play. Foremost among these are the globalisation of product and labour markets and technological change, which have reduced the pricing power of labour and many firms.<sup>10</sup> The pandemic-induced growth of e-commerce has worked in the same direction.

That said, given the strength of the forces at play in the scenario, one cannot rule out a larger and more sustained increase in inflation. The relationship between

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## US fiscal stimulus could have large effects

Estimated impact of March 2021 US fiscal package on the level of US GDP (%)<sup>1</sup>

Table I.1

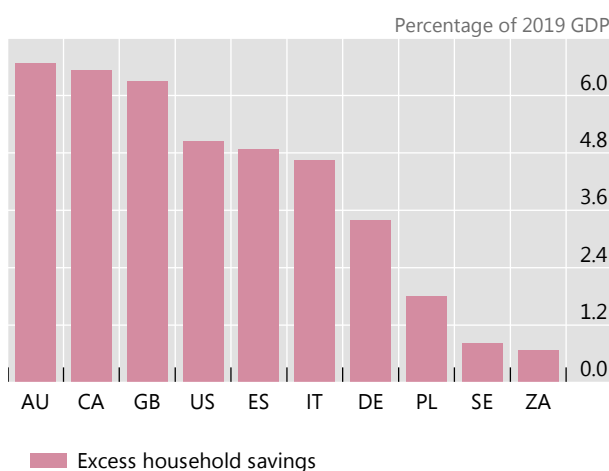
	2021	2022	Total <sup>2</sup>
Low multiplier = 0.2 <sup>3</sup>	1.1	0.5	1.7
Medium multiplier = 0.4 <sup>4</sup>	2.1	1.0	3.5
High multiplier = 0.8 <sup>5</sup>	4.8	2.2	8.0

<sup>1</sup> Estimates of timing of impact on GDP based on Congressional Budget Office estimates of the timing of fiscal transfer and expenditure package and simulations of the FRB/US model of the US economy. <sup>2</sup> Cumulative increase in GDP over the period 2021–25. <sup>3</sup> Estimated multiplier for the entire package assuming a multiplier from transfers of 0.1 and a multiplier from direct spending of 0.7. <sup>4</sup> Estimated multiplier for the entire package assuming a multiplier from transfers of 0.3 and a multiplier from direct spending of 1.5. <sup>5</sup> Estimated multiplier for the entire package assuming a multiplier from unemployment benefits of 0.7, a multiplier from other transfers of 0.3 and a multiplier from direct spending of 1.5. For the high multiplier case, it is assumed that 50% of transfers to state and local governments constitute direct spending.

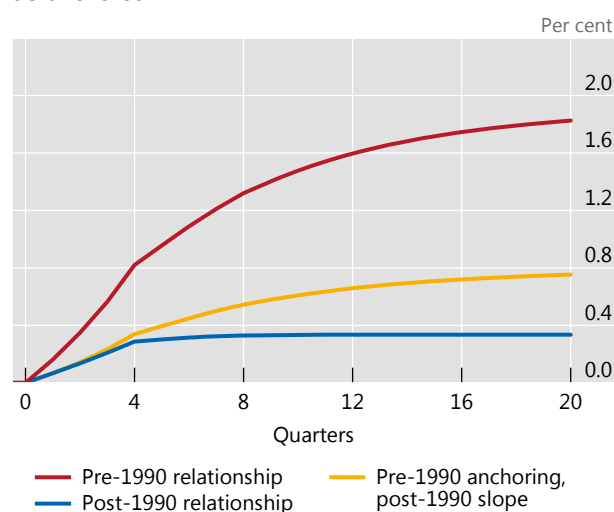
Sources: US Congressional Budget Office; BIS calculations.

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Savings build-up could fuel consumption boom<sup>1</sup>



Inflation will increase more if expectations are de-anchored<sup>2</sup>



<sup>1</sup> Excess savings calculated as the increase in gross savings in 2020 compared with 2019 divided by 2019 nominal GDP. <sup>2</sup> Impulse response of inflation to a permanent 1 percentage point increase in the output gap. Estimates based on the model  $\pi_{it} = \alpha_i + \beta_1 \pi_{i,t-1}^{ye} + \beta_2 gap_{i,t-1} + \varepsilon_{i,t}$ , where  $\pi_{i,t}$  is quarterly CPI inflation in country  $i$  in quarter  $t$ ,  $\pi_{i,t}^{ye}$  is year-on-year inflation and  $gap_{i,t}$  is the output gap, measured using an HP filter with  $\lambda = 1600$ . The model is estimated on an unbalanced panel of 14 AEs over two samples: (i) Q1 1970–Q4 1989; and (ii) Q1 1990–Q4 2019.

Sources: National data; BIS calculations.

inflation and economic slack – the Phillips curve – could turn out to be non-linear, meaning that inflationary pressures rise substantially when spare capacity is sufficiently small.<sup>11</sup> Such an outcome would be more likely in this scenario, as the pickup in growth would be synchronous across many countries, so that capacity would come under stronger pressure at the global level. Inflation expectations could also become less well anchored. Already this year, financial market measures of inflation expectations rose quickly in a number of countries as prospects for the US fiscal stimulus firmed (Box I.B).<sup>12</sup> Should this foreshadow a more general unmooring, eg so that inflation became as “backward-looking” as prior to 1990, a given reduction in economic slack would deliver twice as much inflation as more recent estimates imply. This would be true even if the response of inflation to economic slack remained low (Graph I.11, right-hand panel).

Even a temporary rise in inflation could deliver a sizeable financial tightening, especially given stretched financial markets. This would be more likely if uncertainty about central banks’ response caused financial markets to bring forward the anticipated start of policy normalisation. Such a scenario could lead to a rapid and disorderly unwinding of positions taken on the assumption of persistently easy monetary conditions.

This scenario would play out differently across the world. Jurisdictions where inflation has persistently been below target would welcome its rise as long as financial conditions there did not tighten excessively. By contrast, a tightening could be particularly challenging for EMEs, which are seeing a slower recovery than most AEs. The financial tightening in those economies would be all the more severe should the US dollar appreciate – a likely outcome given that the US economy would be the main source of the growth surprise.

## Alternative scenario 2: the recovery stalls, business insolvencies rise

In this scenario, the recovery stalls. As growth slows, business insolvencies, which were remarkably low in 2020 given the state of the global economy, start to rise substantially. The resulting corporate loan losses weaken the financial position of banks, sapping their lending capacity.

An adverse turn in the pandemic is an obvious trigger for this scenario. A particular risk comes from the emergence and spread of new vaccine-resistant virus strains from countries with high infection rates and slow progress in vaccination (Graph I.12, left-hand panel). Modifying vaccines to cope with these strains would take time, and renewed lockdowns could be required. Based on the historical relationship between infection rates, lockdowns and GDP, the emergence of a vaccine-resistant virus strain could lower GDP by between 1.5% and 3.5% in the second half of 2021, with regions where vaccination has progressed most experiencing the biggest hit to growth (right-hand panel).

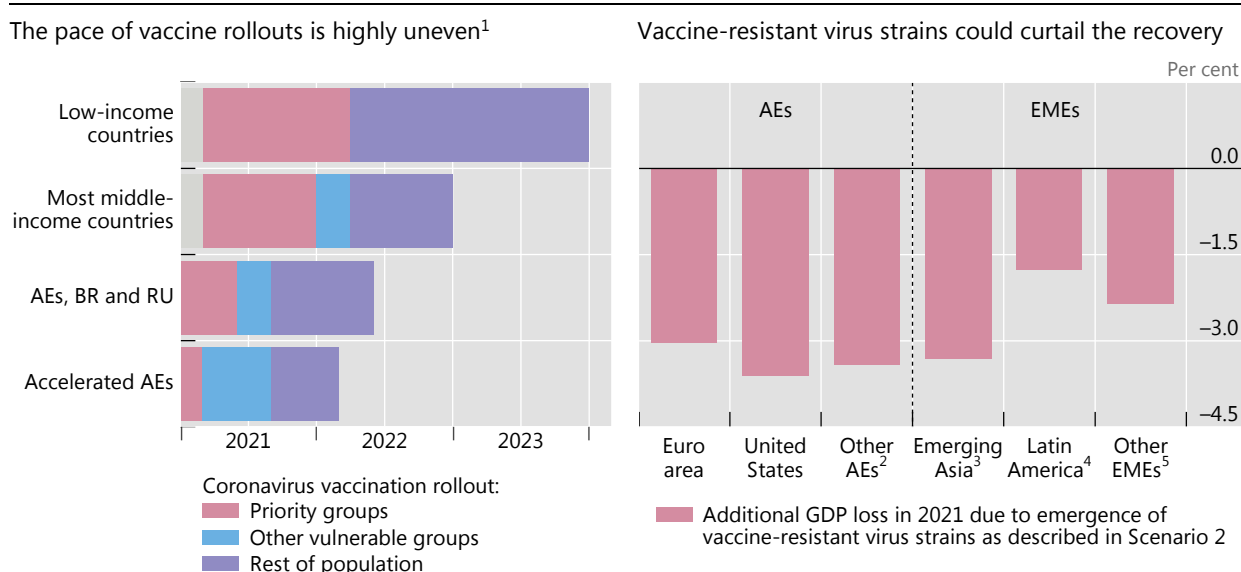
Consumption would naturally be lower in this scenario. Renewed lockdowns, weaker labour market conditions and possibly a rise in precautionary saving because of heightened uncertainty would all take their toll.

The boost to growth from fiscal policy could be smaller as well. Subdued consumption would translate into less spending out of fiscal transfers. In the United States, for example, the fiscal impulse would be only half as large as in the central scenario if fiscal multipliers turned out to be near the bottom of the range of estimates. In some countries, investors could start to question fiscal sustainability, which would lower growth further.

But it is the business sector that would feel the brunt of the damage. Even in the central scenario, credit losses would probably pick up in pandemic-affected sectors from the extremely low 2020 levels (Graph I.13, left-hand panel). In some industries, such as bricks-and-mortar retailing and commercial property, persistent shifts in customer behaviour and work practices could exacerbate losses (Box I.D).

Slow and uneven vaccination poses a risk to the recovery

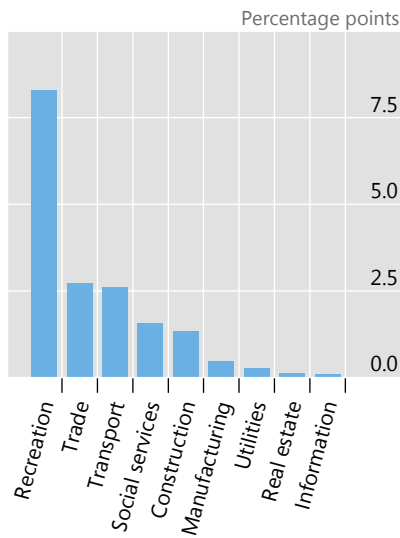
Graph I.12



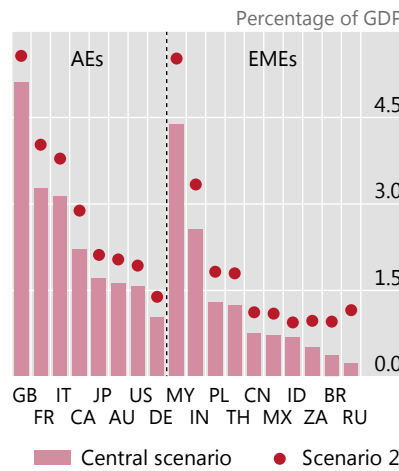
<sup>1</sup> Accurate as at 22 January 2021. <sup>2</sup> AU, CA, CH, GB and SE. <sup>3</sup> ID, IN, KR, MY, SG and TH. <sup>4</sup> AR, BR and MX. <sup>5</sup> PL, RU, SA and ZA.

Sources: P Rungcharoenkitkul, "Macroeconomic consequences of pandexit", *BIS Working Papers*, no 932, March 2021; The Economist Intelligence Unit; BIS calculations.

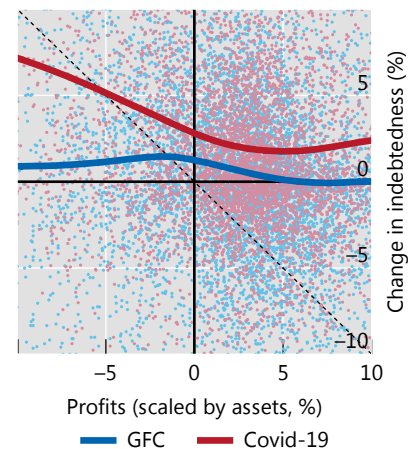
Higher credit loss rates likely to be concentrated in a few sectors<sup>1</sup>



Increases in credit losses reflect GDP growth and outstanding debt<sup>2</sup>



Credit supply to loss-making firms significantly above GFC<sup>3</sup>



<sup>1</sup> Increase of projected credit losses as a share of GDP during the crisis (average during 2020–22) from pre-crisis level (average during 2018–19) based on projected sectoral growth rates. <sup>2</sup> Sum of excess credit losses from 2020 to 2022 above the levels that prevailed in 2019. Sectoral credit losses weighted by the total indebtedness of the non-financial corporate sector as a percentage of GDP. <sup>3</sup> The smooth line is estimated using a generalised additive model, which fits penalised basis splines through the individual firm-level observations. Based on public and large private companies in the non-financial sector in AU, CA, DE, ES, FR, GB, IT, JP and US. GFC (Great Financial Crisis) refers to Q3 2008–Q2 2009, where change in indebtedness is the change between Q3 2008 and Q2 2009 divided by total assets in Q3 2008, and “profits” is the sum of profits from Q4 2008 to Q2 2009 divided by total assets in Q3 2008. Covid-19 refers to Q4 2019–Q3 2020, where change in indebtedness is the change between Q4 2019 and Q3 2020 divided by total assets in Q4 2019, and profits are the sum of profits from Q1 2020 to Q3 2020 divided by total assets in Q4 2019.

Sources: R Banerjee, J Noss and J Vidal Pastor, “Liquidity to solvency: transition cancelled or postponed?”, *BIS Bulletin*, no 40, March 2021; B Mojon, D Rees and C Schmieder, “How much stress could Covid put on corporate credit? Evidence using sectoral data”, *BIS Quarterly Review*, March 2021, pp 55–70; S&P Capital IQ; BIS calculations.

That said, so long as the recovery retains some momentum, credit losses seem to be manageable (Box I.E). A renewed downturn, however, would put further pressure on business finances (Graph I.13, centre panel). Corporate balance sheets are more exposed than at the start of the pandemic because of a substantial increase in borrowing, particularly by the least profitable firms (right-hand panel). While ample credit supply helped compensate for rising losses in the early stages of the pandemic and some firms have built sizeable cash reserves, it is unclear whether additional credit would be forthcoming should economic conditions worsen once again.

The adverse effects of rising corporate insolvencies would be magnified through their impact on banks and other financial institutions. Recent stress tests suggest that most banks hold sufficient capital to meet their regulatory requirements even in the face of a severe downturn, at least in AEs.<sup>13</sup> However, they also point to a significant hit to capital buffers, which could constrain the supply of credit to healthy firms and dampen business investment. Low bank profitability in an environment of low-for-long interest rates heightens the challenges and could hinder banks’ ability to build buffers and raise new capital.<sup>14</sup>

Even if an upsurge in insolvencies does not materialise, firms will have to contend with increased repayment obligations due to the large rise in borrowing early in the pandemic. The value of debt repayments due in the next two years has increased significantly since the start of the pandemic in many AEs and some large EMEs. In some countries it exceeds 50% of firms’ net income (Graph I.14, left-hand

## Aggregate implications of an uneven sectoral recovery

Like the recession that preceded it, the recovery from the Covid pandemic has been uneven across sectors. Some, such as manufacturing and construction, rebounded quickly after lockdowns eased. But many customer-facing service industries still face constraints. International tourism and business travel, for example, may take years to recover completely.

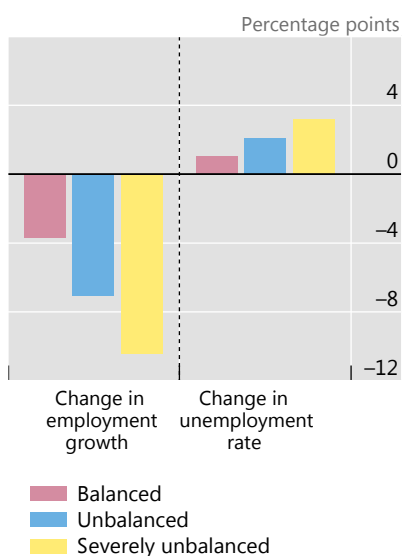
Uneven recoveries can pose challenges for macroeconomic policy. This is especially true when the unevenness reflects constraints that place a cap on activity in some sectors – such as the need to restrict personal interactions to limit the spread of a virus. Traditional stimulus policies, which aim to boost *aggregate* activity, are less effective.<sup>①</sup> Public support measures aimed at maintaining productive capacity in constrained sectors are costly, hard to target and difficult to sustain for long. Moreover, these policies cannot support activity forever and may delay necessary adjustments when sectors facing permanent reductions in demand need to downsize. Conversely, policies fostering reallocation from constrained sectors to expanding ones need time to bear fruit, making interim support critical.

As a result, recoveries from uneven recessions are often particularly slow. Estimates in a sample of advanced economies indicate that, in the three years after the start of a “balanced” recession, ie one that hits all sectors equally, employment typically falls by about 3.5 percentage points (Graph I.D, left-hand panel).<sup>②</sup> The employment drop is almost three times larger (about 10 percentage points) after a severely unbalanced recession.

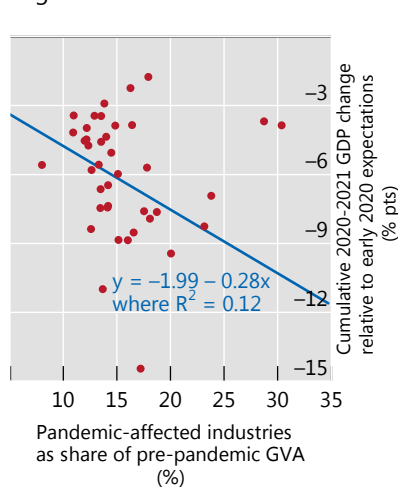
### Aggregate implications of an uneven recovery

Graph I.D

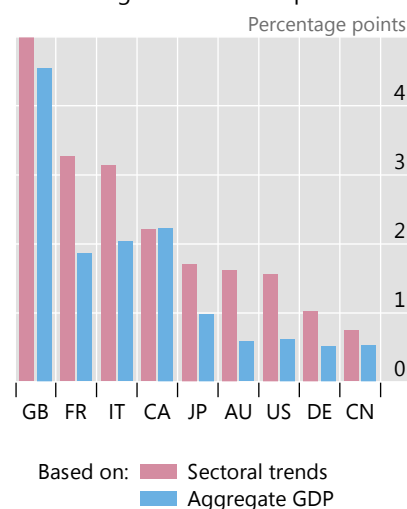
Unbalanced recessions weigh on labour markets<sup>1</sup>



GDP drops more in countries with larger customer service industries<sup>2</sup>



Projected credit losses higher after accounting for sectoral dispersion<sup>3</sup>



<sup>1</sup> 2006–17 data for AT, BE, CH, CZ, DE, ES, FI, FR, GB, IE, IT, NL, PL, PT, SE and TR. The red bars show the relative change in employment and the percentage change in the unemployment rate three years after a one standard deviation drop in growth and a one standard deviation increase in the employment share of exiting firms; the blue bars add to this a two standard deviation increase in the dispersion of sectoral employment shares of exiting firms; the yellow bars add another two standard deviation increase of the same dispersion. Estimations include country and time dummies. <sup>2</sup> Line of best fit calculated excluding SG and HK. <sup>3</sup> Cumulated increase of credit losses during 2020–22 compared with pre-crisis level based on sectoral credit losses and country-level aggregates.

Sources: IMF, *World Economic Outlook*; OECD; Consensus Economics; Moody's CreditEdge; Moody's Investor Service; S&P Capital IQ; BIS calculations.

There are signs that the recovery from the Covid-19 pandemic could confirm this pattern, at least in countries where progress with vaccinations is slow, delaying the relaxation of containment measures. Estimates from a multi-sector macroeconomic model indicate that current constraints on customer service industries could lower potential output in large AEs by up to 2% of GDP.<sup>③</sup> The effects should loom even larger in small open economies more reliant on industries such as tourism. Indeed, countries where customer service industries

account for a larger share of economic activity are projected to face bigger GDP shortfalls than the rest at the end of 2021 (Graph I.D, centre panel).

Uneven recessions may also have far-reaching financial consequences. Because insolvencies tend to rise more than proportionally with falling revenues, a downturn that reflects large contractions in a few sectors should be expected to lead to larger credit losses than a more evenly spread one. According to one study, estimates of pandemic-induced business credit losses that account for differences in economic conditions across sectors can be up to 50% larger than those based on aggregate economic conditions alone (Graph I.D, right-hand panel).<sup>④</sup>

① See V Guerrieri, G Lorenzoni, L Straub and I Werning, "Macroeconomic implications of COVID-19: can negative supply shocks cause demand shortages?", *NBER Working Papers*, no 26918, April 2020. ② See R Banerjee, E Kharroubi and U Lewrick, "Bankruptcies, unemployment and reallocation from Covid-19", *BIS Bulletin*, no 31, October 2020. ③ See D Rees, "What comes next?", *BIS Working Papers*, no 898, November 2020. ④ See B Mojon, D Rees and C Schmieder, "How much stress could Covid put on corporate credit? Evidence using sectoral data", *BIS Quarterly Review*, March 2021, pp 55–70.

panel). If debts cannot be rolled over, meeting these repayments will require firms to find ways to lower their costs or cut back on capital investment.<sup>15</sup>

Constrained financial institutions and highly indebted firms could also delay the required reallocation of resources. Such a reallocation would be more pressing in this scenario, given the persistent changes in consumer behaviour and increased risk of "zombie" firms linked to the sustained downturn. Another factor potentially holding back resource reallocation is blanket business support programmes. Over

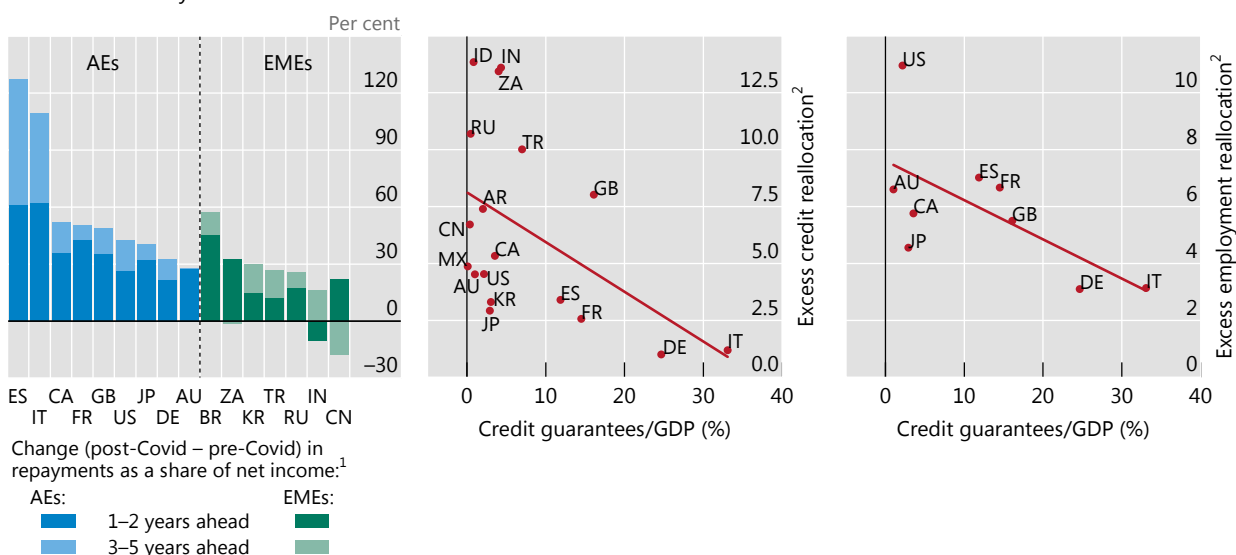
## Higher debt will weigh on investment and reallocation

Graph I.14

Large rise in short-term debt coming due in next two years

Credit reallocation

Employment reallocation



<sup>1</sup> Average yearly repayments for the stated period, as a share of 2019 net income, keeping a balanced sample of firms across time periods. Includes debt securities and loans. Repayments as a share of net income calculated as the sum of yearly total repayments in each country and year divided by the sum of annual net income in each country in 2019. "Post-Covid" includes amount outstanding for the latest stocks of debt securities and bank loans reported, whereas "pre-Covid" includes similar amounts outstanding up to and including Q4 2019. <sup>2</sup> Excess reallocation equals total credit/employment reallocation minus the minimum amount required to accommodate the net change in credit/employment across all firms. For more details, see A Herrera, M Kolar and R Minetti, "Credit reallocation", *Journal of Monetary Economics*, vol 58, 2011.

Sources: IMF, *Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic*, April 2021; S&P Capital IQ; BIS calculations.

## Covid-19 and the corporate credit loss outlook

Corporate credit losses from the Covid-19 pandemic could increase as containment measures persist, new consumption patterns and business practices accelerate the downsizing of specific sectors, and the exhaustion of liquidity buffers pushes some firms into insolvency. These losses will need to be absorbed, either by the financial system or by taxpayers. Yet there is considerable uncertainty about their future evolution. Much will depend on the strength of the economic recovery, whether financial conditions remain accommodative and on the extent and duration of government support.<sup>①</sup>

This box examines the outlook for corporate credit losses through the lens of two approaches. The first is top-down and based on sectoral-level analysis.<sup>②</sup> This approach estimates credit loss rates (ie losses as a share of total debt) at a sectoral level for the G7 countries, China and Australia. It applies existing estimates of the sensitivity of credit losses to GDP to economic projections from a multi-sector macroeconomic model.<sup>③</sup> The model's aggregate GDP projections are similar to the "central scenario" discussed in the main text, while the sectoral projections account for the uneven effects of the pandemic on different economic sectors. The analysis then uses data on bonds and bank loans by sector to map credit loss rates into total credit losses by country.

The second approach is bottom-up and based on firm-level data for nine AEs and nine EMEs.<sup>④</sup> The analysis involves three steps. First, a "shadow rating" is assigned to each firm based on historical patterns and firm-level financial statement data for 2020 to measure its inherent credit quality.<sup>⑤</sup> Second, a default rate is assigned for each rating which depends on projected economic and financial conditions.<sup>⑥</sup> Finally, firm-level default probabilities are multiplied by loss-given-default (LGD) estimates, which vary by country, sector and debt type, to compute credit losses.<sup>⑦</sup> The specific firms covered in this analysis tend to enjoy better than average credit quality, as they are primarily large firms that have published financial results for 2020. As a result, this approach projects lower expected credit losses than the top-down one, which implicitly captures the credit losses of all firms. However, even if based on a less representative sample, the bottom-up approach can still shed light on the yearly *change* in credit losses and provide a comparison with experiences in previous recessions.

The top-down approach suggests that credit losses could increase in 2021 relative to recent years. Conditional on the model-based GDP projections, the approach estimates that credit loss rates for bonds could peak at 1.9% in 2021, up from 0.5% in 2019 (Graph I.E, left-hand panel). Despite the substantial increases for some countries and sectors, aggregate credit loss rates would rise by less than during the GFC, when loss rates on non-financial corporate bond debt reached 2.9%.

The bottom-up baseline scenario presents a more optimistic outlook. Credit losses are projected to actually decline in 2021 if the analysis is based on credit ratings estimated with end-2020 balance sheets, on analysts' cash flow forecasts for 2021, on current financial conditions and on Consensus 2021 GDP growth forecasts (ie similar to the economic projections in the top-down analysis; see Graph I.E, centre and right-hand panels, solid red and blue lines). Relative to their GFC peaks, projected credit losses in EMEs are higher than in AEs, reflecting much larger GDP declines in many EMEs during the pandemic.

The bottom-up analysis, however, highlights the significant uncertainty around 2021 credit loss projections. Much will depend on the duration and effectiveness of government support measures. Government support reduces projected credit losses in three ways. First, by lowering default probabilities within each rating bucket owing to the widespread provision of debt moratoriums and loan guarantees. Second, by influencing the analysts' cash flow forecasts used to assign firms to rating buckets. This influence can be both direct (eg furlough schemes providing a boost to firm cash flows) and indirect (eg by raising aggregate GDP growth). Finally, by flattering the firms' end-2020 balance sheets. This translates into higher "shadow ratings" and lower projected credit losses than might be warranted based on firms' fundamentals alone.

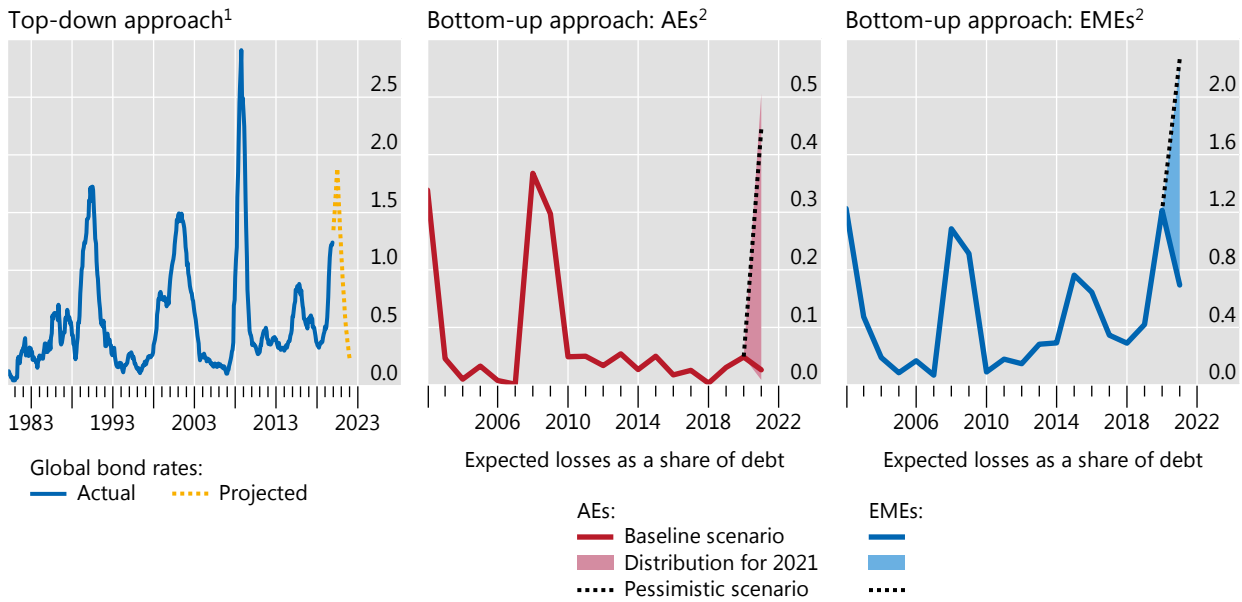
Given the uncertainty about how much government support measures will suppress defaults, it is worth considering a range of possibilities. The shaded fans in Graph I.E, centre and right-hand panels, show the range of credit losses that could occur based on annual default rates over the past 25 years. To compute the range, default rates for each rating bucket in a given year are applied to the estimated ratings based on 2021 cash flow forecasts and end-2020 balance sheet variables. The top and bottom of the range represent the highest and lowest estimated credit losses produced by this method.

The baseline credit loss projection sits at the lower end of the range based on historical default probabilities. This suggests that forecast earnings, and the macroeconomic projections on which they are based, are quite optimistic about the efficacy of government support measures. By contrast, the upper bound of the projected loss range implies an increase in non-financial corporate credit losses to roughly the same level as in the GFC for AEs, and twice as high as in that episode for EMEs. Such a scenario is consistent with a continuation of strained 2020 cash flows and a default incidence per rating bucket at the levels experienced during the GFC (dotted line in Graph I.E, centre and right-hand panels).

## Credit losses could increase by less than during the GFC, but vary by cash flow assumptions

In per cent

Graph I.E



<sup>1</sup> Global bond loss rates available until end-November 2020 are projected forward to 2021 and 2022 based on top-down country-level credit loss projections as described in the text. <sup>2</sup> Estimates of credit losses across the median country in sample of G20 economies. AEs: AU, CA, FR, DE, ES, GB, IT, JP, US. EMEs: BR, CN, ID, IN, KR, MX, RU, TR and ZA. Baseline estimates for 2021 based on 2021 estimated ratings and default probabilities. The distribution for 2021 is based on the range of historical default probabilities applied to the 2021 estimated ratings. The pessimistic scenario for 2021 is based on end-2020 ratings and 2009 default probabilities.

Sources: IMF, *World Economic Outlook*; Moody's CreditEdge; Moody's Investor Service; S&P Capital IQ; authors' calculations.

Thus, credit losses could increase sharply if economic conditions deteriorate or government support measures are less effective than anticipated. Large losses could also arise if the degree of sectoral reallocation induced by the pandemic – implicitly captured in our analysis by sectoral GDP projections and analysts' earnings forecasts – turns out to be larger than these approaches assume.

① R Banerjee, J Noss and J Vidal-Pastor, "Liquidity to solvency: transition cancelled or postponed?", *BIS Bulletin*, no 40, March 2021. ② For details, see B Mojon, D Rees and C Schmieder, "How much stress could Covid put on corporate credit? Evidence using sectoral data", *BIS Quarterly Review*, March 2021. ③ D Rees, "What comes next?", *BIS Working Papers*, no 898, November 2020. ④ The bottom-up analysis uses the same sample of AEs as the top-down analysis, with the addition of Spain. The difference between the two sets of results is not driven by country composition. ⑤ Ratings are predicted using the model  $rating_{isct} = \beta_2 Y_{isct} + \alpha_s + \gamma_c + \varepsilon_{isct}$ , where  $rating_{isct}$  is the rating of firm  $i$  in sector  $s$  in country  $c$  in year  $t$  and  $Y_{isct}$  are firm-level variables: Altman z-score (which is a function of working capital, retained earnings, earnings before interest payments and taxes (EBIT), sales and price-to-book (public firms) and book equity (private firms) ratio); return on assets, interest coverage ratio, leverage and size.  $\alpha_s$  and  $\gamma_c$  are sector and country fixed effects. The model is estimated over the period 1985–2019. For the baseline scenario projected ratings, we use 2021 analyst forecasts for the cash flow variables (EBIT, sales, return-on-assets), if available. If not, we use the average forecasts for firms in the same country and sector. For balance sheet variables (working capital, retained earnings, leverage, total assets), we use end-2020 balance sheet data. Interest expenses are also based on end-2020 financial statement data. ⑥ To project conditional default probabilities for each rating bucket in 2021, we estimate the model  $default\ rate_{rt} = \beta_1 GDP\ growth_{rt} + \beta_2 Financial\ Conditions_{rt} + \rho\ default\ rate_{rt-1} + \alpha + \varepsilon_{rt}$ , for each rating category  $r$  in year  $t$ , again over the sample 1985–2019. We then use the estimated coefficients,  $\beta_1$  and  $\beta_2$  together with 2021 consensus GDP growth forecasts and financial conditions for the country in which the firm is based to project default probabilities for each rating category. ⑦ Country-level loss-given-default (LGD) rates are based on data from the World Bank's Doing Business Report. Sector and debt-type LGD rates are based on data from Moody's and Standard & Poor's.



the past year, countries with larger credit guarantee schemes have seen less reallocation of credit across firms (Graph I.14, centre panel). Larger guarantee schemes have also gone hand in hand with less labour reallocation across firms (right-hand panel). If they constrain resource reallocation to more productive firms, these developments could hold back growth prospects even after lockdowns ease and consumption growth recovers.

This scenario would be more challenging in many respects than the previous one, particularly for EMEs. While global financial conditions would probably remain supportive, policy space in these economies would be stretched if weaker domestic economies and pre-existing vulnerabilities heightened international investors' risk aversion.

## General considerations

The scenarios described above point to a number of considerations. First, it is important to limit the spread of Covid-19 globally. Large virus outbreaks are associated with the most adverse economic outcomes, particularly if the solvency of financial institutions comes into question. This speaks to the value of international cooperation in the provision of vaccines and support to health systems when they come under pressure. Second, for some countries economic and financial turbulence could arise despite strong global economic growth. This highlights the need for policymakers to monitor emerging risks closely. Finally, for most countries the legacy of the pandemic will probably be felt long after the virus is brought under control. Corporate and private debt levels will remain high for years to come, and reallocation of capital and labour has barely started. Policymakers will need to take account of these developments when planning their response to evolving economic conditions.

## Macroeconomic policy challenges

In the near term, the key macroeconomic policy task is to support the economy through the recovery. The specific policy configuration will depend on the path of economic activity, taking into account the uncertainties involved. In contrast to the early phase of the crisis, large differences in economic conditions across countries will call for a more differentiated approach, which will challenge countries where economic conditions are weaker.

In the longer term, there are two policy prerogatives. The first is to gradually normalise, once conditions allow, to regain space for both monetary and fiscal policy. The second is to manage the relationship between the two policies in an environment in which their implementation would be less interdependent than during the early stages of the pandemic.

## Near-term challenges

In the central scenario, the policy challenges would be a natural evolution of those faced over the past year.<sup>16</sup> Although the economic recovery has proved stronger than expected, constraints on certain activities persist, and considerable uncertainty surrounds the evolution of the pandemic and its long-term legacy. As a result, following a risk management approach, authorities will need to continue to provide the necessary support while facilitating the required reallocation of resources, even while its extent and precise contours remain unclear. Ensuring that the inevitable policy adjustments in the light of evolving economic conditions are not misinterpreted poses a complex communication challenge.

The recovery, together with the need to preserve precious policy space, suggests that fiscal policy will need to become more targeted. Indeed, in some countries blanket stimulus is already being phased out. In Canada, for example, broad-based wage subsidies have been replaced with hiring subsidies reserved for firms whose revenues have yet to fully recover. As the crisis transitions from its liquidity to its solvency phase, governments are also adjusting policies to better distinguish viable from non-viable businesses in order to facilitate restructuring. In Singapore, for instance, firms are now obliged to resume principal repayments on loans covered by debt moratoriums and give banks more information about their viability.<sup>17</sup> At the same time, the high degree of uncertainty rewards flexibility. Trade-offs arise here too. Experience suggests that quickly addressing the debt overhang and cutting any sectoral excess capacity supports sounder recoveries than a gradual approach.<sup>18</sup> That said, a surge in firm closures could overwhelm countries' restructuring capacity.

Monetary policy will also need to remain accommodative but, as the recovery progresses, central banks will face a delicate communication challenge. On the one hand, there is the need to provide sufficient reassurance to avoid a market-driven pre-emptive tightening of financial conditions. On the other, emphasising policy predictability poses the risk of constraining central banks, making them unable to adjust promptly if the economy surprises on the upside. In the trade-off, the potential side effects of prolonged and extraordinary monetary accommodation would play a role. Indeed, the continued exceptionally easy financial conditions and unusual buoyancy of house prices have already raised some concerns. In recent months, central banks in Australia, Canada and Switzerland, among others, have highlighted the risks from soaring house prices in statements accompanying their monetary policy decisions, while the Reserve Bank of New Zealand has been tasked with considering the impact of its decisions on house prices when setting policy.<sup>19</sup> Central banks have tried to address this dilemma by modifying their forward guidance, playing down the calendar-based aspects and emphasising its dependence on economic conditions.<sup>20</sup>

Some central banks, however, may have little choice but to tighten. Already in 2021, higher inflation has prompted central banks in Brazil, Russia and Turkey to hike interest rates. Should commodity prices continue to rise or global bond yields resume their climb, other EME central banks could feel compelled to follow suit (Box I.F). That said, not all EMEs are equally exposed to developments abroad. In some East Asian countries, subdued inflation and ample foreign exchange reserves could give central banks more scope to keep policy settings tailored to domestic economic conditions.

Prudential policy faces two challenges. The first is ensuring that banks are sufficiently well capitalised to absorb potential losses. Risks remain, although to date banks have predicated their provisioning decisions on a smooth central scenario, with some banks actually reducing loss provisions in the second half of 2020.<sup>21</sup> Hence the active use of heightened monitoring to ensure that banks recognise all impairments and price credit risks correctly. Authorities have also used stress tests to gauge the financial system's sensitivity to tough scenarios, such as a renewed wave of strict lockdowns. The second challenge is helping to contain the build-up of financial imbalances, particularly in housing markets. For instance, in recent months prudential authorities in Canada, the Netherlands and New Zealand have introduced macroprudential measures aimed at cooling the housing market, including tighter loan-to-value limits and higher floors on the interest rates banks use to evaluate mortgage affordability.

One limitation prudential policy will face in addressing the build-up of vulnerabilities is that the current toolkit is not fully fit for purpose. The prudential

## Tighter global financial conditions and EMEs

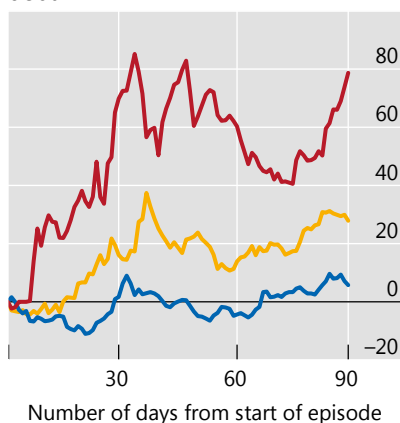
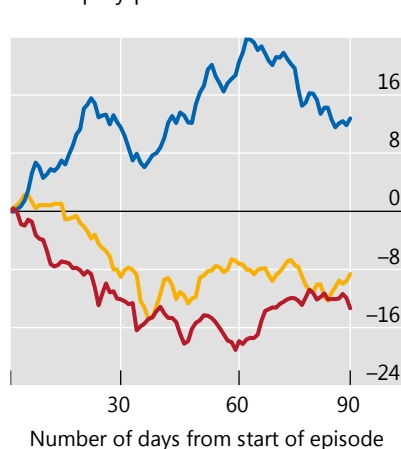
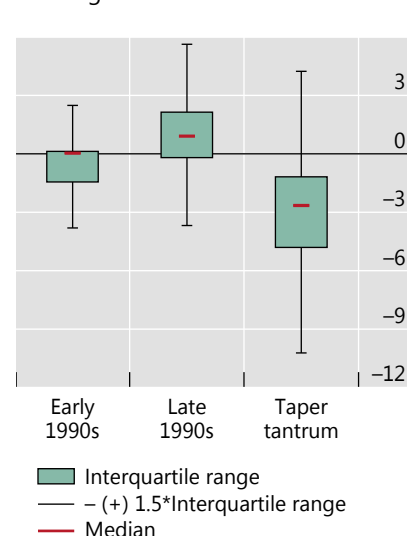
The strong economic recovery in many AEs and China is a mixed blessing for other EMEs. On the one hand, faster global growth increases demand for EME exports and tends to lift commodity prices, benefiting their exporters. On the other hand, stronger growth in AEs is typically accompanied by tighter global financial conditions. Indeed, long-term bond yields have risen substantially in many countries in 2021, although broader measures of financial conditions have so far remained exceptionally accommodative. This confluence raises three related questions. First, does the cause of higher US bond yields matter for the tightening of global financial conditions? Second, how vulnerable are EMEs to such a tightening? And third, what could policymakers do to manage the fallout?

Rising US long-term bond yields have often preceded tighter financial conditions in EMEs, but the intensity of the impact varies greatly across episodes. Some, such as those beginning in February 1994 and May 2013 (known as the “taper tantrum”) coincided with capital outflows, a sharp rise in funding costs and lower equity prices (Graph I.F.1, left-hand and centre panels). The taper tantrum also prompted large exchange rate depreciations in several EMEs (right-hand panel). Exchange rates did not initially respond as much in 1994, in part because many EMEs had exchange rate pegs. However, several EMEs experienced large devaluations a few months later, most notably Mexico, which received assistance from international organisations to cope with the resulting financial crisis. By contrast, some other episodes of rising US bond yields were much more benign. For example, the gradual increase in US long-term bond yields that began in April 1999 was associated with stable bond spreads and rising equity prices in EMEs. While exchange rates depreciated in some EMEs in that episode, they appreciated in others.

### EME financial variables during selected episodes of rising US bond yields

In per cent

Graph I.F.1

Spreads on USD-denominated EME debt<sup>1</sup>EME equity prices<sup>2</sup>Exchange rates<sup>3,4</sup>

— Early 1990s    — Taper tantrum  
— Late 1990s

■ Interquartile range  
— (+) 1.5\*Interquartile range  
— Median

<sup>1</sup> Change in the EMBI bond spread since the start of the episode. <sup>2</sup> Change in the MSCI Emerging Markets Index since the start of the episode. <sup>3</sup> The sample includes AR, BR, CL, CO, CZ, HK, HU, ID, IL, IN, KR, MX, MY, PE, PH, PL, RO, RU, SG, TH, TR, VN and ZA, subject to data availability. <sup>4</sup> Thirty-day change in nominal USD exchange rate from the start of the episode.

Sources: IMF; OECD; Bloomberg; JPMorgan Chase; BIS calculations.

Financial market expectations of monetary policy in the United States are key in determining whether a rise in US yields generates disruptive spillovers.<sup>①</sup> Both the 1994 episode and the taper tantrum involved a sharp financial market reassessment of the likely pace of US monetary policy tightening. In contrast, the rise in yields in 1999 seemed to largely reflect gradually evolving expectations of higher US inflation on the back of a long expansion rather than large US monetary policy surprises.

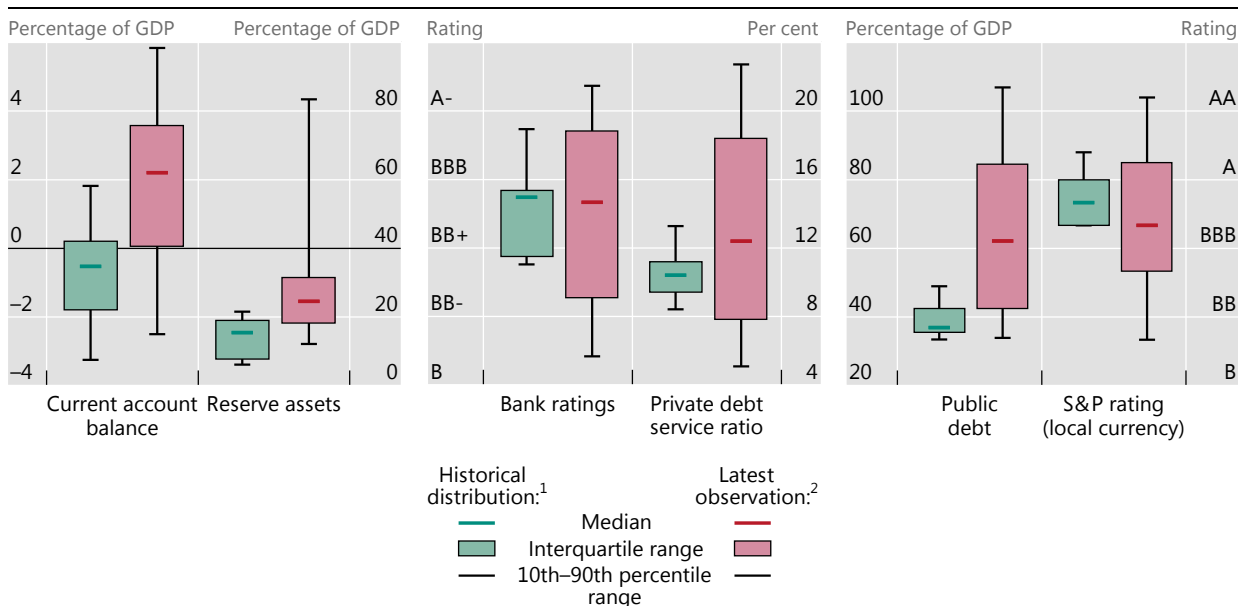
Besides US monetary policy, factors related to the composition of capital inflows influence whether higher US bond yields will trigger a financial tightening in EMEs. US yield increases that occur after a period of

trend EME currency appreciations and sizeable capital inflows, typically on the back of strong risk-taking, are more often associated with tighter financial conditions. A larger amount of foreign currency debt and greater participation of foreign investors in local currency sovereign debt markets also tends to exacerbate the effect of rising US yields on EME financial conditions.<sup>2</sup>

In addition to debt composition, investor perceptions of the fundamentals and creditworthiness of EMEs can be important determinants of the severity of the hit to EMEs as a group and individually. By some measures, EMEs look to be better placed than in the past. Foreign exchange reserves are generally higher and current account balances more favourable than in previous episodes of rising US bond yields (Graph I.F.2, left-hand panel). Bank credit ratings are also somewhat higher on average than in previous episodes, albeit with a wide dispersion (centre panel). Despite generally low interest rates, private sector debt service ratios are, on average, at a similar level to the past and could rise rapidly if funding costs increased. Many EMEs also have more resilient institutional settings. In particular, improved monetary policy frameworks have made for better anchored inflation expectations, moderating exchange rate pass-through into consumer prices.<sup>3</sup> These factors should reduce the likelihood and size of capital outflows in response to tightening financial conditions.

Stronger current accounts and FX buffers today, but weaker fiscal positions

Graph I.F.2



<sup>1</sup> Distribution of the median of the variables shown on the x-axis at the outset of the 20 largest increases in 10-year US bond yields over non-overlapping three-month windows over the period 1990–2019. The sample comprises AR, BR, CL, CN, CO, HK, ID, IN, KR, MX, MY, PE, PH, PL, RU, SG, TH, TR and ZA. Fewer observations for earlier episodes due to data constraints. <sup>2</sup> For external debt, latest available IMF WEO forecasts for the current year at the beginning of each episode, except for the last episode (April 2021 forecasts). For other variables, latest available observations for the beginning of each episode.

Sources: IMF, ARA template for emerging markets, *Balance of Payments Statistics*, *International Financial Statistics* and *World Economic Outlook*; Consensus Economics; S&P Global Ratings; BIS credit to the non-financial sector statistics; national data; BIS; BIS calculations.

However, by other measures, in particular related to fiscal positions, EMEs look more vulnerable than in past episodes. To cushion the effects of the Covid-19 pandemic, many EMEs are running large fiscal deficits, public and external debt levels in relation to GDP have generally increased, and credit ratings have deteriorated, at least for local currency debt (Graph I.F.2, right-hand panel). Historically, these vulnerabilities have coincided with greater investor retrenchments.

Of course, there are again significant differences today across countries along these dimensions. Some may be more resilient because of, say, more robust financial sectors or less dependence on external financing; others may be more vulnerable, either because of international investors' perceptions about the stability of policy frameworks or because fiscal deficits are not counterbalanced by expectations of strong growth potential over the medium term. There is evidence that international investors have become more attuned over time to these and other cross-country differences in vulnerabilities.<sup>4</sup>

If global financial conditions tighten, EME policymakers will have to respond, for which they can draw on their experience and pragmatism in deploying a broad set of tools.<sup>5</sup> Foreign exchange intervention, which is relatively nimble, can serve as a first line of defence against undue currency volatility resulting from swings in

capital flows. In addition to operating in spot markets, providing protection against exchange rate swings for lenders and domestic investors can help compensate for thin hedging markets. At the same time, foreign exchange reserves are finite and in some cases may be insufficient to cope with a severe financial tightening. Meanwhile, a number of monetary policy instruments can be used to stabilise financial markets and influence domestic financial conditions. Although lowering interest rates is the standard monetary response to worsening economic conditions, EME central banks are often constrained from doing so when financial conditions tighten as it can hasten capital outflows. At such times, balance sheet operations can offer an extra degree of freedom for central banks as they formulate their response. The use of asset purchases in particular can provide support for local currency bond markets, which have become more important in many EMEs. Refinancing operations for financial institutions are another option for shoring up market functioning, supporting the flow of credit and offsetting a tightening of financial conditions. Where macroprudential regulations have previously been used to strengthen the resilience of financial institutions, these can be eased. However, macroprudential policies are ill-suited to dealing with a sudden worsening of conditions, given their long implementation and transmission lags.

The exact mix of tools and their sequencing will depend on country-specific features and economic circumstances. For example, some central banks in countries with a history of fiscal dominance and high inflation are prohibited from purchasing government securities. Or they may face tight limits on such purchases or simply be reluctant to do so. The nature of vulnerabilities is also key. The need for foreign exchange intervention, for example, will be determined in large part by the prevalence of unhedged foreign exchange exposures, which can reside in a variety of sectors. Similarly, the benefits of asset purchases depend importantly on the degree of foreign participation in local currency bond markets as well as the ability of local financial institutions to step in and absorb any selling pressure. Determining the most appropriate mix and sequence of tools to deploy promptly during periods of heightened financial market stress is a key practical challenge.<sup>⑥</sup>

<sup>①</sup> See eg Committee on the Global Financial System, *Changing patterns of capital flows*, CGFS Papers, no 66, May 2021.

<sup>②</sup> See eg E Cavallo, "International capital flow reversals", *IDB Working Paper Series*, no IDB-WP-1040, August 2019. <sup>③</sup> See eg M Jašova, R Moessner and E Takáts, "Exchange rate pass-through: what has changed since the crisis?", *International Journal of Central Banking*, vol 15, September 2019, pp 27–58.

<sup>④</sup> See eg S Ahmed, B Coulibaly and A Zlate, "International financial spillovers to emerging market economies: How important are economic fundamentals?", *Journal of International Money and Finance*, vol 76, September 2017.

<sup>⑤</sup> See BIS, "Monetary policy frameworks in EMEs: inflation targeting, the exchange rate and financial stability", *Annual Economic Report*, June 2019, Chapter II for an overview of policy frameworks and tools in EMEs. <sup>⑥</sup> For an overview of how EME central banks evaluate the nature of shocks to capital flows and incorporate these into their policy frameworks see BIS, *Capital flows, exchange rates and policy frameworks in emerging Asia*, report by a working group of the Asian Consultative Council, November 2020; and BIS, *Capital flows, exchange rates and monetary policy frameworks in Latin American and other economies*, report by a group of central banks including members of the Consultative Council for the Americas and the central banks of South Africa and Turkey, April 2021.

tools at the command of authorities do not cover many non-bank financial institutions.<sup>22</sup> The post-GFC financial reforms targeted primarily banks, insurance companies and market infrastructures, in particular central counterparties (CCPs), but large swathes of the financial system have not seen significant reforms. The asset management industry – the territory of both leveraged and unleveraged players – is the most notable example. It is these institutions that were at the epicentre of the tremors in March 2020 and among which the most recent signs of stress have emerged, including in the cryptocurrency segments.<sup>23</sup> A prolonged period of aggressive risk-taking suggests that substantial leverage and liquidity mismatches may hide below the surface. Work is under way in the international community to tackle some of the structural vulnerabilities in this area.<sup>24</sup> In the near term, the challenge will be to monitor developments closely and to make sure that the core of the financial system, notably banks and CCPs, remains resilient.

In the first alternative scenario, where growth and inflation exceed expectations and financial conditions tighten, policies may need to be recalibrated. Fiscal authorities could afford to phase out accommodation more quickly, although there is considerable inertia built in to some of the announced initiatives. Prudential policy, meanwhile, could ensure that prudential buffers return to pre-crisis levels faster.

Monetary policy would face the trickiest challenges. A tightening of financial conditions in response to an inflation surprise – most likely in the United States – would put central banks in a delicate position. If a central bank disagreed with the market assessment, it could remain committed to a more accommodative stance and attempt to shape expectations of the economic outlook and its reaction function. This would not necessarily be a smooth process, and bouts of market volatility would be likely so long as investors continued to doubt the central bank's economic projections or commitment to its stated policy trajectory. Communication would be tested even more than in the central scenario. The final outcome would depend on the actual inflation trajectory and the speed with which market expectations adapt.

Spillovers to the rest of the world would raise different issues. Where higher inflation would be welcome given past undershoots of targets, central banks could afford to remain patient. By contrast, more EME central banks than in the central scenario would be under pressure to tighten, especially where currencies dropped and fuelled inflation above tolerable levels. This would further widen the divergence in economic conditions around the world.

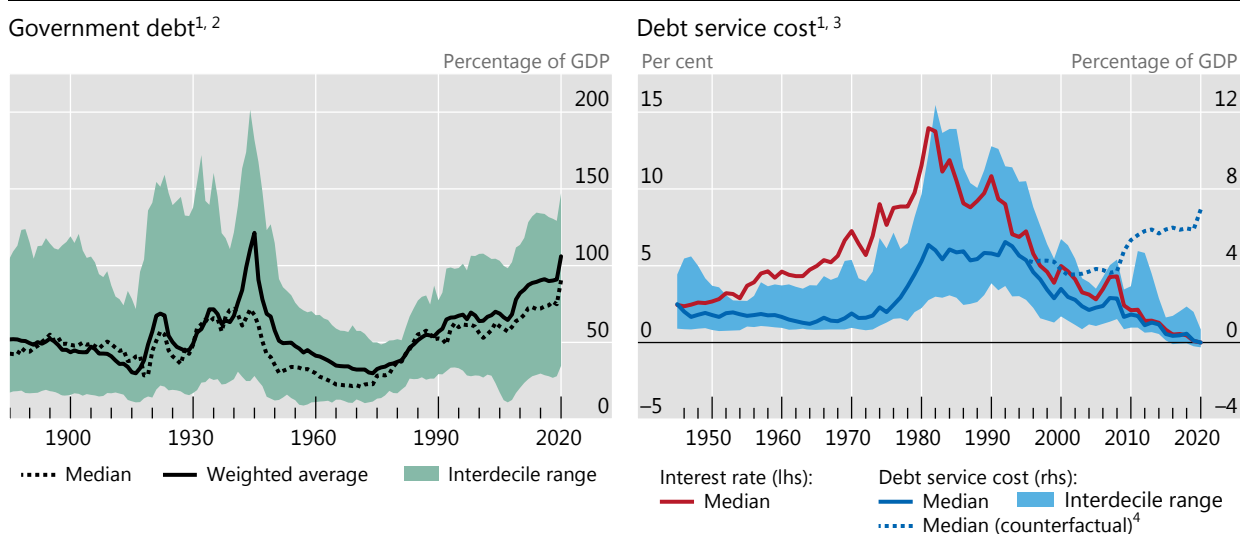
In the second alternative scenario, where growth disappoints, even more accommodative policies may be called for. In hindsight, many economies entered the pandemic with more room to provide policy accommodation than had previously been realised, in the case of EMEs facilitated by monetary and financial easing in AEs. However, providing additional stimulus could test policy space in a number of countries. Some may need to reintroduce emergency measures used early last year, such as liquidity provision to financial institutions and support for corporate bond markets, particularly if financial markets seized up. Additional support for businesses may be also required. Again, EMEs would be particularly vulnerable, not least because they have already depleted much of their conventional policy space and the use of unconventional measures there is subject to more constraints – of an economic and political economy nature – than in AEs.

This scenario would also exacerbate the intertemporal trade-offs. By prolonging the duration of exceptionally accommodative monetary policy, it would risk further stoking imbalances in asset prices, particularly in housing markets. A further narrowing of interest rate margins would challenge bank profitability and make it more difficult to rebuild capital. The combination of weak banks, easy financial conditions and low business profitability could see the emergence of more zombie firms, leaving a legacy of lower productivity growth.

## Longer-term challenges

Peering further into the future, once the pandemic is left behind and the economy is restored to health, a key challenge will be to reorient policy back towards longer-term objectives. This will involve fostering a sustainable path to stronger growth while at the same time gradually normalising monetary and fiscal policies and dealing effectively with any tension that might arise between the two along that path. In doing so, policymakers will have to contend with the legacy of the pandemic, including much higher public debt, lower interest rates and larger central bank balance sheets.

Normalising monetary and fiscal policy over the longer term would provide safety margins to cope with both unexpected and unwelcome developments, such as the current pandemic and inevitable future recessions. The starting point is unprecedented. On the one hand, fiscal expansion has pushed government debt-to-GDP ratios to levels on a par with, or higher than, those in the aftermath of World War II (Graph I.15, left-hand panel). On the other hand, according to historical records, nominal interest rates have never been so low (right-hand panel). In fact,



<sup>1</sup> Sample of 19 AEs and five EMEs. <sup>2</sup> General government debt at nominal value, latest available quarter for 2020. <sup>3</sup> Debt/GDP multiplied by the simple average of short- and long-term interest rates. <sup>4</sup> Median debt service if nominal interest rates had stayed at the 1995 level.

Sources: O Jordà, M Schularick and A Taylor, “Macrofinancial history and the new business cycle facts”, in M Eichenbaum and J Parker (eds), *NBER Macroeconomics Annual 2016*, vol 31, 2016; S A Abbas, N Belhocine, A El-Ganainy and M Horton, “A historical public debt database”, *IMF Working Papers*, no 10/245, 2010; European Commission, AMECO database; IMF, *World Economic Outlook*; OECD, *Economic Outlook*; Bloomberg; Datastream; Global Financial Data; Oxford Economics; BIS total credit statistics; BIS calculations.

they are so low that, despite the exceptionally high debt ratios, debt service costs are at historical troughs. The debt burden has never felt so light.

Policy normalisation cannot be taken for granted. The years leading up to the Covid-19 pandemic illustrate the challenges. Pre-pandemic, few central banks had managed to raise policy interest rates from the levels prevailing in the immediate aftermath of the GFC, even in countries that saw a long economic expansion and low unemployment rates. In many AEs, central bank balance sheets grew further, to peacetime highs. Public debt levels generally rose too, before the pandemic pushed them higher still.

One reason why normalisation is so hard is because it involves intertemporal trade-offs. The costs of normalisation, such as generally lower growth and higher unemployment, are immediate and concrete. Its benefits, such as having more room to combat economic downturns, are less tangible and accrue only in the future. Paradoxically, these difficulties are felt most keenly in AEs, where policymakers have greater freedom to delay normalisation to avoid its contractionary effects. In EMEs, where financial markets are typically less tolerant of narrowing policy headroom, the greater risk may be a premature tightening despite a weak economy.

A second reason reflects economic conditions. Ideally, faster growth and a pickup in inflation would support normalisation. But generating sustained inflation has proved surprisingly difficult, especially in AEs, where it has remained stubbornly below targets. While the large fiscal stimulus programmes under way in a number of countries could boost inflation in the years ahead, the evidence indicates that this is more likely in EMEs (Box I.G). Normalisation could be easier for central banks that pay greater attention to output and financial imbalances and that are more willing to tolerate inflation shortfalls providing that longer-run expectations remain anchored. Even so, if inflation fails to pick up, there is a limit to how far central banks can normalise without threatening the credibility of their current inflation objectives. How much inflation will rise on a *sustainable* basis remains an open

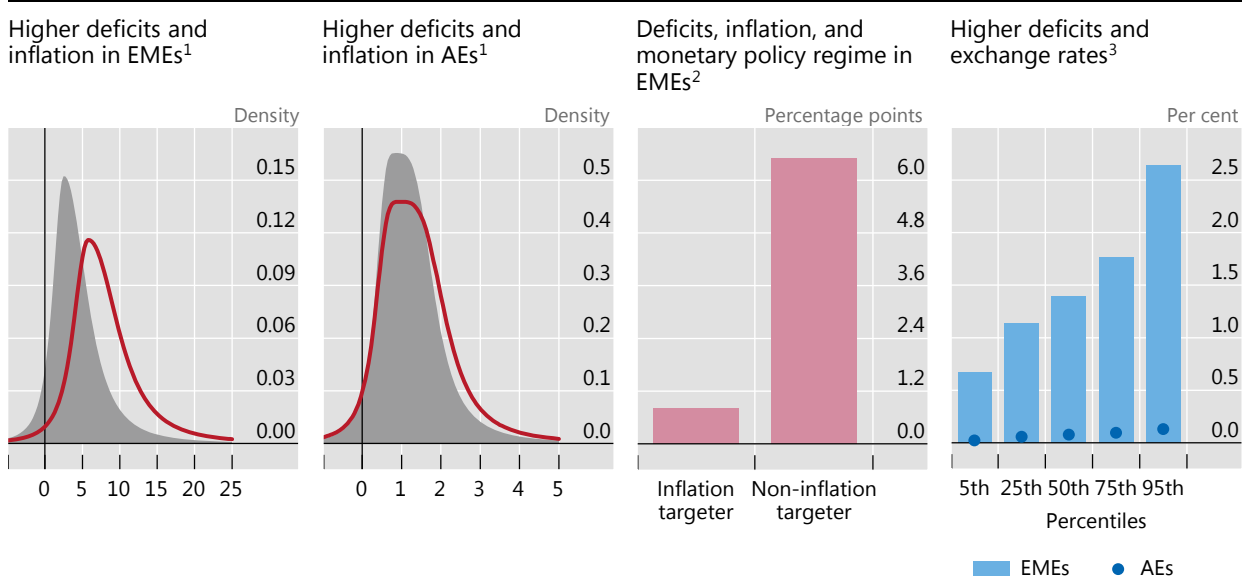
## Fiscal inflation?

The policy response to Covid-19 has strengthened the nexus between fiscal and monetary policy. In the early stages of the crisis this involved close cooperation between the two policies to stabilise financial markets and cushion the impact of the pandemic on households and firms. This, however, has contributed to record-high public debt and deficits, rising central bank holdings of public debt and a high sensitivity of government debt service burdens to monetary policy. Some observers have also expressed concern that the historically large increase in deficits could lead to resurgent inflation. The inflationary consequences of the US fiscal stimulus are currently a subject of debate. In addition, fiscal vulnerabilities have been prominent in a number of historical episodes of high inflation and macroeconomic instability, especially in EMEs.<sup>①</sup>

Graph I.G shows evidence that the relationship between an increase in fiscal deficits and the distribution of future inflation outcomes has been considerably stronger in EMEs than in AEs. The underlying “inflation at risk” model relates the one-year-ahead distribution of possible inflation outcomes to the change in fiscal deficits, as well as to output growth, current inflation, the change in the exchange rate and the oil price, and a dummy variable for sovereign debt crises.<sup>②</sup> The estimates, based on a sample that includes a number of high-inflation episodes, suggest that a one standard deviation increase in EME fiscal deficits raises inflation by 5.5 percentage points at the median of the distribution (first panel); this effect is more than 10 times larger than that for AEs (second panel).<sup>③</sup> The evidence is consistent with other findings in the literature. In particular, a number of studies find that deficits have larger effects on inflation in countries with higher inflation rates or during periods of higher inflation globally.<sup>④</sup>

### Inflationary effects of deficits vary between economies and policy regimes

Graph I.G



<sup>1</sup> Change in one-year-ahead conditional inflation forecast distribution (change from grey to red) when there is a one standard deviation increase in fiscal deficits. To compute the distributions, all other variables are set at their means. The sample, covering 21 AEs and 26 EMEs, runs from 1960 to 2019. The length of the country-specific samples depend on data availability. <sup>2</sup> The effect of a one standard deviation increase in deficits on future inflation in EMEs, computed at the 50th percentile of the future inflation distribution. The equation includes an interaction variable between a dummy variable for inflation targeters and the change in deficits, as well as the dummy variable included on its own. The interaction variable is statistically significant at the 5% level. <sup>3</sup> Bars show the effect of a 1 percentage point increase in the fiscal deficit on the depreciation of the EME currency against the US dollar in the following year; dots show the corresponding effect for AEs. The results are shown by the quantile of the exchange rate depreciation. Based on quantile regressions with the change in the bilateral US dollar exchange rate as the dependent variable. All percentiles except the fifth are statistically significant at conventional levels for EMEs; no percentiles are statistically significant for AEs.

Sources: R Banerjee, J Contreras, A Mehrotra and F Zampolli, “Inflation at risk in advanced and emerging market economies”, *BIS Working Papers*, no 883, September 2020; BIS calculations.

Fiscal-monetary policy interactions affect the strength of the deficit-inflation link. Reflecting the importance of the monetary regime, the third panel suggests that an increase in deficits leads to a smaller increase in future inflation in inflation targeting regimes. A one standard deviation increase in EME fiscal deficits is



estimated to raise future inflation by around 0.8 percentage points when a central bank pursues inflation targeting, and by 6.5 percentage points when another monetary policy regime is in place (Graph I.G, third panel). Given the prevalence of price stability-oriented monetary policy frameworks in EMEs in recent years – for example, over two thirds of G20 EMEs now pursue inflation targeting – inflation risks from higher deficits are probably much more muted than in the past.<sup>⑤</sup>

Exchange rate dynamics could partly account for the observed differences between AEs and EMEs. A fiscal expansion could lead to a loss of investor confidence, especially if a country is perceived to have little or no fiscal space. As sovereign risk rises, pressure for the exchange rate to depreciate may build and inflation expectations may start to drift away from target. Such effects could be especially relevant in EMEs as they generally have less perceived fiscal space and their inflation is more sensitive to exchange rate movements. Indeed, empirical estimates suggest that in EMEs a rise in fiscal deficits increases the probability of larger exchange rate depreciations (Graph I.G, fourth panel, bars). By contrast, higher deficits do not appear to affect exchange rates in an economically or statistically significant way in AEs (dots).

In conclusion, higher deficits can translate into higher inflation pressures, with the effects likely to vary significantly across economies. Relevant factors include the extent of fiscal space, the credibility of monetary policy and the degree to which inflation expectations are anchored – often working in close interaction with exchange rates.

① See eg C Esquivel, T Kehoe and J Nicolini, “Lessons from the monetary and fiscal history of Latin America”, Federal Reserve Bank of Minneapolis, *Research Department Staff Reports*, no 608, July 2020; P Krugman, “Fighting Covid is like fighting a war”, *The New York Times*, 7 February 2021; and L Summers, “The Biden stimulus is admirably ambitious. But it brings some big risks, too”, *The Washington Post*, 4 February 2021. ② The model is estimated using a quantile panel regression framework using annual data from 1960s onwards for 21 AEs and 26 EMEs and developing economies. The length of the country-specific samples depends on data availability. For a description of the methodology, see R Banerjee, J Contreras, A Mehrotra and F Zampolli, “Inflation at risk in advanced and emerging market economies”, *BIS Working Papers*, no 883, September 2020; and R Banerjee, A Mehrotra and F Zampolli, “Fiscal sources of inflation risk”, mimeo, 2021. ③ Fiscal deficits also generally have an economically larger effect on the right-hand tail of the inflation distribution, implying that they raise upside inflation risks in particular. However, the differences in the effects along the distribution are generally not statistically significant. ④ See eg L Catao and M Terrones, “Fiscal deficits and inflation”, *Journal of Monetary Economics*, vol 52, issue 3, April 2005; S Fischer, R Sahay and C Vegh, “Modern hyper- and high inflations”, *Journal of Economic Literature*, vol 40, no 3, September 2002; and H-Y Lin and H-P Chu, “Are fiscal deficits inflationary?”, *Journal of International Money and Finance*, vol 32, February 2013. ⑤ In the estimation sample, around 95% of the country-year observations featuring inflation targeting occurred in the 2000s and 2010s.

question, not least because the longer-term effects of the pandemic on structural forces such as globalisation and technology have yet to play out.

A third reason is that postponing normalisation beyond a certain point may actually make it harder. Keeping monetary policy accommodative to support fiscal consolidation could encourage a further build-up of financial imbalances in the private sector. Given the exceptionally low service burdens, it could also induce further increases in government debt. In both cases, the economy’s sensitivity to higher interest rates would rise.

The joint need to normalise monetary and fiscal policies poses specific challenges. Along the path, normalisation in one area could complicate normalisation in the other. Fiscal consolidation would act as a drag on economic activity and inflation, hindering prospects for monetary policy normalisation. Conversely, given increased debt burdens, higher interest rates would increase the size of the required fiscal adjustment. In fact, the interest sensitivity of service costs is already very high. For example, should interest rates return to the levels prevailing in the mid-1990s, when inflation had already been conquered, median service costs would exceed the previous wartime peaks (Graph I.15, right-hand panel).

From this perspective, large-scale central bank purchases of government debt can heighten the interest rate sensitivity of borrowing costs. Considering the consolidated public sector balance sheet, these operations retire long-term government debt from the market and replace it with overnight debt – interest-

bearing central bank reserves. Indeed, despite the general tendency for governments to issue at longer maturities, central bank purchases have shortened the effective maturity of public debt. Where central banks have used such purchases more extensively, some 15–45% of public debt in the large AE jurisdictions is in effect overnight.<sup>25</sup>

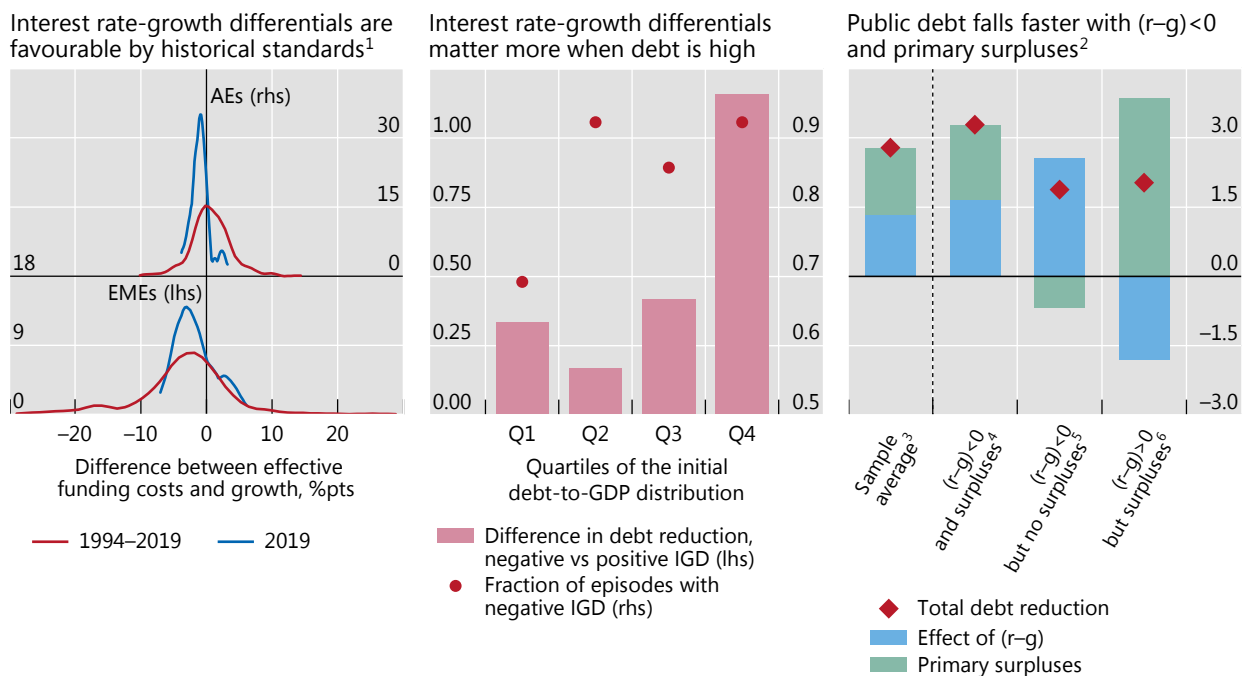
One cause for optimism concerning fiscal policy normalisation prospects is that interest rates have been generally below growth rates for some time. Such a favourable configuration sets a ceiling on the ratio of debt to GDP for a given fiscal deficit and means that the ratio will start to decline when deficits are sufficiently small. It can also facilitate an increase in the average duration of public debt, lowering rollover risk in countries where fiscal sustainability is a concern. And indeed, interest rate-growth differentials are very favourable from a longer-term perspective (Graph I.16, left-hand panel), in part because real interest rates have been negative for an exceptionally long time.

However, the history of successful episodes of consolidation raises a note of caution. Successful debt-to-GDP reductions have relied exclusively on a favourable interest rate-growth differential only in a small fraction (22%) of cases. Primary surpluses alone have hardly ever succeeded (only 15% of cases), particularly when public debt is high (Graph I.16, centre panel). Instead, a combination of surpluses and favourable interest rate-growth differentials has generally been necessary (64% of cases). Such a combination naturally also increases the speed of adjustment, by

## How have countries successfully lowered public debt?

In percentage points

Graph I.16



<sup>1</sup> Ratio of gross interest payments and one-year lagged gross liabilities minus nominal GDP growth, multiplied by 100. Sample consists of 22 AEs and 15 EMEs. <sup>2</sup> Average yearly drop in public debt to GDP (D/Y), during periods where D/Y falls for at least three consecutive years. Sample consists of 57 public debt reduction episodes in 22 AEs and 10 EMEs over the period 1960–2020. <sup>3</sup> All debt reduction episodes. <sup>4</sup> Debt reductions when D/Y fall was accompanied by  $(r-g) < 0$  (ie the effective interest rate was less than the GDP growth rate) and primary surpluses. <sup>5</sup> Debt reductions when D/Y fall was accompanied by  $(r-g) < 0$  and primary deficits. <sup>6</sup> Debt reductions when D/Y fall was accompanied by primary surpluses and  $(r-g) < 0$ .

Sources: IMF; OECD; BIS calculations.

some 50% (right-hand panel). Thus, the window of opportunity provided by favourable interest rate-growth differentials should not be missed.

The fact that, along the normalisation path, the objectives of fiscal and monetary policy could give rise to tensions raises the spectre of fiscal dominance.<sup>26</sup> Fiscal dominance denotes a situation in which monetary policy is unable to tighten as a result of fiscal constraints. The mechanism operates through the sensitivity of debt service costs to higher interest rates.

Fiscal dominance can arise for two reasons: economic conditions and political economy pressures. In the case of fiscal dominance related to economic conditions, higher interest rates cause major economic damage, forcing the central bank to refrain from tightening even when it would otherwise be desirable to do so. An archetypal example in EMEs is when the higher interest rates necessary to counter inflation undermine the government's creditworthiness, triggering a disruptive capital outflow, a sharp currency depreciation and even higher inflation. In the case of political economy pressures, the government forces the central bank to deviate from its objectives in order to limit the rise in its borrowing costs. All this suggests that the risk of fiscal dominance depends on institutional and economic factors, and is generally higher where the creditworthiness of the sovereign is weaker.

The remedies for fiscal dominance depend on the type. Addressing political economy pressures puts a premium on strong institutional arrangements to buttress the central bank's autonomy. But when the origin is purely economic constraints, even an independent central bank may have little choice but to keep interest rates low. In this case, the only remedy is fiscal consolidation.

Given the scale of the challenges involved, a key imperative is to adopt policies that strengthen sustainable growth without seeking to achieve it simply through easy monetary policy or fiscal stimulus. Structural reforms that promote a vibrant, flexible and competitive economy are essential. At the current juncture, those facilitating a reallocation of resources in the light of the pandemic-induced changes in demand patterns have a specific role to play. In addition, besides a supportive tax regime, the allocation of government expenditure matters. The necessary large increases in government transfers to households and firms during the pandemic seem to have come at the cost of lower public investment. Shifting the composition of spending back towards investment as economic conditions improve would provide welcome support. That said, as history indicates, the political economy obstacles to the implementation of growth-friendly policies should not be underestimated.

## Securing a durable recovery

After the travails of the past 18 months, global economic activity is expanding vigorously. But, as this chapter has emphasised, the recovery has been very uneven, with its speed and extent varying substantially across countries and sectors. Even in the central scenario, countries' economic conditions could diverge further in the coming year, given differences in vaccination rates and policy stimulus. The more challenging scenarios described above would exacerbate these differences, with many EMEs being among the most vulnerable. The recovery's unevenness also heightens the near-term policy challenges, particularly in countries where tighter global financial conditions could go hand in hand with sluggish domestic recoveries.

In addition to meeting these near-term challenges, securing a durable recovery will require addressing the more enduring consequences of the pandemic. A sustainable expansion cannot rely on policy stimulus alone. Even if the sectoral composition of economic activity reverts to its pre-pandemic pattern as constraints

ease, changes such as the unprecedented adoption of remote work and expansion of online retailing are unlikely to be fully reversed. How these developments play out will have widespread implications, including for individual firms, asset classes (not least commercial property) and financial services, such as the digitisation of payments (Chapter III). In some sectors, pandemic-induced shifts in business practices could accelerate innovation and investment. Policymakers can encourage this process, with a leading example being incentives to adopt green energy, as included in several countries' fiscal recovery packages.

While presenting new opportunities, the pandemic-induced structural changes will not benefit everyone. As the economic landscape evolves, some firms will close and some workers will lose their jobs. This process could pose a number of social challenges, including by raising inequality. Many branches of economic policy have a role to play in addressing them, including monetary policy (Chapter II).

## Endnotes

- <sup>1</sup> See BIS, "A global sudden stop", *Annual Economic Report 2020*, June, Chapter I.
- <sup>2</sup> See BIS, "A monetary lifeline: central banks' crisis response", *Annual Economic Report 2020*, June, Chapter II.
- <sup>3</sup> For a review of central bank responses to the pandemic, see C Cantú, P Cavallino, F De Fiore and J Yetman, "A global database on central bank's monetary responses to Covid-19", *BIS Working Papers*, no 934, March 2021.
- <sup>4</sup> See R Banerjee, J Noss and J-M Vidal Pastor, "Liquidity to solvency: transition cancelled or postponed?", *BIS Bulletin*, no 40, March 2021.
- <sup>5</sup> See The Economist, "Relapse and recovery", 16 January 2021, [www.economist.com/finance-and-economics/2021/01/13/what-is-the-economic-impact-of-the-latest-round-of-lockdowns](http://www.economist.com/finance-and-economics/2021/01/13/what-is-the-economic-impact-of-the-latest-round-of-lockdowns).
- <sup>6</sup> See UN World Tourism Organization, *2020: A year in review*, [www.unwto.org/covid-19-and-tourism-2020](http://www.unwto.org/covid-19-and-tourism-2020).
- <sup>7</sup> See also Chapter II.
- <sup>8</sup> For a review of the recent literature on fiscal multipliers, see V Ramey, "Ten years after the financial crisis: what have we learned from the renaissance in fiscal research", *Journal of Economic Perspectives*, vol 33, Spring 2019; and D Wilson, "The Covid-19 fiscal multiplier: lessons from the Great Recession", *FRBSF Economic Letter*, no 2020-13, May 2020.
- <sup>9</sup> For a recent exploration of the anchoring of inflation expectations in AEs and EMEs, see R Moessner and E Takáts, "How well-anchored are long-term inflation expectations?", *BIS Working Papers*, no 869, June 2020.
- <sup>10</sup> For a discussion of the role of globalisation and other long-term structural factors in flattening the Phillips curve, see R Auer, C Borio and A Filardo, "The globalisation of inflation: the growing importance of global value chains", *BIS Working Papers*, no 602, January 2017; and K Forbes, "Has globalization changed the inflation process?", *BIS Working Papers*, no 791, July 2019.
- <sup>11</sup> See K Forbes, J Gagnon and C Collins, "Low inflation bends the Phillips curve", *Peterson Institute for International Economics Working Paper*, no 20-6, April 2019.
- <sup>12</sup> See S Aramonte and F Avalos, "What drove the recent increase in the US inflation break-even rate?", *BIS Quarterly Review*, March 2021, pp 12–13.
- <sup>13</sup> See Board of Governors of the Federal Reserve System, "December 2020 stress test results", December 2020; and Bank of Japan, *Financial System Report*, April 2021.
- <sup>14</sup> See S Claessens, N Coleman and M Donnelly, "'Low-for-long' interest rates and banks' interest margins and profitability: Cross-country evidence", *Journal of Financial Intermediation*, vol 35, July 2018.
- <sup>15</sup> See S Kalemli-Özcan, L Laeven and D Moreno, "Debt overhang, rollover risk, and corporate investment: evidence from the European crisis", *NBER Working Papers*, no 24555, August 2020.
- <sup>16</sup> See BIS, "A global sudden stop", *Annual Economic Report 2020*, June, Chapter I.
- <sup>17</sup> See Financial Stability Board, "Covid-19 support measures: Extending, amending and ending", April 2021, <https://www.fsb.org/wp-content/uploads/P060421-2.pdf>.
- <sup>18</sup> See C Borio, B Vale and G von Peter, "Resolving the financial crisis: are we heeding the lessons from the Nordics?", *BIS Working Papers*, no 311, June 2010.
- <sup>19</sup> See Swiss National Bank, "Monetary policy assessment of 25 March 2021", March 2021; T Macklem, "Monetary Policy Report press conference opening statement", April 2021; and Reserve Bank of Australia, "Statement by Philip Lowe, Governor: Monetary Policy Decision", April 2021.

- <sup>20</sup> See G Debelle, "Monetary policy during COVID", Shann Memorial Lecture, May 2021.
- <sup>21</sup> See D Araujo, B Cohen and P Pogliani, "Bank loan loss provisioning during the Covid crisis", *BIS Quarterly Review*, March 2021, pp 9–10.
- <sup>22</sup> See C Borio, M Farag and N Tarashev, "Post-crisis international financial regulatory reforms: a primer", *BIS Working Papers*, no 859, April 2020.
- <sup>23</sup> See Financial Stability Board, *Holistic Review of the March Market Turmoil*, November 2020, [www.fsb.org/wp-content/uploads/P171120-2.pdf](http://www.fsb.org/wp-content/uploads/P171120-2.pdf).
- <sup>24</sup> See Financial Stability Board, *FSB Work Programme for 2021*, January 2021, [www.fsb.org/wp-content/uploads/P200121.pdf](http://www.fsb.org/wp-content/uploads/P200121.pdf).
- <sup>25</sup> See the updates of S Arslanalp and T Tsuda, "Tracking global demand for advanced economy sovereign debt", *IMF Economic Review*, vol 62, October 2014, [www.imf.org/~media/Websites/IMF/imported-datasets/external/pubs/ft/wp/2012/Data/\\_wp12284.ashx](http://www.imf.org/~media/Websites/IMF/imported-datasets/external/pubs/ft/wp/2012/Data/_wp12284.ashx).
- <sup>26</sup> For more discussion of these issues, see C Borio and P Disyatat, "Monetary and fiscal policy: privileged powers, entwined responsibilities", *SUERF Policy Note*, no 238, May 2021.