FitchRatings

Coronavirus GDP Impact to Persist in Medium Term

Supply-side Scarring

Highlights

- Coronavirus recession will scar economies for years
- Developed economies GDP potential growth projections cut by around 0.6pp a year
- Projected level of GDP in 2025 around 3pp-4pp below pre-virus forecasts
- Higher long-term unemployment, lower investment main supply-side scarring mechanisms
- Less scope for strong "catch-up" growth in medium term
- Stylised GDP projections imply output gaps are closed by 2025; gap eliminated due partly to reduced supply potential
- Revisions to medium-term GDP path much smaller than those after global financial crisis
- Fiscal policy support, absence of large macro-financial imbalances should help demand recover more quickly than after GFC

Coronavirus Shock

The economic outlook for advanced economies over the next five years is highly uncertain in light of the unknown path of the coronavirus outbreak. Repeated surges in new infection rates, which threaten to overwhelm health systems and prompt renewed nationwide lockdown responses, could cause a sluggish recovery as economic re-opening is delayed. On the other hand, medical breakthroughs, which see widespread dissemination of vaccines or anti-viral treatments, could prompt a discrete easing of social distancing restrictions and behaviours, which in turn, result in a rapid normalisation of economic activity.

These outcomes are very hard to predict; a reasonable base-case working assumption for the purpose of economic analysis is that the health crisis gradually eases over the medium term – with renewed nationwide lockdowns avoided and containment sought through more targeted responses – as we learn to live with the new health situation. However, even on this basis there are big questions about how quickly GDP will recover from the shock and how long-lasting the impact on income and unemployment will be over the medium-term. In this report we attempt to answer these questions using our existing framework for medium-term GDP projections based on an analysis of supply-side productive potential. The rapidly evolving situation is likely to require more frequent updates of this medium-term analysis.

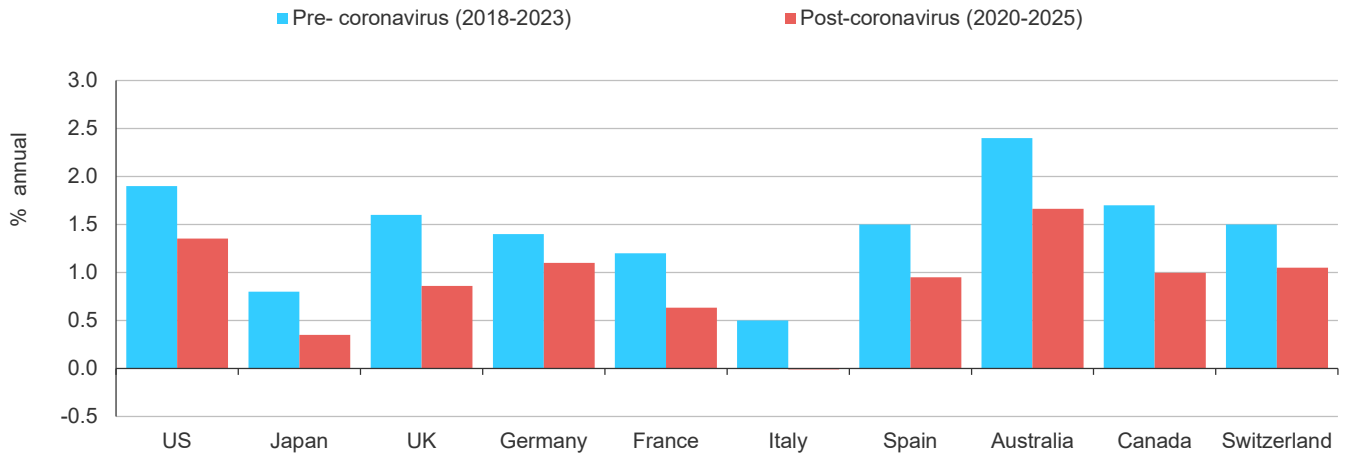
Our judgement is that the coronavirus shock will have a lasting impact on GDP, well beyond the current two-and-a-half year horizon of Fitch Ratings' **Global Economic Outlook** (GEO) forecasts. Our base-case projections show GDP in 2025 remaining around 3%-4% below the level implied by the pre-crisis trend in the 10 developed economies covered in the GEO. This reflects our expectation that there will be supply-side damage from the shock from higher long-term unemployment and weaker investment.

The coronavirus shock is unique in nature and unprecedented in scale. The fact that it was not preceded or triggered by major macroeconomic imbalances points to a swifter-than-usual recovery. On the other hand, its scale suggests lasting effects on the level of activity – historical experience shows that it has taken an average of four years for GDP to return to pre-crisis levels after an annual drop of GDP of more than 5% in developed countries. The latest GEO forecasts a 6.3% fall in developed-country GDP in 2020.

The unprecedented degree of macro policy stimulus means that we would expect a quicker return to pre-virus GDP levels compared with the global financial crisis. We envisage GDP returning to late-2019 levels by mid-2022 in the US and by late-2022 in the eurozone on our base-case assumption that repeated surges in new infections – and corresponding renewed national lockdown restrictions – can be avoided. The return to pre-crisis GDP after the global financial crisis took three-and-a half years in the US, five years in the UK, and seven years in the eurozone. Fiscal easing of more than 9% of GDP in developed countries dwarfs that which followed the global financial crisis.

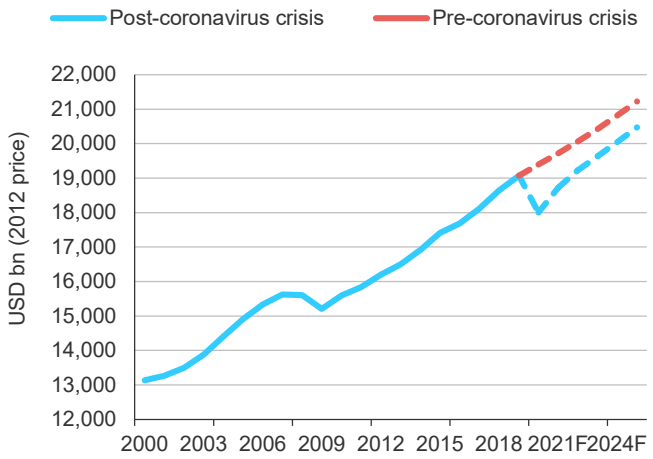
Nevertheless, we still expect GDP by the middle of this decade to be well below the levels implied by the pre-virus trend. This reflects our assessment that there will be significant damage to supply-side productive potential (ie the ability of the economy to produce goods and services) over the next five years as a result of this shock. We have lowered our five-year projections of annual potential GDP growth by around 0.6pp on average relative to **earlier estimates** for the US, the eurozone and the UK. These revisions translate to cumulative losses to potential GDP averaging around 3.2pp by 2025.

Potential GDP Growth Projections Five Years Ahead



Source: Fitch Ratings' estimates

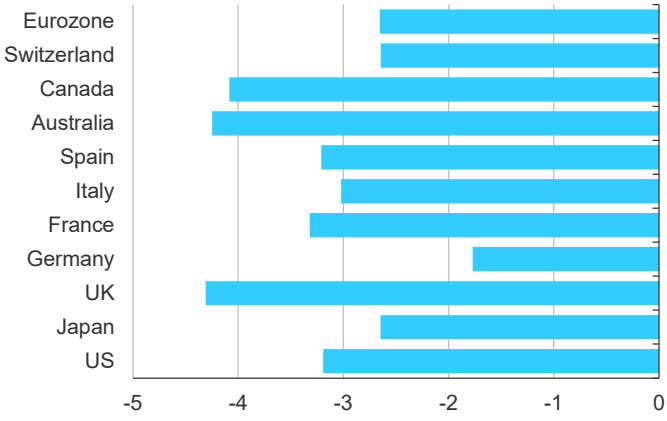
US: Real GDP Path



Source: Fitch Ratings'estimates, Haver Analytics

Potential GDP Level Shortfall in 2025

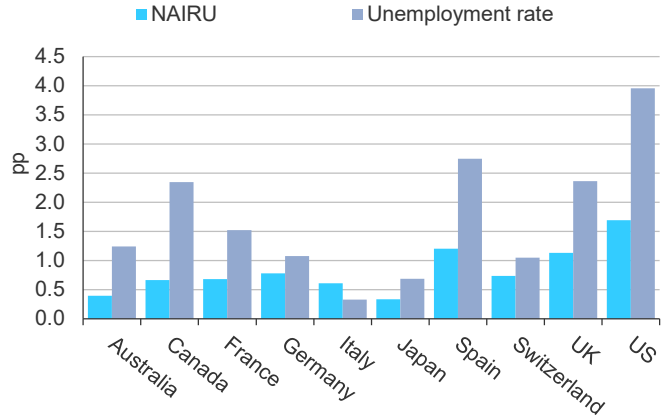
%, vs previous



Source: Fitch Ratings' estimates

Forecast Change in Short-Term NAIRU and Unemployment Rate

2020-2022 average minus 2017-2019 average



Source: Fitch Ratings' estimates, OECD, Haver Analytics

The main reason for these downward revisions to potential growth stems from slower expected trend labour inputs growth. We expect to see increases in long-term unemployment following the huge rupture to the labour market due to the pandemic. In countries in which the rise in unemployment is limited partly due to job subsidy schemes, labour input will still be affected through a reduction in working hours. The rise in non-inflationary unemployment rates (NAIRU) and the reduction in working hours would subtract on average 0.3pp a year from potential growth relative to our earlier estimates over the five-year period.

Another factor is the impact of the deep falls in investment, which will slow the growth rate of the capital stock. Lower investment by itself would subtract – on average – another 0.3pp a year from potential growth. We also expect net immigration flows to slow in the developed economies.

The impact of the crisis on "total factor productivity" – ie the efficiency with which labour and capital inputs are combined – is hard to gauge and we have only revised our estimates down marginally, but there could be losses as economies are forced to reallocate resources after the pandemic.

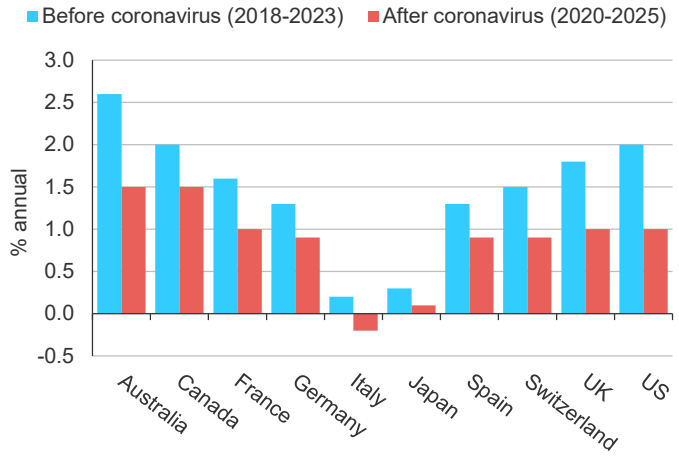
The implication of these cuts to projections of potential GDP is that actual economic growth rates for 2020-2025 are, on average, only likely to be broadly in line with the average rates of the past 5-10 years. A lower level of potential GDP means that the output shortfall relative to potential at the end of 2021 – the output gap – will be smaller than otherwise. This in turn implies less scope for rapid, above-potential, GDP growth in the medium term as the output gap is closed. To illustrate for the US: growth is more likely to average around 2% a year in 2023-2025 rather than the annual rate of 3%, which would be consistent with no loss of potential GDP and a closure of the output gap by 2025. In other words, the level of GDP is likely to ratchet downwards relative to our previous medium-term projections.

In this report we set out our assessment of the medium-term outlook to 2025 for the largest developed economies (DMs) in the aftermath of the pandemic. We put the current shock into historical context before discussing the impact of unprecedented policy responses on the recovery. Our main focus is the possibility of lasting scars to the supply-side potential of the economy with updates to our projections of potential GDP. We also discuss the path back to the 'new normal' after 2022.

History of Large GDP Shocks

Large collapses in output are rare in economic history, at least in DMs. The coronavirus-driven recession ranks easily in the largest economic dislocation events of the past century or so. What is staggering is the depth of the contraction and the speed at which output collapsed. For instance, we estimate that US GDP is likely to have fallen by 20%-25% between February 2020 and April 2020, the same fall as between 1929 and 1932 during the Great Depression.

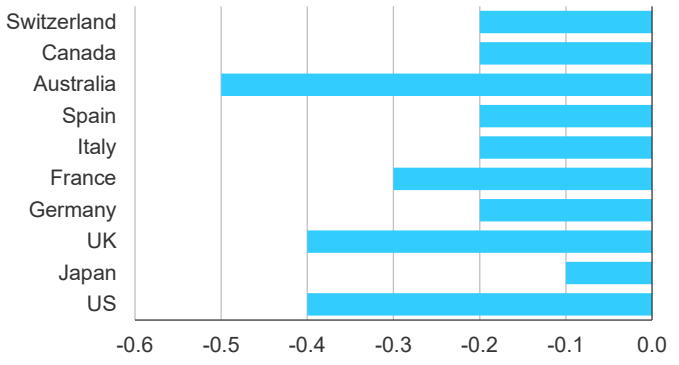
Projection of Capital Stock Growth



Source: Fitch Ratings

Potential GDP Growth Shorfall Due to Lower Investment

% p.a., vs previous



Source: Fitch Ratings' estimates

An analysis of data gathered by the World Bank reveals that since 1960, across DMs, there have been only 13 instances in which an economy experienced an annual decline in GDP of at least 5%, only three cases in which output fell by at least 7% in one year (Finland in 2009, and Greece in 2011 and 2012), and none in which output dropped by more than 10%. On a longer timeframe, large output losses (above 10%) mainly occurred during world wars and the Great Depression.

Looking beyond the short-term dislocation of the economy, there is much evidence that a large, short-term collapse in output tends to leave lasting scars on the economy. The recovery following the recession tends to be sluggish: typically, it usually takes years before economic output reaches its pre-crisis level, though there are large differences across countries and periods.

According to calculations by the The Economist, using long-dated time series compiled by the University of Groningen in the Netherlands, among the rich economies which experienced annual drops in GDP of more than 5% since 1960, output took an average of four years to return to its pre-crisis level. For instance, in Europe, GDP in Italy and especially Greece had not returned to its pre-global financial crisis level in 2019 (Greece is still a long way below).

Lessons from the Global Financial Crisis

The persistence of large shocks to GDP is borne out by the global financial crisis – the most recent pre-pandemic large shock. Many economists and policymakers were disappointed by the persistently slow pace of recovery, which ultimately entailed sharp cuts in estimates of potential growth, as growth outturns were stubbornly weaker than forecast in the aftermath of 2010-2011.

With hindsight, potential growth estimates from before the global financial crisis have been broadly and heavily reduced. However, this was partly because those prior estimates took insufficient account of imbalances in the form of excess credit from 2003 to 2007. Those imbalances meant that actual growth was not sustainable over that period.

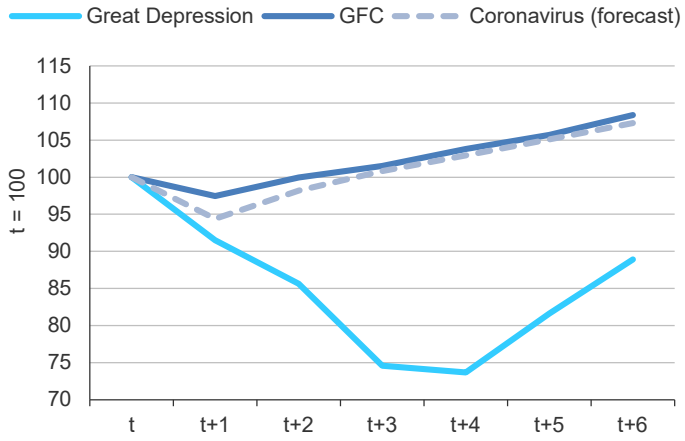
Potential GDP Growth Projections

		Post-COVID		
%, annual average	Pre-COVID	2020-22	2023-25	Whole period
US	1.9	0.9	1.8	1.4
Japan	0.8	0.1	0.6	0.4
UK	1.6	0.4	1.3	0.9
Germany	1.4	0.8	1.4	1.1
France	1.2	0.3	0.9	0.6
Italy	0.5	-0.4	0.3	0.0
Spain	1.5	0.5	1.4	1.0
Australia	2.4	1.4	2.0	1.7
Canada	1.7	0.6	1.4	1.0
Switzerland	1.5	0.8	1.3	1.0

Source: Fitch Ratings

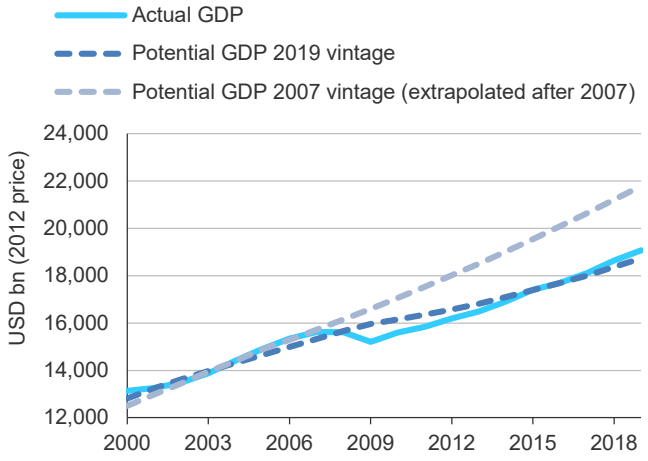
US GDP Path in Wake of Large Recessions

t = year before recession



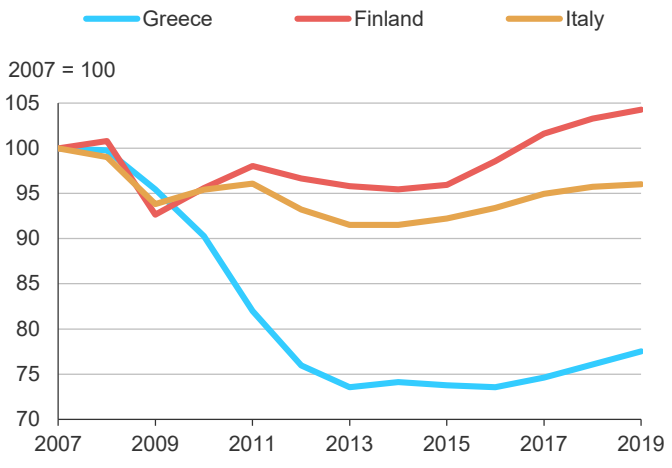
Source: Fitch Ratings, Haver Analytics

US GDP vs Potential GDP - IMF Estimates



Source: Fitch Ratings, Haver Analytics, IMF

GDP Path in Wake of Global Financial Crisis



Source: Fitch Ratings, Haver Analytics

This risk of overestimating the pre-recession trend does not seem so pertinent to the coronavirus-related recession, which was not characterised by the build-up of large macro-financial imbalances. Economists and policymakers increasingly have turned to using alternative measures of potential growth that better capture the underlying, sustainable trend of the economy, i.e. the trend that does not generate or widen macroeconomic imbalances. Our latest historical estimates of potential growth and output gaps are based on such an approach.

Nevertheless, the depth of the recession that followed the financial crisis meant that it generated scarring, permanent damage to growth in subsequent years. Scarring (or hysteresis) can manifest itself through various channels: rising long-term unemployment, lower labour participation, falling investment and underlying productivity growth. The legacy of higher debt burdens leaves many corporates more risk-averse and can lead them to prioritise balance-sheet repairs over hiring and productivity-enhancing capital expenditure. The dislocation of labour markets leaves millions of workers redundant, which can lead to skills erosion over time. It is these latter scarring forces that seem most relevant to the medium-term outlook today rather than a reassessment of the sustainability of pre-virus trends.

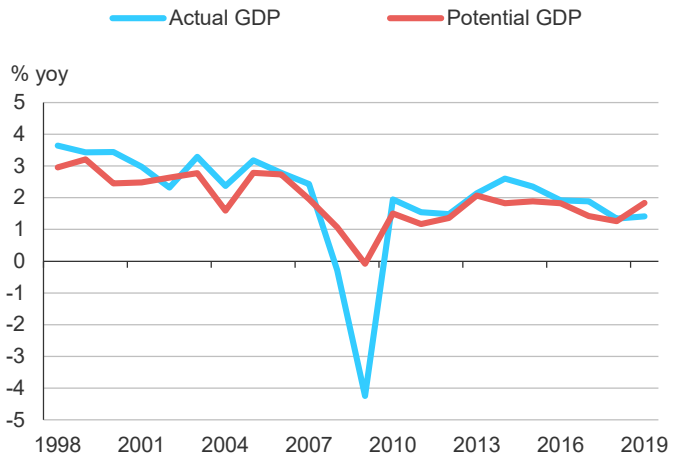
We can get some gauge of the degree of scarring post GFC by examining the path of potential GDP over 2009 to 2012 using our current potential GDP estimates which are corrected for financial imbalances. All countries experienced declines in potential growth in the aftermath of the financial crisis, suggesting the presence of scarring effects, notwithstanding some impact from deteriorating demographics after 2008.

A Different Type of Recession

Every recession has its own characteristics, but the coronavirus-induced shock stands out because it lacks any of the common threads that have linked previous downturns. Post-war recession episodes in advanced economies typically were preceded and/or triggered by major macroeconomic and/or financial imbalances or sharp jumps in global oil prices. Macro-financial imbalances were manifest in high inflation in the 1970s and 1980s; excess credit growth and asset price inflation in the late 1980s and mid-2000s, and in 'stop-go' macro policies and inventory cycles in the 1950s and 1960s. A recurring theme is the overestimation of potential growth during the boom years of the cycle, culminating in downward adjustments to these estimates as the ensuing recession or financial crisis unfolds.

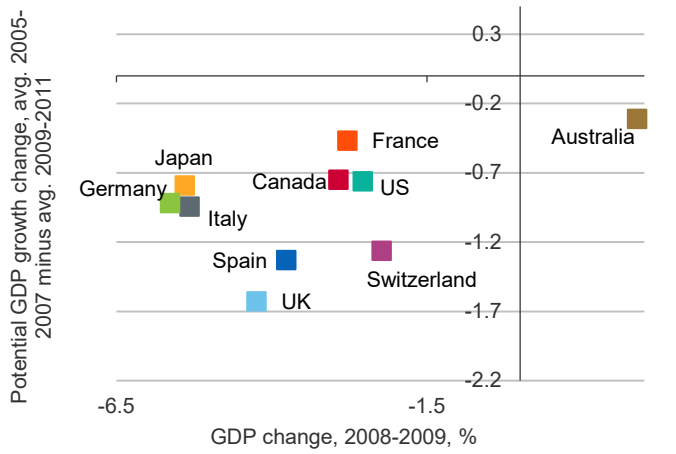
It is hard to argue that there were serious macro imbalances across the advanced economies on the eve of the current health crisis. While there was plenty of evidence of 'late-cycle' behaviour in financial markets – with high equity valuations and strong appetite for riskier fixed-income securities – there was little evidence of a sharp run-up in private-sector indebtedness, an overly rapid expansion in bank balance sheets, excessive residential investment or high and accelerating inflation. External

UK: Actual and Potential GDP Growth



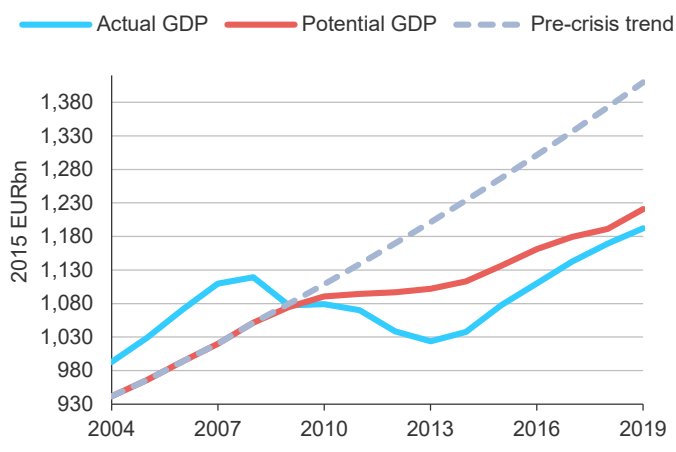
Source: Fitch Ratings' estimates, Haver Analytics

GDP Loss During Financial Crisis, Potential Growth Change in Subsequent Years



Source: Fitch Ratings, Haver Analytics

Spain: Actual and Potential GDP Level



Source: Fitch Ratings' estimate, Haver Analytics

imbalances were also modest by historical standards, including within the eurozone. Corporate indebtedness was starting to become a concern in the US but seemed to be driven more by financial engineering in a low-interest-rate environment than a need to fund a rapid surge in business investment. Our bespoke **output gap estimates** showed advanced economies operating only modestly above potential on average in 2019.

Financial cycle indicators, such as the private non-financial sector debt service ratio had not peaked before the pandemic, in contrast to previous finance-induced recessions episodes.

All else equal, the lack of imbalances and a stronger banking system should mean that the advanced economies can rebound more quickly once the health crisis passes. Retrenchments in bank lending and external adjustments were key challenges to the post-global financial crisis recovery but seem much less likely to constrain growth now, while inflation remains well below central bank targets. In addition, the large imbalances that had built up in the eurozone prior to 2008 are conspicuous by their absence today, for instance with Spain running a large current account surplus in 2019 – after several years of domestic and external deleveraging – and little evidence of a real-estate bubble.

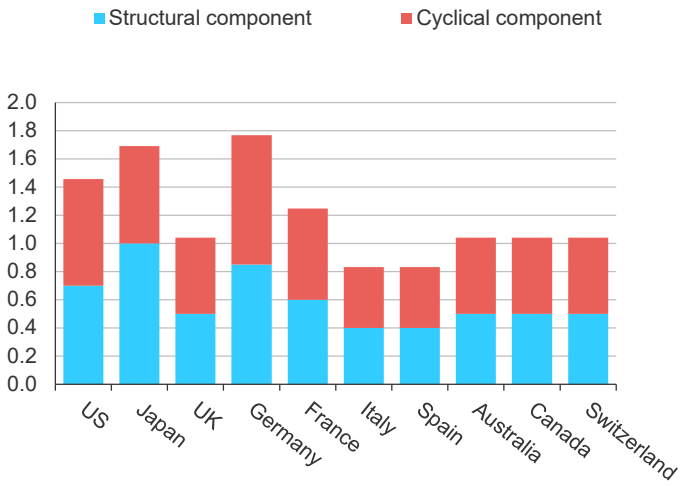
Unprecedented Policy Easing

The rapid and extremely aggressive easing of macroeconomic policies in response to the pandemics should also speed the recovery. We estimate that the advanced economies already have announced direct fiscal easing measures of 9.4% of GDP with a strong possibility of further stimulus. This has been accompanied by the extension of huge sovereign credit guarantees – of up to 20%-25% of GDP in Europe and Japan – and the **announcement of an array** of new central bank credit facilities for the private sector. Moreover, central banks have massively expanded quantitative easing (QE) asset purchases. We now expect around USD6 trillion of global QE asset purchases in 2020, equivalent to half of the entire cumulative total of 2009-2018.

The overall effectiveness of this easing may be uncertain, but its scale is so large that it will undoubtedly have a significant impact. The recent rapid acceleration in credit to the corporate sector in the US and Europe – a complete contrast to the pro-cyclical pattern of tighter credit conditions and slower lending typically seen in recessions – is evidence of policy gaining traction. Moreover, our analysis suggests that **fiscal multipliers should be high** amidst a deep recession, with policy interest rates constrained at the zero lower bound. Direct fiscal easing announcements to date in the advanced economies already sum to more than double the 3%-4% of GDP in the immediate aftermath of the financial crisis.

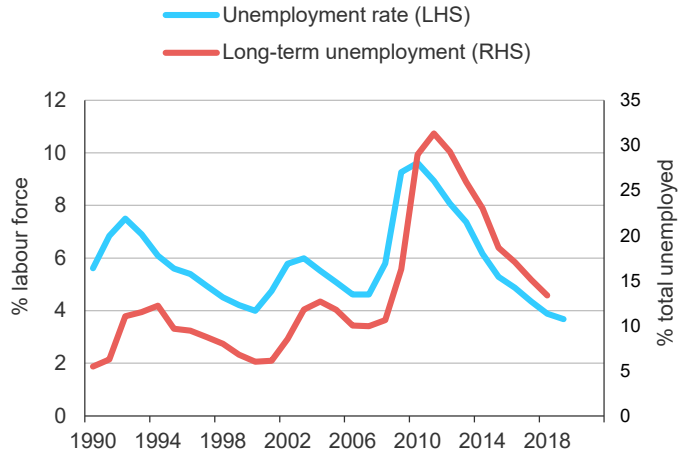
But while the lack of imbalances and extent of policy easing would point to swift recovery, our near-term GEO forecasts show a more muted rebound. This reflects a judgement that the crisis will take a heavy toll on the outlook for private-sector spending over the next 18 months. Companies are likely to cut back sharply on capex after

2020 First-Year Fiscal Multipliers



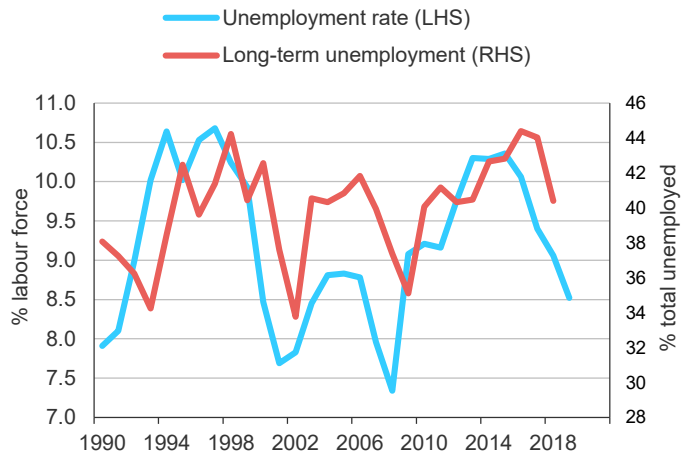
Source: Fitch Ratings' estimates, Haver Analytics, OECD

US: Unemployment



Source: Fitch Ratings, OECD, Haver Analytics

France: Unemployment



Source: Fitch Ratings, OECD, Haver Analytics

experiencing such a severe shock to revenue, and households are likely to be very cautious about spending. The rupture in the jobs market will result in high employment uncertainty and an increase in the household saving ratio, a trend that is already evident. Moreover, the scientific community has signaled that we are unlikely to see a clear and decisive end to the health crisis in the near term, even if a second-wave of the virus is avoided. This means that social distancing restrictions and behaviour patterns of some form may persist. This will weigh on consumer and business spending.

The judgement embedded in our latest GEO forecast is that these countervailing forces will result in a modest pace of recovery over the next 18 months under which US GDP will remain about 1pp below its 4Q19 level by end-2021 and European GDP 3pp below.

Supply-Side Scarring

An extension of the forecast beyond the GEO horizon requires greater consideration of supply-side influences. Output in the medium term will be determined by productive capacity, and demand and supply will align. We have thus updated our potential growth projections for the 10 DMs, factoring in the effects of the pandemic on the main components of trend supply-side GDP growth. The country section at the end of this report embeds our potential growth projections (with the breakdowns of components) for each country. The projections are shown in annual average terms. We identify the periods 2020-2022 (shock) and 2023-2025 (recovery) as we think it makes sense to consider that the crisis will leave larger scars on short-term, rather than longer-term, potential growth. We judge that from 2025 potential growth would revert to something close to our previous estimates.

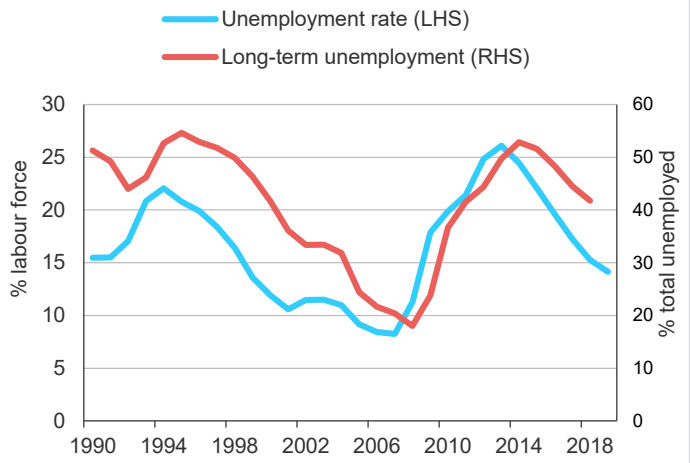
Potential GDP can be separated into trend labour input and trend labour productivity. Trend labour input can be further decomposed into trend average working hours, trend labour participation rate, the non-accelerating inflation rate of unemployment NAIRU (or the structural unemployment rate) and the working-age population (15 to 74 years old). Trend labour productivity can be decomposed into capital deepening (capital per worker) and trend total factor productivity (TFP), which measures the efficiency with which the economy combines the factor inputs to produce output.

Rise in Long-Term Unemployment

The short-term labour market shakeout was dramatic as millions of workers were forced into lockdown and were unable to work. As the economies have gradually re-opened, many people are returning to work.

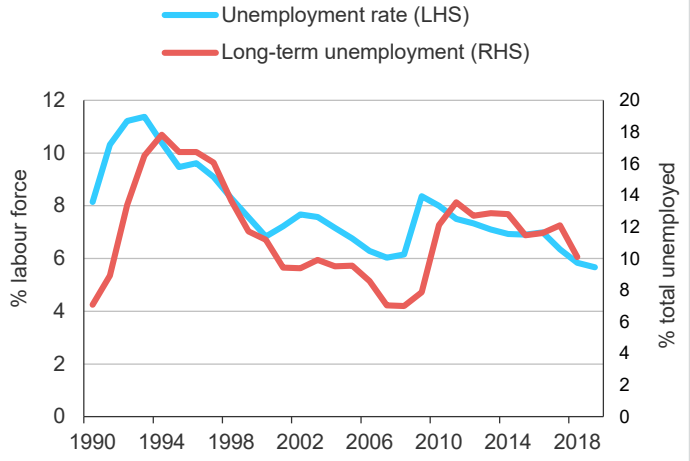
However, we think that the crisis will leave a persistently higher unemployment rate, or NAIRU. Indeed, social distancing will probably remain for some time even after the heath crisis subsides, meaning that part of the labour force will remain unemployed (typically in the recreation and hospitality industry). Over time, as the skills of these people erode, they become less likely to find a job. Many pandemic-linked layoffs will become permanent. Lingering corporate caution also means that businesses are likely to prioritise balance-sheet repairs over hiring.

Spain: Unemployment



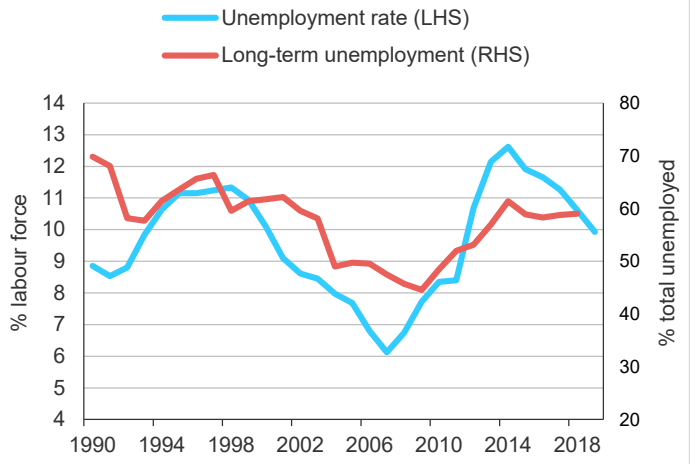
Source: Fitch Ratings, OECD, Haver Analytics

Canada: Unemployment



Source: Fitch Ratings, OECD, Haver Analytics

Italy: Unemployment



Source: Fitch Ratings, OECD, Haver Analytics

Part of the workforce will migrate to different industries, which can be bolstered by the crisis (typically, digital services), but due to skill mismatches this process is likely to take some time.

A way to assess how far the NAIRU could rise in the next two or three years is to look at how long-term unemployment reacts to spikes in overall unemployment. Long-term unemployment, on the most widely followed international definition, refers to people who have been unemployed for 12 months or more, in proportion to the total unemployed.

Long-term unemployment rose sharply relative to the rise in the headline unemployment rate in the US and the UK in the wake of the global financial crisis. In Spain, the rise in long-term unemployment was substantial but this echoed a much more adverse deterioration in the labour market than in the US and the UK.

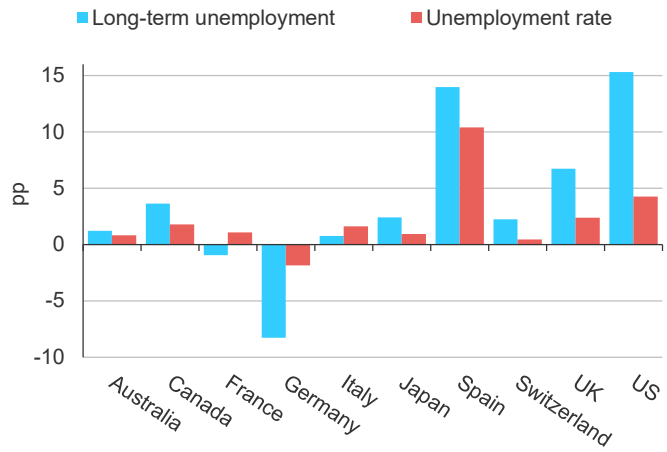
Conversely, long-term unemployment appears much steadier in other European countries and Australia, hinting at less hysteresis effects on the labour market. However, the level of long-term unemployment is much higher and stickier in recovery phases. The rise in NAIRU probably will be higher in the US, Spain and the UK in the next two or three years, but it should subsequently decline more rapidly thereafter.

We have produced forecasts for NAIRU changes for 2020-2022 (in annual average terms). To do this, we calculated our forecast change in the unemployment rate during the pandemic (average of 2020-2022) relative to the pre-crisis period (average of 2017-2019) and used the global financial crisis experience to calibrate the expected rise in the share of long-term unemployment in total unemployment. For the US, for instance, we expect the unemployment rate to rise by 4pp. Based on this, US long-term unemployment as a share of the total would be expected to rise by 14.2pp in 2020-2022 to 27.5%, and would amount to 2.2% of the labour force. Given that the long-term unemployed were only 0.5pp of the labour force in 2019, this would imply an increase in the NAIRU of 1.7pp (i.e. 2.2 minus 0.5). We have used this approach for all countries except Spain where the rise in the share of long-term unemployed after the global financial crisis was exacerbated by prior imbalances in the economy and the bubble in the (labour-intensive) construction and real-estate sector.

The results entail considerable uncertainties. They are based on simple rules of thumb, and also assume a steady labour force, which is an over-simplistic assumption. These calculations nonetheless generate plausible estimates of the rise in the NAIRU, at least for the US. For instance an IMF study found that the US NAIRU increased by a very similar amount in the wake of the financial crisis, between 1.5pp and 1.75pp (see references).

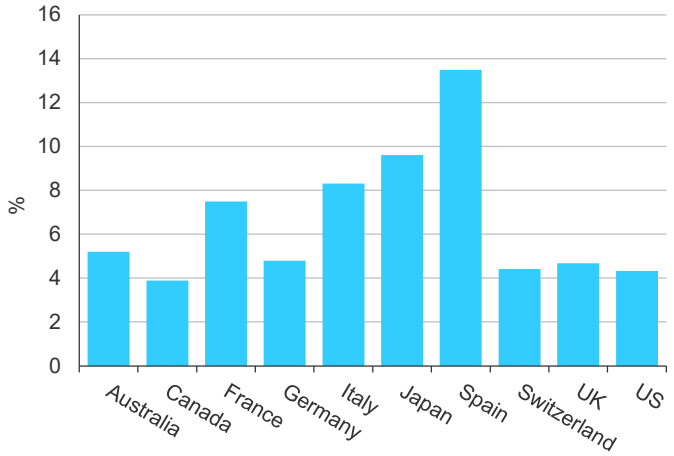
Our forecast rise in the short-term NAIRU (along with the headline unemployment rate) for 2020-2022 are depicted in the chart (at the beginning of the report) for the Fitch10 countries ("Forecast change in short-term NAIRU and unemployment rate"). The biggest increases are seen in the US, followed by the UK and Spain. In the UK, we expect the NAIRU to increase by around 1pp

Change in Unemployment in Wake of GFC
2009-2011 average minus 2006-2008 average



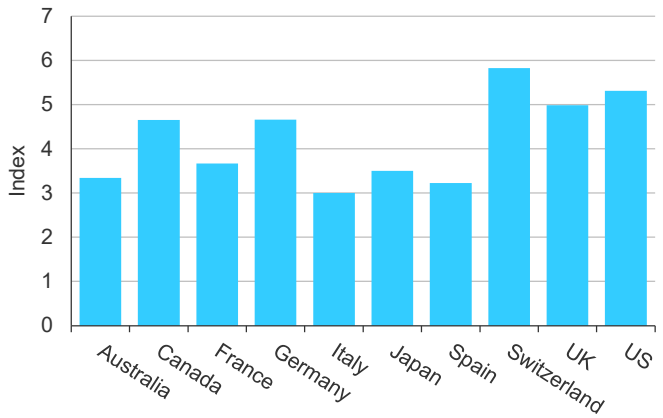
Source: Fitch Ratings, OECD, Haver Analytics

Tourism Share in Total Employment



Source: Fitch Ratings, OECD

WEF Labour Market Regulation Index
Higher index means less regulation and more recruitment flexibility



Source: Fitch Ratings, WEF

from before the crisis. At the other end, Australia and Japan would see a much milder NAIRU increase, at only 0.3-0.4pp.

In our potential growth projections, we assume that the rise in the NAIRU (corresponding to the line "Employment % labour force") is gradual, spread evenly over 2020, 2021 and 2022. It can take a few years before people who are out of work become long-term unemployed. In this category, people's skills have eroded and the likelihood of being re-allocated to other sectors has been severely diminished.

In the years further out, the NAIRU should decrease, or at least stop increasing – albeit at a slow pace and unevenly across countries. The economy is fluid and some laid-off workers (eg in the hospitality industry) may move to other sectors that are growing (eg digital services), although skill mismatches would mitigate the speed of conversion.

Drop in Working Hours

The rise in average unemployment rates (relative to pre-pandemic) that we project over the next two years does not fully reflect the extent of the labour market shakeout. Advanced economies – in particular those in Europe, Japan and Australia – have rolled-out extensive job furlough schemes, under which governments pay workers a sizeable portion of wages to work reduced hours or none at all.

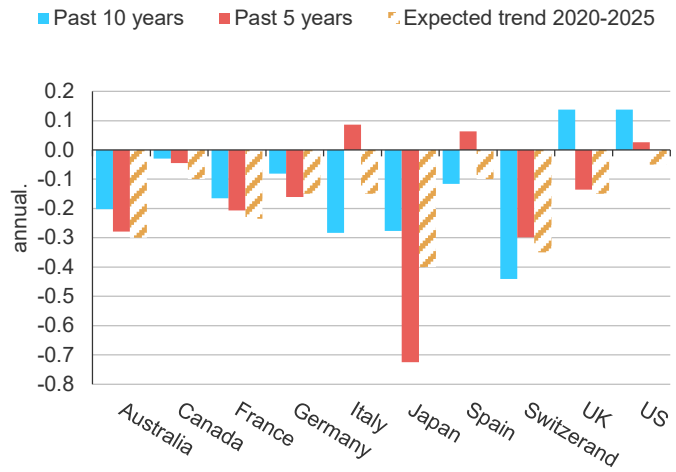
In the short term, these schemes have obvious benefits. First, they greatly cushion the hit to household income. Second, they keep intact the relationships between workers and employers, which could help speed up the recovery as businesses pick up.

These schemes are scheduled to be phased out in the coming months. However, we would expect that some form of support to furloughed workers would be extended at least through next year (in most countries, current support programs have already been extended beyond their initial planned termination date). Not least because a proportion of workers enrolled in job-subsidy schemes are employed in industries that will continue to struggle (travel, tourism, retail, hospitality) in the next few years. This means that part of the labour force will still be counted as employed, but would work a limited number of hours.

These considerations support our view that the pandemic will accelerate the secular trend towards fewer working hours, already observed in most DMs, particularly in Europe. Preserving some form of job-subsidy schemes is also likely to delay a necessary coronavirus-driven change in the structure of the economy.

In this respect, countries with a high share of jobs in the tourism industry are likely to struggle to limit the fall in working hours in the medium term. Many jobs in this sector – one of the most affected – are low-skilled, which would complicate the medium-term re-allocation of the workforce.

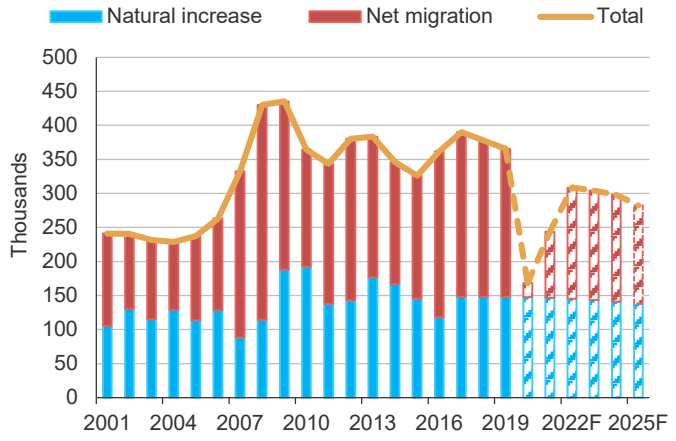
Working Hours: Past Performance and Forecast



Source: Fitch Ratings, Haver Analytics, OECD

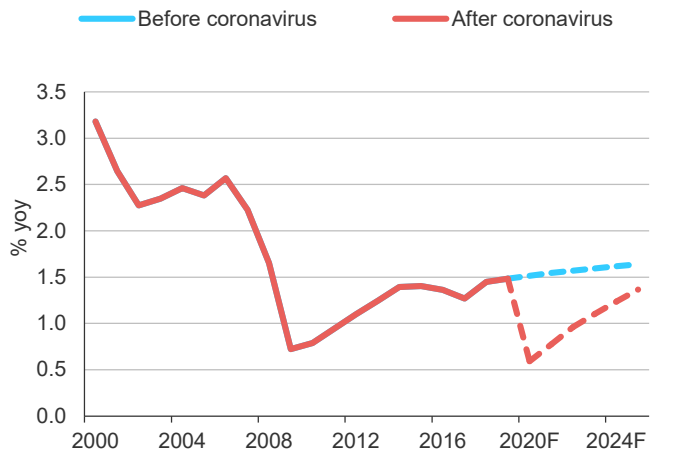
Australia: Population Growth Breakdown

Flows of new persons



Source: Fitch Ratings, Census, Haver Analytics

US: Projection of Capital Stock



Source: Fitch Ratings, Haver Analytics

Migration at a Standstill

Population growth has been an important driver of growth for countries, such as Australia and Canada with relatively high net overseas immigration.

The closure of borders or restrictions on travel, probably for much of 2020, means that movements of people will be curtailed. For instance, the Australian government expects net overseas migration to fall by about 30% in 2019-2020 and by 85% in 2020-2021.

Therefore, net natural increase will drive population growth this year and probably for most of 2021. In Australia, that would mean a huge 0.7pp reduction of working-age population growth (from +1.4% to +0.7%) in 2020.

We relied mainly on UN forecasts to draw our population projections. However, we assumed that the level of net migration is reduced by 90% in 2020, 50% in 2021, and 10% in 2022 relative to the pre-coronavirus UN baseline. The sharp rise in unemployment could mean that immigration policies will come under close scrutiny.

Lower Investment

The pandemic is set to weigh heavily on capital expenditure, feeding directly into a slower pace of capital deepening. For most Fitch10 countries we project investment to plummet by between 5% and 12% in 2020.

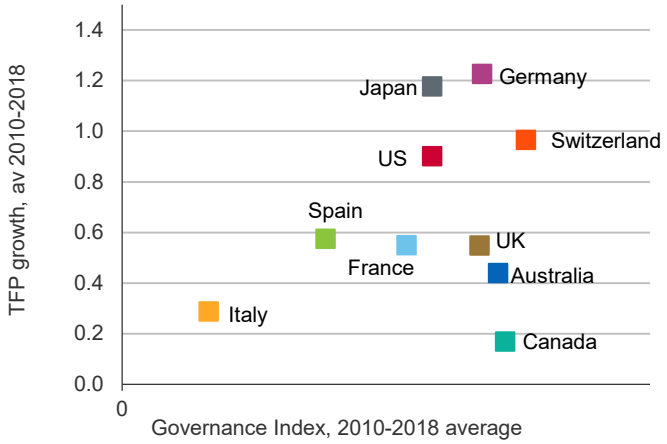
In the longer term, capex growth should recover, but the damage done to capital accumulation in 2020 will take a toll on potential growth. Uncertainty over demand and the desire to expand cash buffers will hold back investment, though this could be partially offset by more investment in touchless technologies and robotics to comply with social distancing rules, and in public infrastructure. Changes in work and shopping patterns related to social distancing could also hold back investment in commercial real estate, which accounts for a sizeable share of private-sector investment.

Across the Fitch10 countries, all else being equal, slower capital growth will probably lower potential growth between 0.2pp and 0.5pp on average a year between 2020 and 2025 compared to our pre-crisis scenario published in 2018 (see chart "Potential GDP Growth Shortfall due Solely to Lower Investment"). In Australia, the much slower capital stock growth outlook that we are penciling in partly reflects a weak investment backdrop that started pre-pandemic. It is likely that the crisis could see some premature scrapping of the existing capital stock as 'stranded' assets in, for example the travel or hospitality sectors, become unviable. In our framework, this would be reflected in a rising depreciation rate and slower growth in the net capital stock. But quantifying these effects is extremely difficult and has not been reflected in our estimates.

TFP: Ambiguous Impact

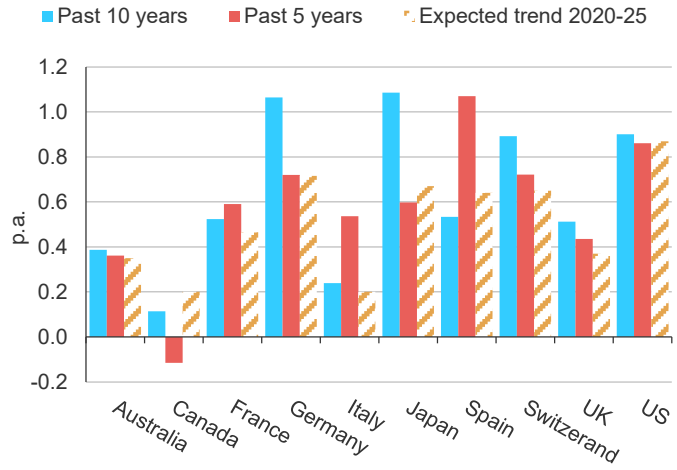
It is hard to draw trend TFP projections with much certainty. There are many ways in which the coronavirus may reduce or increase the efficiency with which the economy utilises its inputs.

TFP Performance and Governance Quality
SImple average of four indeces



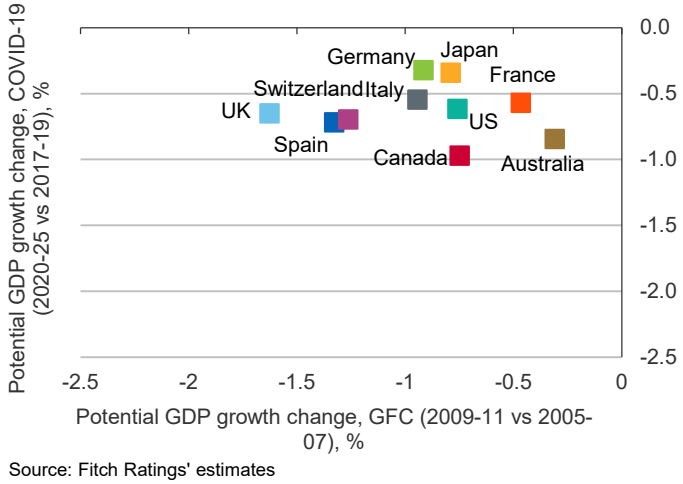
Source: Fitch Ratings, World Bank, Haver Analytics

TFP: Past Performance and Forecast



Source: Fitch Ratings' estimates

Potential GDP Growth Losses: after GFC vs after COVID-19



Source: Fitch Ratings' estimates

Social distancing could weigh on innovation. Being able to socially interact has been an essential way to foster creation, new ideas and technology. The newly graduated and newly hired would lack the benefit of social interaction and on-the-job training if they are compelled to work remotely more often. Also, in sectors such as manufacturing, social distancing would mean slowing production lines, which will affect efficiency.

Another factor which would undermine TFP growth is a renewed rise in the wake of the crisis of so-called zombie firms, ie companies that are unable to cover their debt-servicing costs from profits in the long term. Research shows that these companies are a drag on productivity growth. They can also hinder the reallocation of labour and skills. Even before the pandemic, a decade of low interest rates helped to fuel a rise in the number of zombie firms. Deutsche Bank Securities estimates that the share of zombie companies in the US alone has roughly tripled since the global financial crisis to more than 18%. The coronavirus crisis unleashed unprecedented monetary and fiscal support to the corporate sector. Together these polices, while preventing mass bankruptcies, may well keep otherwise non-solvent firms afloat for several years.

Set against these factors, there are those that point to an improvement in TFP, including a reduction in commuting and business travel. Also, it is possible that the coronavirus ushers in a new wave of investment in digital technology. The need to reconfigure workplaces to incorporate social distancing could require new investments, including in robotics and AI. And there is the potential to place greater emphasis on research and development, particularly in the realm of public health.

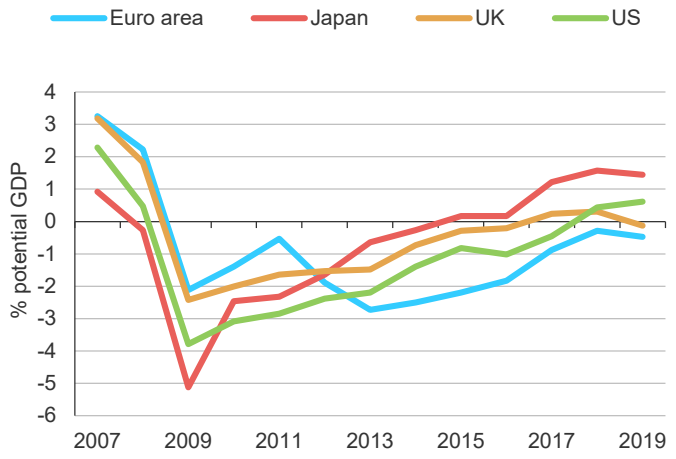
Overall, the impact on efficiency could go either way. Policymakers have a crucial role in determining the path for TFP, such as by encouraging spending in new technologies and job training for workers who have lost skills. We made the simplistic assumption that trend TFP growth will remain muted over the next five years, though we (generally) did not factor in a much worse TFP performance than recent historical averages. We would expect countries with more competitive and flexible labour and product markets to engineer a more rapid re-allocation of resources across sectors, and therefore to suffer less long-lasting TFP damage.

Updated Potential GDP Estimates

Our base case is for the pandemic to cause a fairly large drop in potential growth, notably in the short term. We have cut our projections across the board for potential growth since our previous update, in 2018 (see table).

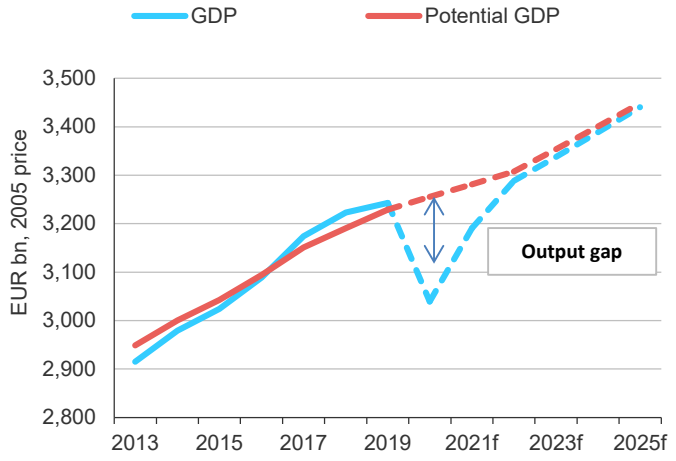
For the US, we now project potential GDP to expand by 1.4% a year on average for the whole period (2020-2025), down from 1.9% in our pre-crisis estimate. That would imply that by 2025, US potential GDP will be 3.2% lower than it would have otherwise been. In the eurozone, potential GDP would be 2.7% lower overall, although we foresee large regional differences: we expect the crisis to leave larger scars (relative to the pre-pandemic path) in Spain, Italy and France than Germany. We also expect large negative effects on Australia, the UK and Canada.

Output Gaps 2007 to 2019



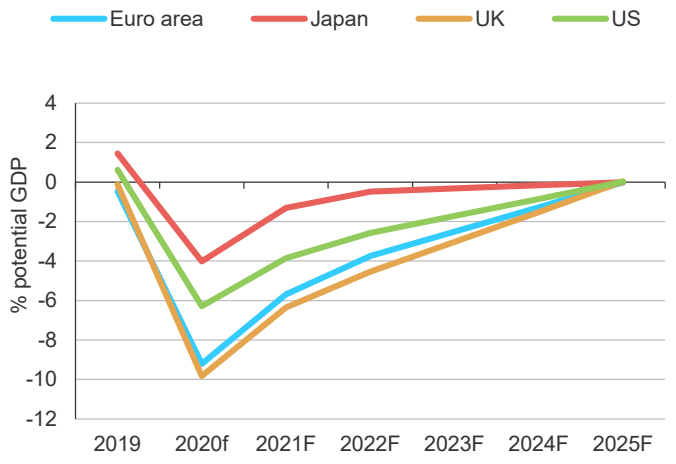
Source: Fitch Ratings' estimates, Haver Analytics

Germany: Projected GDP and Potential GDP



Source: Fitch Ratings, Haver Analytics

Projected Output Gaps



Source: Fitch Ratings' estimates, Haver Analytics

We compared our forecast change in potential growth in the aftermath of the coronavirus crisis and the financial crisis. The chart displays on the x-axis the change in average potential growth in 2009-2011 compared with 2005-2007. The y-axis represents our expected change in potential growth in 2020-2025 versus the pre-pandemic years of 2017-2019.

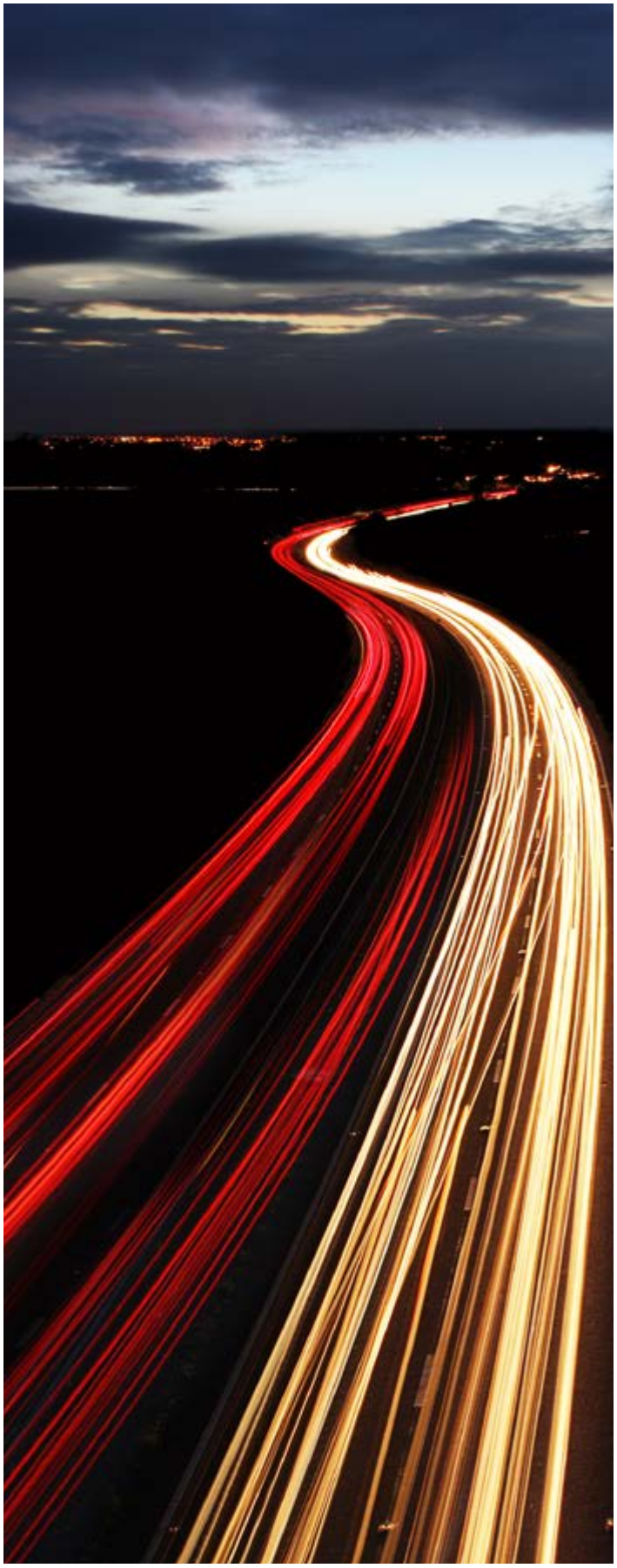
The chart shows that we expect the hit to potential growth in the aftermath of the pandemic to be milder than that after the financial crisis. For example, we estimate that Swiss annual potential growth declined 1.3pp in the years following the financial crisis. In contrast, we expect Swiss potential growth to fall by around 0.7pp in the aftermath of the coronavirus crisis. We estimate the (unweighted) average Fitch10 DMs loss of potential growth to be 0.9pp after the financial crisis, versus 0.6pp after the pandemic – so a smaller scarring effect.

Output Gap and Medium-Term Recovery Paths

The speed at which economies will grow after 2022 is highly uncertain. Our GDP growth forecasts for 2023-2025 hinge on a 'half-cycle' assumption that actual output will become aligned with potential output by the middle of the decade. In the longer term, supply-side factors will drive growth as divergences between potential supply and demand result in self-correcting responses and/or policy adjustments that act to re-align supply and demand. We have assumed that these realignments will have played out within the next five to six years (a judgement that implies a full cycle length of 10 to 12 years) and hence the assumption that the output gap will have closed by no later than 2025. Given the challenges of forecasting demand developments beyond the short term, the path by which any projected remaining output gap in 2022 is closed in subsequent years is assumed to be smooth.

According to most estimates (including ours), it took more than five years in certain regions to close output gaps after the financial crisis, which was the reflection of a post-crisis recovery hindered by numerous challenges, including the eurozone crisis and tight fiscal policy. We assess that the UK's output gap was broadly closed in 2016, and the eurozone output gap in 2018 – a decade after the financial crisis.

However, following the coronavirus crisis, we think that policy support will remain for longer, or at least we would not expect a sharp tightening of fiscal policy as had happened in the aftermath of the financial crisis. This should ensure that demand is not held back by tightening macro policy until 2025, although the possibility of post-crisis fiscal tightening weighing on demand growth in the medium term is an important downside risk. The upshot is that countries should reach their sustainable level of output (ie an output gap around zero) in fewer years. Nevertheless, weak potential growth in the years ahead would imply that actual economic growth rates in 2022-2025 are, on average, only likely to be broadly in line with the average rates of the past 5-10 years despite the low starting point in 2020.



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Alichi, A et al., "Multivariate Filter Estimation of Potential Output for the United States: An Extension with Labor Market Hysteresis", IMF Working Paper WP/19/35

Supply-Side Drivers of US GDP Growth

(Annual average % change)	1965 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**1.2**	**0.6**	**0.8**	**0.5**	**0.4**	**0.5**
Employment rate	**0.2**	**0.8**	**0.4**	**-0.8**	**0.2**	**-0.3**
- Participation rate	0.2	0.3	-0.2	-0.2	-0.1	-0.2
- Employment % labour force	0.0	0.5	0.6	-0.6	0.3	-0.2
Hours worked	**-0.2**	**0.0**	**0.1**	**-0.1**	**0.0**	**-0.1**
Labour productivity	**1.5**	**0.7**	**0.8**	**1.3**	**1.2**	**1.2**
- Contribution from capital deepening	0.4	-0.1	-0.1	0.5	0.2	0.4
- Total factor productivity	1.1	0.9	0.9	0.8	0.9	0.9
GDP	**2.9**	**2.4**	**2.3**	**0.9**	**1.8**	**1.4**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

US GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	2.3	-5.6	4.0	2.7	2.2	2.2	2.2
Output gap (% potential GDP)	0.6	-6.3	-3.9	-2.6	-1.7	-0.9	0.0
Potential GDP		1.4	1.4	1.4	1.4	1.4	1.4

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

1982 to 2019

Supply-Side Drivers of Japanese GDP Growth

(Annual average % change)	1982 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**0.4**	**-0.6**	**-0.5**	**-0.8**	**-0.9**	**-0.9**
Employment rate	**0.2**	**1.6**	**1.2**	**0.4**	**0.7**	**0.6**
- Participation rate	0.2	1.4	0.9	0.5	0.6	0.6
- Employment % labour force	0.0	0.3	0.3	-0.1	0.1	0.0
Hours worked	**-0.6**	**-0.7**	**-0.3**	**-0.5**	**-0.3**	**-0.4**
Labour productivity	**2.4**	**0.6**	**0.9**	**1.0**	**1.1**	**1.1**
- Contribution from capital deepening	1.4	0.0	-0.2	0.5	0.3	0.4
- Total factor productivity	1.0	0.6	1.1	0.5	0.8	0.7
GDP	**2.3**	**1.0**	**1.3**	**0.1**	**0.6**	**0.4**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

Japan GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	0.7	-5.0	3.2	1.2	0.5	0.5	0.5
Output gap (% potential GDP)	1.4	-4.0	-1.3	-0.5	-0.3	-0.2	0.0
Potential GDP		0.4	0.4	0.4	0.4	0.4	0.4

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

Supply-Side Drivers of UK GDP Growth

(Annual average % change)	1972 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**0.5**	**0.5**	**0.6**	**0.2**	**0.2**	**0.2**
Employment rate	**0.2**	**0.8**	**0.6**	**-0.4**	**0.4**	**0.0**
- Participation rate	0.2	0.3	0.2	0.0	0.1	0.1
- Employment % labour force	0.0	0.5	0.4	-0.4	0.3	-0.1
Hours worked	**-0.3**	**-0.1**	**0.1**	**-0.2**	**-0.1**	**-0.2**
Labour productivity	**1.8**	**0.6**	**0.5**	**0.8**	**0.8**	**0.8**
- Contribution from capital deepening	0.6	0.2	0.0	0.5	0.4	0.5
- Total factor productivity	1.2	0.4	0.5	0.3	0.4	0.4
GDP	**2.2**	**1.8**	**1.9**	**0.4**	**1.3**	**0.9**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

UK GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	1.4	-9.0	4.7	2.8	2.4	2.4	2.4
Output gap (% potential GDP)	-0.1	-9.8	-6.4	-4.5	-3.0	-1.5	0.0
Potential GDP		0.9	0.9	0.9	0.9	0.9	0.9

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

Supply-Side Drivers of German GDP Growth

(Annual average % change)	1993 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**0.0**	**0.1**	**-0.1**	**0.0**	**-0.2**	**-0.1**
Employment rate	**0.6**	**1.1**	**1.1**	**-0.1**	**0.5**	**0.2**
- Participation rate	0.5	0.7	0.6	0.2	0.3	0.3
- Employment % labour force	0.1	0.4	0.5	-0.3	0.2	0.0
Hours worked	**-0.4**	**-0.2**	**-0.1**	**-0.2**	**-0.1**	**-0.2**
Labour productivity	**1.2**	**0.7**	**1.0**	**1.1**	**1.2**	**1.1**
- Contribution from capital deepening	0.4	0.0	0.0	0.5	0.4	0.4
- Total factor productivity	0.7	0.7	1.1	0.6	0.8	0.7
GDP	**1.3**	**1.7**	**2.0**	**0.8**	**1.4**	**1.1**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

Germany GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	0.6	-6.3	5.0	3.1	1.5	1.5	1.5
Output gap (% potential GDP)	0.4	-6.9	-3.3	-1.4	-0.9	-0.5	0.0
Potential GDP		1.1	1.1	1.1	1.1	1.1	1.1

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

Supply-Side Drivers of French GDP Growth

(Annual average % change)	1976 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**0.5**	**0.3**	**0.3**	**0.1**	**-0.1**	**0.0**
Employment rate	**-0.1**	**0.2**	**0.0**	**-0.5**	**0.1**	**-0.2**
- Participation rate	0.0	-0.2	-0.1	-0.3	0	-0.2
- Employment % labour force	-0.1	0.4	0.1	-0.2	0.1	-0.1
Hours worked	**-0.4**	**-0.2**	**-0.2**	**-0.3**	**-0.2**	**-0.2**
Labour productivity	**1.8**	**1.0**	**0.9**	**1.0**	**1.1**	**1.1**
- Contribution from capital deepening	0.8	0.4	0.4	0.7	0.5	0.6
- Total factor productivity	1.0	0.6	0.5	0.4	0.5	0.5
GDP	**2.0**	**1.5**	**1.3**	**0.3**	**0.9**	**0.6**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

France GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	1.5	-9.0	4.3	3.0	1.9	1.9	1.9
Output gap (% potential GDP)	0.0	-9.5	-6.2	-3.9	-2.6	-1.3	0.0
Potential GDP		0.6	0.6	0.6	0.6	0.6	0.6

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

Supply Side Drivers of Italian GDP Growth

(Annual average % change)	1982 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**0.2**	**-0.2**	**0.0**	**-0.2**	**-0.3**	**-0.3**
Employment rate	**0.0**	**1.2**	**0.3**	**-0.1**	**0.5**	**0.2**
- Participation rate	0.1	0.6	0.5	0.1	0.3	0.2
- Employment % labour force	-0.1	0.6	-0.2	-0.2	0.2	0.0
Hours worked	**-0.2**	**0.1**	**-0.3**	**-0.2**	**-0.1**	**-0.2**
Labour productivity	**0.9**	**-0.1**	**0.3**	**0.2**	**0.2**	**0.2**
- Contribution from capital deepening	0.7	-0.6	0.1	0.1	-0.1	0.0
- Total factor productivity	0.2	0.5	0.2	0.1	0.3	0.2
GDP	**1.1**	**1.0**	**0.2**	**-0.4**	**0.3**	**0.0**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

Italy GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	0.3	-9.5	4.4	2.1	1.8	1.8	1.8
Output gap (% potential GDP)	-2.1	-11.3	-7.4	-5.4	-3.6	-1.8	0.0
Potential GDP		0.0	0.0	0.0	0.0	0.0	0.0

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

Supply-Side Drivers of Spanish GDP Growth

(Annual average % change)	1982 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**0.8**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**
Employment rate	**0.3**	**2.5**	**0.3**	**-0.6**	**0.4**	**-0.1**
- Participation rate	0.5	-0.1	-0.1	-0.1	0.0	-0.1
- Employment % labour force	-0.2	2.6	0.4	-0.5	0.4	-0.1
Hours worked	**-0.5**	**0.1**	**-0.1**	**-0.3**	**0.1**	**-0.1**
Labour productivity	**1.7**	**0.4**	**1.0**	**1.5**	**0.9**	**1.2**
- Contribution from capital deepening	1.2	-0.7	0.4	0.8	0.2	0.5
- Total factor productivity	0.5	1.1	0.5	0.6	0.6	0.6
GDP	**2.2**	**2.8**	**1.0**	**0.5**	**1.4**	**1.0**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

Spain GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	2.0	-9.6	4.4	2.5	3.4	3.4	3.4
Output gap (% potential GDP)	-1.4	-11.6	-8.6	-7.2	-4.9	-2.5	0.0
Potential GDP		1.0	1.0	1.0	1.0	1.0	1.0

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

Supply-Side Drivers of Australian GDP Growth

(Annual average % change)	1980 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**1.5**	**1.4**	**1.5**	**1.2**	**1.4**	**1.3**
Employment rate	**0.4**	**0.8**	**0.3**	**0.0**	**0.3**	**0.1**
- Participation rate	0.3	0.6	0.2	0.1	0.2	0.2
- Employment % labour force	0.0	0.2	0.0	-0.1	0.1	0.0
Hours worked	**-0.2**	**-0.3**	**-0.2**	**-0.4**	**-0.2**	**-0.3**
Labour productivity	**1.4**	**0.5**	**1.0**	**0.6**	**0.5**	**0.5**
- Contribution from capital deepening	0.7	0.1	0.6	0.3	0.1	0.2
- Total factor productivity	0.7	0.4	0.4	0.3	0.4	0.4
GDP	**3.1**	**2.4**	**2.6**	**1.4**	**2.0**	**1.7**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

Australia GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	1.8	-2.7	3.1	2.7	2.6	2.6	2.6
Output gap (% potential GDP)	-0.9	-5.1	-3.8	-2.8	-1.9	-0.9	0.0
Potential GDP		1.7	1.7	1.7	1.7	1.7	1.7

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

Supply-Side Drivers of Canadian GDP Growth

(Annual average % change)	1972 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**1.4**	**0.9**	**1.1**	**0.6**	**0.7**	**0.7**
Employment rate	**0.4**	**0.4**	**0.2**	**-0.6**	**-0.1**	**-0.4**
- Participation rate	0.4	0.2	0.0	-0.3	-0.2	-0.3
- Employment % labour force	0.0	0.3	0.3	-0.3	0.1	-0.1
Hours worked	**-0.3**	**0.0**	**0.0**	**-0.2**	**0**	**-0.1**
Labour productivity	**1.1**	**0.4**	**0.9**	**0.8**	**0.8**	**0.8**
- Contribution from capital deepening	0.6	0.5	0.8	0.7	0.5	0.6
- Total factor productivity	0.5	-0.1	0.1	0.1	0.3	0.2
GDP	**2.7**	**1.7**	**2.2**	**0.6**	**1.4**	**1.0**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

Canada GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	1.7	-7.1	3.9	2.8	2.2	2.2	2.2
Output gap (% potential GDP)	-0.1	-8.1	-5.4	-3.7	-2.4	-1.2	0.0
Potential GDP		1.0	1.0	1.0	1.0	1.0	1.0

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

Supply-Side Drivers of Swiss GDP Growth

(Annual average % change)	1976 to 2019	2015 to 2019	2010 to 2019	Projected potential GDP growth		
				2020-22	2023-25	Whole period
Working-age population	**0.8**	**0.8**	**1.0**	**0.3**	**0.3**	**0.3**
Employment rate	**0.3**	**0.5**	**0.2**	**-0.2**	**0.3**	**0.1**
- Participation rate	0.3	0.3	0.0	0.1	0.2	0.2
- Employment % labour force	0.0	0.2	0.1	-0.3	0.1	-0.1
Hours worked	**-0.4**	**-0.3**	**-0.4**	**-0.4**	**-0.3**	**-0.4**
Labour productivity	**1.0**	**0.9**	**1.0**	**1.1**	**1.0**	**1.0**
- Contribution from capital deepening	0.3	0.2	0.1	0.5	0.3	0.4
- Total factor productivity	0.7	0.7	0.9	0.6	0.7	0.7
GDP	**1.7**	**1.7**	**1.9**	**0.8**	**1.3**	**1.0**

Source: Fitch Ratings. Note that numbers may not always add up due to rounding

Switzerland GDP Projections

(Annual average % change)	2019	2020F	2021F	2022F	2023F	2024F	2025F
GDP*	1.0	-7.0	3.3	2.9	2.4	2.4	2.4
Output gap (% potential GDP)	-0.1	-7.9	-5.8	-4.0	-2.7	-1.3	0.0
Potential GDP		1.0	1.0	1.0	1.0	1.0	1.0

Source: Fitch Ratings *2020, 2021 and 2022 Fitch June 2020 GEO forecasts

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