THE WORLD ECONOMY

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World Overview

Overview

Economic activity showed a marked slowing in growth in several countries during the second half of last year. The key issue for the forecast concerns to what extent this slowdown may presage a more widespread and deeper slowing in economic growth. Our central view continues to be that global economic growth will be weaker this year than last but that the pace of growth will moderate, not plunge. Three features support this view: part of the pick-up in growth in 2016–18 can be explained by expansionary policies, so that a slowing is a natural result of these policies maturing; monetary and fiscal policy in China have already been relaxed in response to the slowdown in demand, and more dovish sentiment around US and Euro Area monetary policy will support growth; and inflation, especially in the advanced economies, is expected to stay low at a time when growth has picked up, so that rising real incomes should contribute. Accordingly, we see 2019 and 2020 as years of slower output growth, not as years when a brake is applied to growth.

Annual global GDP growth exceeded 3.5 per cent in both 2017 and 2018, a moderate improvement on average growth recorded in the preceding five years. In 2017, China, the US and the Euro Area all saw markedly faster GDP growth than in the previous year. There was a more mixed picture for these three major economies in 2018 – growth in the US picked up further with a boost from fiscal policy changes, but growth in both China and the Euro Area slowed. For 2019 and 2020 we expect the pace of growth in each of these three areas to slow further and global growth to be around 3½ per cent in both years.

While there have been a couple of years of stronger output growth, with unemployment rates falling, inflationary pressures have been largely absent. This factor, together with the weakening short-term outlook and the fall in oil prices in the latter part of 2018, has also helped to assuage fears of a pick-up in inflation and underpinned expectations of a more dovish monetary policy stance that should help to support growth in the near term.

While GDP growth momentum in many emerging economies remains, slowing output growth in three economic areas that comprise around half of global activity is likely to have a longer reach through trade. Indicators of world trade growth showed a substantial weakening in the final quarter of 2018, a slowing that was particularly marked in the Chinese data. Part of this is likely to be in response to the US and Chinese tariff changes last year but here the news looks reasonably positive. To date, the threatened increase in US tariffs on some Chinese goods, from 10 per cent to 25 per cent, has not been enacted and the G20 meeting in Argentina in November and December 2018 had a more positive tone on US/China trade. Further tariff increases, however, remain a downside risk to the outlook, especially with possible US tariffs on some EU products being discussed.

Our view is that we have now seen a peak in the global GDP growth rate cycle. Unless one of the potential downside risks that we consider occurs, we expect the slowing in the growth cycle to be gradual rather than abrupt. While oil prices have risen again since the end of 2018, inflation expectations have remained stable, and

the monetary policy outlook in several economies is now more dovish.

Figure 1 shows our expectations for global annual GDP growth and also growth in both the advanced economies (AE) and the developing and emerging economies (EM). The narrative of the relatively slow expansion since the Great Recession of the advanced economies, which account for about 40 per cent of global GDP, despite policy interest rates being held at ultra-low levels in a substantial number of economies for an extended period, has been well documented. Another feature is the slowing pace of annual GDP growth in the emerging economies, which now account for around 60 per cent of global GDP. For the emerging economies, the slower average annual pace of growth (5 per cent between 2011 and 2018 compared to 6.6 per cent between 2000 and 2007) is almost entirely due to the slower pace of growth in China (7.5 per cent in the later period compared with 10.5 per cent) as China accounts for around one third of emerging economies' GDP.[1] This slower growth in China was anticipated as the development phase of the Chinese economy changed.

For emerging economies as a whole, our expectation of continued gradual slowing of annual growth in China is an important factor for the overall pattern. While growth in economies such as India and Indonesia may remain robust and growth in Brazil may strengthen, the scale

of the Chinese economy is an important consideration. Over the past two decades China has grown to account for around 18 per cent of global GDP (in PPP weighted terms) and its contribution to global GDP growth has, in percentage points terms, risen (see figure 2).

Last year the synchronisation of global growth weakened a little.[2] The synchronised acceleration of growth may now be turning into a synchronised slowdown. During 2018 Argentina and Turkey experienced economic turmoil and Italy has moved into recession. GDP growth in the second half of last year moved South Africa out of recession and the Economic Recovery and Stimulus Plan announced in September offers support for growth continuing there, although structural issues such as electricity supply capability remain. For Brazil, another economy that has recently emerged from recession, the recent stronger growth perhaps masks some underlying fiscal concerns that are likely to result in subdued, rather than dynamic, growth.

Within the wider pattern there are also some specific effects that are playing a role. Japan was affected by particularly adverse climate effects last year and in Germany a relative lack of rainfall contributed to river transportation difficulties. German car production has been adversely affected by new European technical standards and, seemingly, by a reduction in demand from China following the ending of tax rebate schemes.

Figure 1. GDP growth in advanced and emerging economies
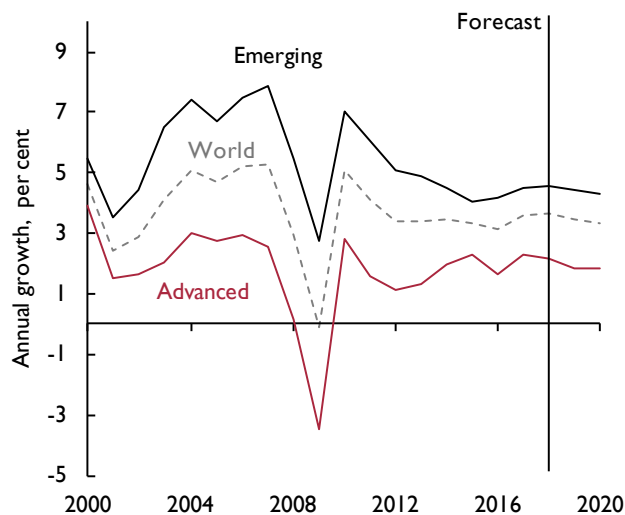
Source: NiGEM database and NIESR forecast.

Figure 2. Contributions to global GDP growth (percentage point contributions, PPP weighted)
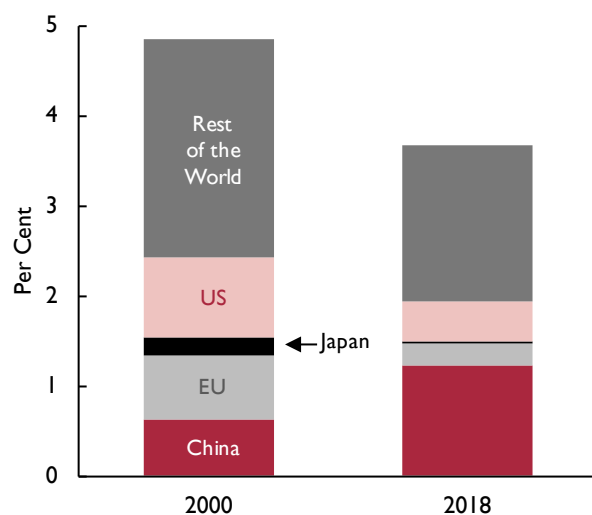
Source: NiGEM database and NIESR forecast.

| Table 1. Forecast summary | | | | | | | | | | | | | *Percentage change* |

Real GDP[a] — **World trade[b]**

	World	OECD	China	BRICS+	Euro Area	USA	Japan	Germany	France	Italy	UK	Canada	World trade[b]
2009–14	3.4	1.1	8.7	6.1	–0.1	1.4	0.4	0.9	0.5	–1.3	0.9	1.7	3.4
2015	3.5	2.5	6.9	4.8	2.0	2.9	1.3	1.5	1.0	0.8	2.3	0.7	3.0
2016	3.3	1.8	6.7	5.1	1.9	1.6	0.6	2.2	1.1	1.2	1.8	1.1	2.5
2017	3.7	2.6	6.9	5.6	2.5	2.2	1.9	2.5	2.3	1.7	1.8	3.0	5.2
2018	3.7	2.3	6.6	5.4	1.8	2.9	0.8	1.4	1.6	0.8	1.4	1.8	4.5
2019	3.4	1.9	6.2	5.0	1.3	2.4	0.9	0.8	1.2	0.4	1.4	1.8	3.7
2020	3.6	2.0	6.1	5.3	1.7	2.1	0.3	1.5	1.7	1.0	1.6	2.0	4.6
2021–25	3.5	1.8	5.4	5.0	1.3	1.8	0.8	1.2	1.5	1.0	1.8	1.8	4.1

Private consumption deflator — **Interest rates[c]** — **Oil ($ per barrel) [d]**

	OECD	BRICS+	Euro Area	USA	Japan	Germany	France	Italy	UK	USA	Japan	Euro Area	Oil ($ per barrel) [d]
2009–14	1.6	5.2	1.1	1.5	–0.5	1.2	0.6	1.4	2.1	0.3	0.1	0.9	94.7
2015	0.8	5.0	0.3	0.3	0.4	0.6	0.3	0.2	0.5	0.3	0.1	0.1	52.1
2016	1.1	4.3	0.4	1.1	–0.5	0.7	–0.2	0.2	1.4	0.5	–0.1	0.0	42.9
2017	2.1	3.3	1.4	1.8	0.2	1.6	1.3	1.1	2.1	1.1	–0.1	0.0	54.0
2018	2.5	3.8	1.5	2.0	0.5	1.6	1.7	1.1	2.3	1.9	–0.1	0.0	70.4
2019	2.6	4.0	1.8	1.6	1.1	1.9	1.7	1.6	2.0	2.5	–0.1	0.0	67.4
2020	3.0	4.3	2.0	2.1	2.5	2.1	1.9	1.7	2.0	2.5	–0.1	0.0	66.6
2021–25	2.4	3.6	1.7	2.1	1.2	1.7	1.7	1.5	2.0	3.1	0.4	0.6	70.2

Notes: Forecast produced using the NiGEM model. BRICS+ includes Brazil, China, Russia, India, Indonesia, Mexico, South Africa, Turkey. (a) GDP growth at market prices. Regional aggregates are based on PPP shares, 2011 reference year. (b) Trade in goods and services. (c) Central bank intervention rate, period average. (d) Average of Dubai and Brent spot prices.

It is possible that there are broader changes at play in the car market, with the green agenda and the development of electric cars disrupting traditional supply and demand patterns, and that these may play a role in explaining the recent relative under-performance.

To date, growth in the advanced economies has not resulted in any pressures on capacity and skills being reflected in sustained upward pressure on inflation. Lower oil prices in the second half of last year (oil prices fell by 35 per cent in the second half of the year) should help to restrain inflationary pressures in 2019. So far in the expansion phase, rising price inflation has not led to monetary policy problems in the advanced economies but rising asset prices, including house prices, may be a potential cause for concern in some economies.[3] The increases in US policy rates have been part of a process of normalisation rather than a response to rising inflationary pressures. Our expectation is that the slower growth outlook is likely to lead to postponements of any anticipated gradual increases in policy rates in the US and Euro Area, as factored in to financial markets so far this year. For the medium term, we continue to expect that, based on population

growth projections and productivity growth failing to show a return to pre-recession growth rates, the pace of growth in the advanced economies will moderate a little further. Our medium-term forecast continues to expect global growth to run at around 3½ per cent a year, with growth in the advanced economies continuing below that in the emerging economies.

Recent developments and the baseline forecast

Recent economic developments

Since the start of the year economic indicators have painted an unsettled picture. In the US, the federal government shutdown has both interrupted the flow of official economic statistics and possibly contributed to some volatility in the published data. The most high profile monthly data point, the monthly non-farm payroll net change in employment, recorded an increase of only 33,000 in February, the lowest since September 2017 but March saw a substantial rebound. While this dip did not produce a major reaction in financial markets, it has contributed to a more cautious ("patient") approach at the Federal Reserve as noted in

FOMC statements in January and March and speeches by the Federal Reserve Chair and Vice-Chair.[4]

While the tensions in the trade dispute between the US and China may have eased since the G20 meeting in November and December 2018, the effects of the initial rounds of tariff impositions and a slowing in Chinese output growth seem to have adversely affected world trade growth in late 2018. Figures from the Netherlands Bureau for Economic Policy Analysis (CPB) show that the volume of world trade fell in both November and December, with the falls centred in Asia.[5] The extent to which this fall is a transitory event or a longer-lasting one is uncertain, especially as figures for January (albeit incomplete) show a return to growth in world trade. Domestically in China the pace of economic growth slowed last year and, although the reserve requirement for major banks was reduced last year, a further slowing in GDP growth is anticipated this year, which is likely to slow import growth further.

The emerging economies as a group continued to grow at a faster rate than the advanced economies in 2018. Within the grouping, India and China have continued to grow at a faster pace than the average and that theme is expected to continue. The Philippines and Vietnam also grew strongly, without necessarily seeing inflation rise, but after 7.4 per cent growth in Turkey in 2017 that economy has seen a rapid turnaround as inflation has risen and sanctions have hit. Argentina, with inflation recently reaching 50 per cent, and Turkey (19 per cent) are seeing very rapid inflation but, so far at least, their experiences have not spread to other economies. Hyperinflation in Venezuela is an isolated case.

Judged across a range of activity indicators and a range of economies, recent economic news, particularly in the manufacturing sector, has been generally weaker than anticipated six months ago, possibly reflecting a lagged effect from the imposition of trade tariffs and the uncertainty about how these trade tensions would develop. The weakening may also reflect some industry or country specific factors such as the difficulties in the car industry in Germany and the drop in demand for new cars in China. It may, however, be that after a period of strong global growth during which US monetary policy has tightened, the pace of growth is adjusting back to a more sustainable pace.

Our revised baseline forecast

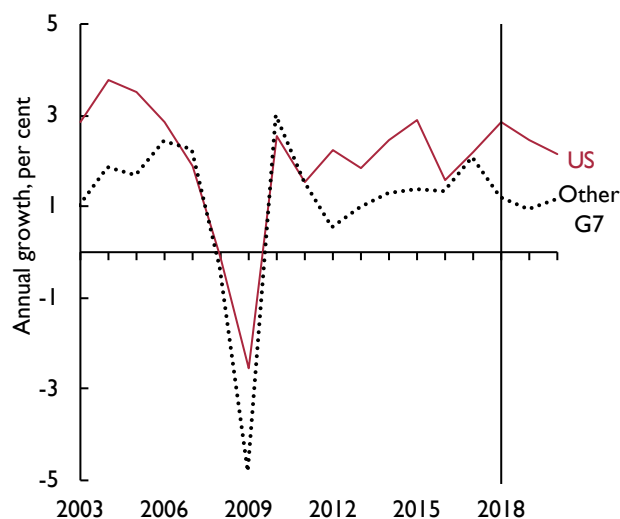As a consequence of the economic data since our February forecast, we have reduced our estimate of global GDP growth for 2018 from 3.8 per cent to 3.7 per cent, identifying 2017 and 2018 as peak growth years as a consequence. While activity and trade weakened in the second half of last year and this theme has continued in the early data this year, our forecast view is that this will prove to be temporary, aided by less tightening of US and Euro Area monetary policy than previously anticipated and supportive policy actions already taken in China. As a consequence, we have reduced our forecast for global GDP growth in 2019 from 3.6 per cent to 3.4 per cent. In 2020 our forecast has increased slightly to just over 3½ per cent. Our forecast is for global output growth to be at a sustainable pace, with inflation continuing broadly within target ranges, albeit with risks to this outlook. The view we expressed last November, that "now may be, in growth terms, 'as good as it gets'", remains.[6]

After the boost from fiscal policy, the US recorded growth of 2.9 per cent in 2018. As the boost recedes and the gradual tightening of monetary policy takes hold, we expect output growth to slow this year to 2½ per cent and to around 2 per cent in 2020, closer to estimates of a long-term trend rate. There are some concerns in the US about the possibility of a recession in the coming year, as the result of an exposure from the extended length of the recovery and the falling yield spread (see Box A). Our central expectation is for a gradual, not an abrupt, slowing in growth, with real income growth supporting consumer spending and business investment growth steady. Annual growth in the US should continue to outpace that in the rest of the G7 economies by a similar rate to that before the Great Recession (see figure 3).

The 2.5 per cent annual GDP growth recorded in the Euro Area in 2017 looked unsustainable and indeed it moderated last year to 1.8 per cent, with pockets of weakness throughout the year, notably with Italy falling into, and Germany narrowly avoiding, recession. The early activity indicators, especially on manufacturing, have not been encouraging and we have reduced our Euro Area GDP growth forecast from 1¾ per cent for this year to 1¼ per cent, with growth strengthening a little in 2020. The unemployment rate has fallen substantially over the past six years, but this weakening in output growth risks arresting that decline and the unemployment rate looks likely to remain high by pre-recession standards. With inflation within the Euro Area remaining subdued, the ECB is now set to continue its accommodative monetary policy stance this year in the light of the latest activity data and perceived risks.

We expect that the rise in the consumption tax will proceed in the final quarter of this year in Japan and, on the basis of previous experience, this is likely to bring

Figure 3. GDP growth in advanced economies

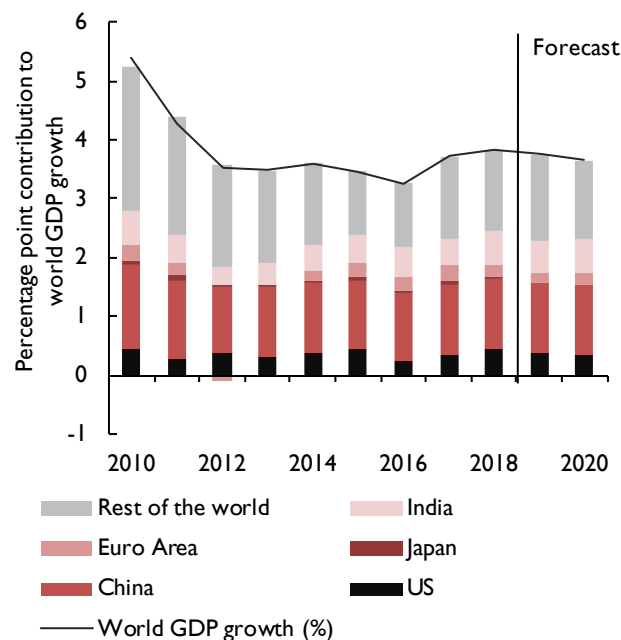
Source: NiGEM database and NIESR forecast.

steady growth of the emerging economies group. Box B discusses another perspective on anticipated short-term growth and inflation trends in major advanced and emerging economies which also points to a loss in momentum in growth in late 2018 and early 2019, and some prospects for improved economic trends in late 2019.

Lower oil prices than at the peak in the third quarter of last year (Brent Crude is 19 per cent lower than that peak) will support continued low inflation and, together with some slowing in the pace of growth, are likely to reduce the impetus to any tightening of monetary policy. The ongoing economic expansion and the reductions in the headline unemployment rates that it has brought, have led to skilled labour shortages and rising wage pressures in some advanced economies becoming a more prominent feature. To the extent that these reflect a build-up of pressures on capacity and may lead to rises in unit labour costs, they could increase upward pressure on inflation. With a few exceptions such as Argentina and Turkey, we see the near-term prospects as being for price inflation to remain low and stable as potential supply continues to increase in the emerging economies, and inflation expectations appear stable, although asset price inflation, including housing in the advanced economies, has been stronger than price inflation.

forward some consumer spending and, because of the timing, boost Japanese GDP growth this year at the expense of next. With US policy rates now expected to rise by less than they were three or six months ago and longer duration US bond yields having drifted down, some emerging market economies will experience less pressure from rising US dollar interest payments and that might be a positive for global growth relative to six months ago. While uncertainty still remains about the position on US tariffs, such that a change of direction cannot be ruled out, the US stockmarket has shrugged off the talk of a bear market phase after the sharp equity price falls in December and at 3 April the S&P 500 index was up 22 per cent from the low point in late December, giving some boost to confidence.

Emerging economies as a whole are expected to continue to grow at a faster rate than the advanced economies over the forecast period, with India and China still growing at a faster pace than the average but with some slowing in pace in both of these major contributors to global growth. Slightly slower individual growth here combines with growing shares in global GDP to leave their overall contributions to growth little changed. The contribution of 'other' economies (excluding China and India) is expected to remain stable and is shown in figure 4. The BRIC group of countries accounted for 32 per cent of global GDP and about 50 per cent of global growth last year. In addition, Vietnam, Indonesia, Mexico and Singapore are all expected to contribute to the continued

Figure 4. World GDP growth and its components

Source: NiGEM database and NIESR forecast.

Figure 5. Consumer price inflation
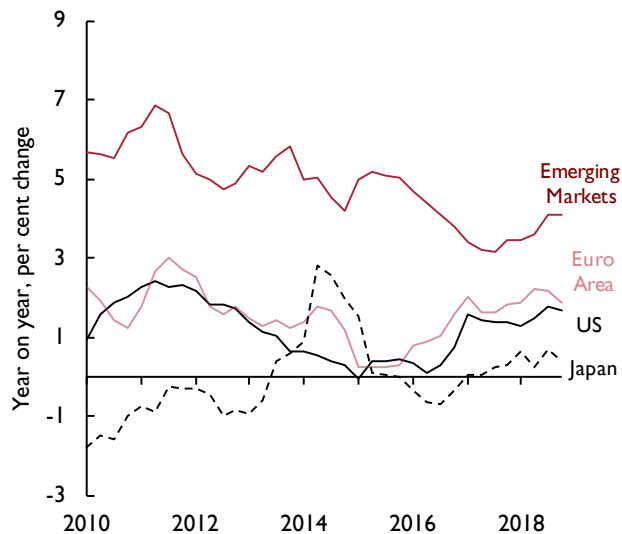
Source: NiGEM database.
Note: 2019 includes forecast. Consumer expenditure deflator is used for the US, Euro Area and Japan, CPI for emerging markets. Emerging markets – weighted average of Brazil, China, India, Indonesia, Mexico, Russia and Turkey.

Into the medium term we expect the pace of GDP growth to run at an annual rate similar to that in 2019 and 2020 at around 3½ per cent. This is a slower pace than in the period before the Great Recession, reflecting the slower rate of productivity growth seen over the past decade, the continued narrowing of output gaps in the expansion since the recession, slower anticipated demographic growth and the longer-term deceleration in the pace of annual growth in China.

Monetary policy

The main focus in global markets with regard to monetary policy has continued to be on the US Federal Reserve. After raising policy rates three times in 2017, it acted a further four times last year to reach the 2.25–2.50 per cent range. Following the government shutdown and some weaker activity indicators, especially for the manufacturing sector, the more dovish tone of the December FOMC meeting (which included a reduction in expectations of the policy rate in the longer term) has been maintained. At the meeting on 20 March, the near-term median projections for the policy rate were reduced by around 50 basis points, in effect implying that the rate-hiking cycle was all but over. These changes have been reflected in market expectations, which show a weaker rising rate profile than three and

six months ago and the reduction in the rate profile has even sparked some speculation about the possibility of a policy rate reduction, should activity and inflation performance be weaker than anticipated.

The ECB had given guidance that it would continue to hold policy rates in negative territory until the summer of this year and has ended its quantitative easing programme. However, the downturn in economic activity in Germany and Italy and the slowing growth of world trade, together with the continued below target inflation, have led to a policy change already this year. The date for the forward guidance on policy rates has been pushed back to "at least through the end of 2019" and a new series of targeted longer-term refinancing operations have been launched.[7] As a consequence, our monetary policy interest rate expectations are for a very gradual tightening in the advanced economies over the longer-term forecast horizon, and a more accommodative near-term policy than assumed in our February forecast. This plays a role in supporting economic growth.

With inflationary pressures generally subdued (see figure 5) and the US Federal Reserve less keen on tightening further than it appeared to be six months or a year ago, some of the concerns about non-financial companies' debt in some emerging economies, especially if the US dollar were to strengthen along with interest rates, may have diminished a little.[8] In China, further policy relaxation in order to stimulate growth is possible, but the authorities will be keeping watch on trade relations with the US, global trade trends and internal debt levels in order to deliver the growth projections within the formal plans. These now project a further slowing of growth in 2019, and policy was adapted last year.

Financial and foreign exchange markets

December saw a sudden change in sentiment in US equity markets, with the S&P index falling by almost 20 per cent during the final quarter up to Christmas. Since Christmas there has been a recovery, with the S&P index up 22 per cent from the low to 3 April. The pre-Christmas US market fall was transmitted internationally, with the Nikkei and the FTSE 100 also falling but not as sharply. These indices, too, have recovered in the opening months of 2019. Reflecting uncertainties about tariffs, a global slowdown, further US monetary policy tightening, the possibility of a US recession and the underlying concerns about possible over-valuation, volatility also increased in the second half of 2018. The Vix index,[9] an indicator of financial market volatility or uncertainty, spiked in late December (reaching 36.1, the highest since the equity falls in early February 2018) but has since steadily fallen

back. At 13.7 on 3 April, its level is similar to that before October last year. With continued global uncertainties, the potential vulnerability of equity markets remains.

As US monetary policy tightened last year, US 10-year bond yields rose too, rising again to 3.24 per cent in early November – their highest since 2011. This reflected the higher level of short-term rates and an anticipation of some future increases in policy interest rates. Following the more dovish tone from the Federal Reserve, US 10-year yields have fallen again, reaching 2.39 per cent on 3 April. As a consequence, the slope of the yield curve, a much used lead indicator of recession,[10] has moved much closer to inverting and, on the basis of some estimates, closer to signalling a recession likely ahead.

In the Euro Area, 10-year government bond yields have also fallen as economic weakness has led to a change in the policy outlook. While quantitative easing has ended, the ECB has changed its guidance on policy rates, to note that these will be held at least through 2019.

The US dollar depreciated against the euro through 2017 by almost 20 per cent and hit a low point in late January last year despite the rising profile of US policy interest rates. Since then the US dollar has appreciated by about 10 per cent against the euro, regaining some of its previous loss. The US trade-weighted exchange rate index has shown a US dollar appreciation over the past year, potentially putting pressure on those non-US borrowers who have dollar denominated debt to repay.

Commodity markets

Brent oil prices peaked in early October 2018 at $86 pb, and then fell steadily through the final quarter of last year to end the year around 40 per cent down from that peak. Oil prices are currently around $70 pb, at similar levels to a year ago, having risen from the lows at the end of 2018. The fall from the peak last year has provided a disinflationary impulse relative to six months ago, a feature which has been reflected in reduced concerns about potential over-shooting of inflation targets in advanced economies. As a consequence of the change in oil prices and the slower growth outlook, the oil price forecast assumption supports a continuation of the low global inflation outlook.[11]

For other commodities, The Economist all-items commodity price index (in dollar terms) fell in the final quarter of 2018, with metals prices down 6 per cent but food prices up 2 per cent. These movements have been largely reversed in the first quarter of this year, with metals up 7 per cent and food down by just under 1

per cent, giving an overall rise in the commodity price index of almost 3 per cent. Copper prices fell by around 4 per cent in the final quarter of last year, continuing the fall seen through the year. So far this year copper prices have risen by almost 9 per cent, though prices have changed little since late February.

Risks to the global forecast

The slowdown in Euro Area GDP growth and in the trade growth of China in late 2018 raise the risk that these events may not be temporary but may turn into a much more marked weakening. The view underpinning the central forecast is that these episodes can most likely be explained as transitory and that by the second half of 2019 growth will look stronger. But the potential for trade negotiations between the US and China to stall and the possibility of much higher US tariffs on German car imports raise the possibility that the current situation could develop into a 'trade war'. Our estimates of the effects of US tariffs already imposed, using our NiGEM model, indicate that the downside effects on global growth are limited and consistent with a small reduction in the pace of near-term growth, as in our forecast.[12] The possibility of further US tariffs and of possible retaliation adds a downside risk for the

Figure 6. Global GDP growth outlook expectation
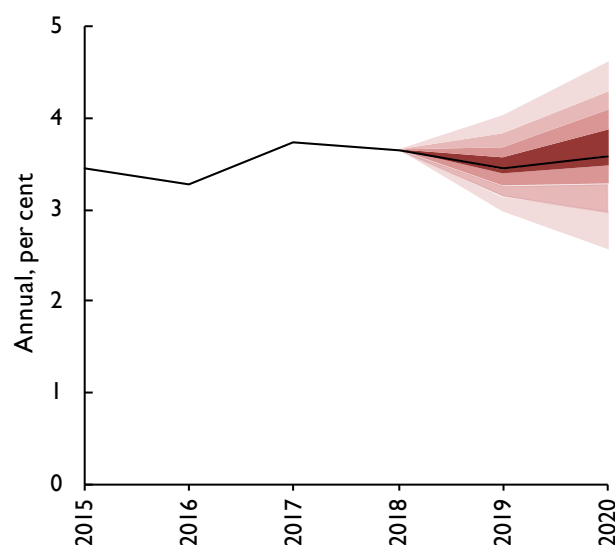
Source: NiGEM database, NIESR forecast and NiGEM stochastic simulations.
Notes: The fan chart is intended to represent the uncertainty around the central forecast shown by the central line. There is a 10 per cent chance that GDP growth in any particular year will lie in any given shaded segment in the chart. There is a 20 per cent chance that GDP growth will lie outside the shaded area of the fan.

prospects for both world trade and global economic growth.

Alongside the official measures showing slower activity growth, some measures of business sentiment have dipped, possibly reflecting an increased sense of nervousness about some of the risks materialising. In the Euro Area, Brexit forms one risk issue, with uncertainty and the timing and nature of the UK's exit still to be clarified. The US expansion phase has been long and the drop in the yield spread – previously a reliable indicator of a future recession – has attracted attention. The US government shutdown and the failure of the US-North Korea talks to advance, may also have played a role in acting as headwinds to confidence building. In terms of our forecast for global output growth, an indication of the extent of risks is illustrated in the fan chart for global economic growth shown in figure 6.

While risks emanating from the three major economies – China, Euro Area and US – tend to dominate the news, risks have crystallised in the past year in economies such as Argentina, Turkey and Venezuela. These have not caused wider spillover effects, perhaps because the causes have been largely internal or because the geographical spread of the economies that have experienced difficulties may have limited such effects via trade and finance. These events do act as a reminder that at a time of quite strong global performance, the experience is not universal. The experience of the late 1990s East Asian crisis highlights that what at first appear to be quite geographically limited effects could spread more widely.

In most advanced economies monetary policy has remained accommodative in the decade since the Great Recession. The US provides the clearest example of monetary policymakers trying to normalise policy in the expansion. The fall in oil prices in the latter half of last year is likely to keep inflation low and reduce the impetus to further tightening. The US may even start to reduce policy rates if the pace of economic growth falters, which would be expected to bolster growth in emerging economies too. While different economies would benefit by differing degrees, a 1 percentage point cut in US rates (relative to baseline) could boost GDP in Brazil by around 0.5 per cent, with a possibly larger boost to Argentina, depending on the extent to which investment premia and expectations change.[13] One risk is that the sustained period of growth and low interest rates may, in itself, have led to potential vulnerabilities that may be tested

by a downside shock (perhaps from equity markets seeing confidence drain away). Indeed, there may be issues about the extent to which monetary policy can now respond to a downside shock in some economies, especially where policy interest rates are at their effective lower bound, perhaps leading to a greater reliance on fiscal policy. Much has been made of the role of central bank independence in the operation of monetary policy. Recent news on proposed central bank nominations in the US, together with changes in India and Turkey, have raised independence as a potential issue, although, by contrast, in Brazil the central bank's President has supported the formal proposals for independence of the central bank.
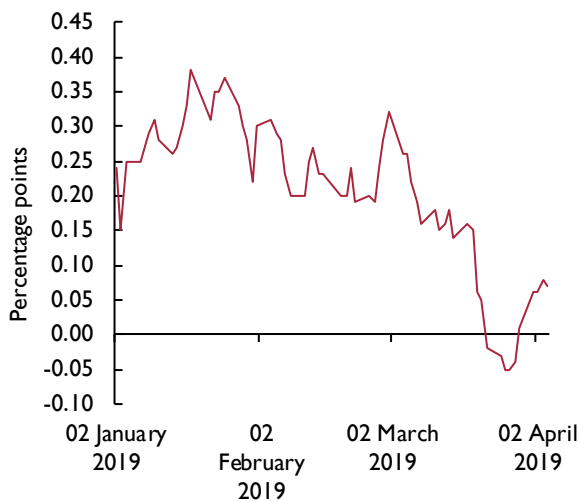
The potential downside risk to global economic prospects from the build-up of debt – in both public and private sectors – and the rise in house prices in several advanced economies has been discussed in previous issues of this *Review*.[14] As in the 2000s, higher debt can create a potential vulnerability and, after such a long period of ultra-low interest rates, one issue is that borrowers and lenders may have grown so accustomed to low debt service costs that even gradual and limited increases in interest rates could have more substantial negative effects on confidence and spending than usually anticipated. At the same time, with real house prices in a number of economies now back to their pre-recession levels after having risen strongly in the past six years, a downside shock that leads to higher unemployment may reveal a vulnerability that has been masked by the sustained period of ultra-low interest rates.

At a time when growth has slowed and some adverse signs have appeared, there are still possible upside risks to global economic activity. Relatively strong activity could return, especially with China having announced a fiscal stimulus and the US Federal Reserve seeming to have halted its upward march of US policy rates. Perhaps most importantly, the uncertainty that has resulted from the period of tariff and trade disputes could end if negotiations turn out better for global trade than seemed likely a year ago. Tighter labour markets in some economies raise the prospect of faster wage growth and stronger consumer spending growth as a result. If inflation is not affected, this would provide a boost to growth. The combination of the downside shock proving to be only temporary and a positive resolution to the tariff threats would reduce uncertainty and boost trade growth and support stronger global growth.

Box A. Is the US yield curve signalling that a recession is on the way?

Inversions of the yield curve have a good track record of predicting recessions (see Estrella and Mishkin, 1998; Chinn and Kucko, 2015). The 10-year to 3-month spread between US Treasury yields became briefly negative between 22 and 28 March 2019 (figure A1), spurring debate about whether this was signalling a forthcoming recession. The negative spread was mainly the result of a decrease of the 10-year yield – from 2.8 per cent on 1 March to 2.4 per cent on 26 March. A flat or inverted yield curve may be a signal from fixed income markets that short-term rates are too high for the current state of the economy and may risk tipping the economy into recession (Brainard, 2018). While our central forecast is not for a US recession, in this box we discuss the signal provided by the flattening of the yield curve and the possibility of this resulting from a more permanent shift that goes beyond the current business cycle.

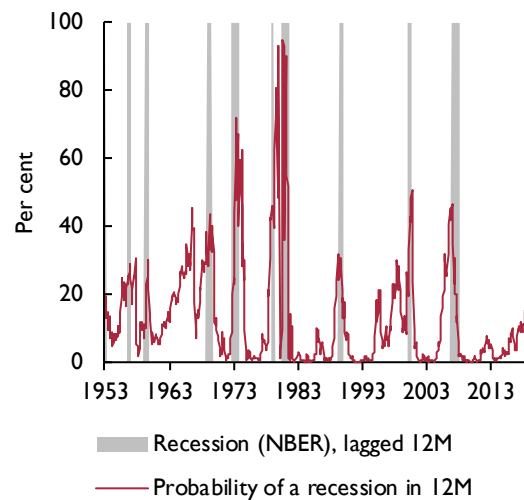### Figure A1. 10Y–3M US Treasury yield spread

Source: US Department of the Treasury.

Figure A2. Implied probability of a recession in 12M

Recession (NBER), lagged 12M

Probability of a recession in 12M

Source: NIESR calculations, NBER.
Note: Shaded regions represent recessions.

Following on our previous analysis (Lenoel, 2018), we have updated our metrics on the probability of a recession. The yield spread averaged 0.17 percentage points in March, which was about the same value as in January 2006, two years before the start of the Great Recession. Based on our estimation, the probability of a recession in 12 months implied by the 10-year to 3-month yield spread (thereafter simply called yield spread) stood at 31 per cent for the average spread during March 2019 (figure A2), significantly higher than the unconditional probability of 13 per cent.

The key issue is whether in current economic and financial conditions the yield spread is as informative as it used to be. It might be the case that asset purchases by the Federal Reserve have distorted the signal from the yield curve. Consistent with this, Bonis, Ihrig and Wei (2017) estimated that the three US quantitative easing programmes jointly reduced the 10-year Treasury yield by about 100 basis points by lowering the term premium. However, figure A3 shows that the reduction of the term premium has followed a much longer time trend, with the term premium estimated to have shrunk from about 2.5 per cent in the early 1990s to a negative value recently.

Figure A3. Term premium of the 10-year US Treasury
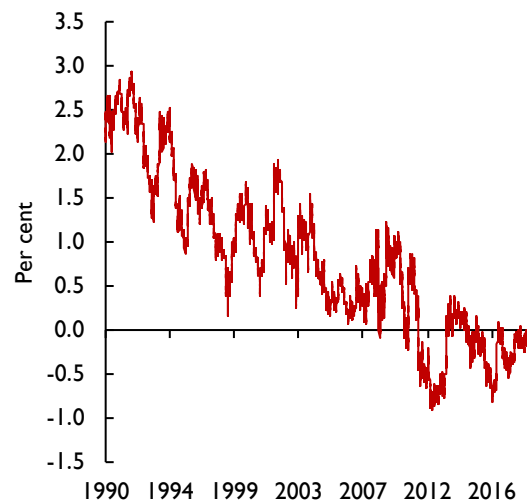
Source: Federal Reserve and Kim and Wright (2005).

Box A. (continued)

Figure A4 characterises the shifts in the yield curve during the past seven decades by separating periods of low or high yields and periods of low or high yield spreads. In the two decades after the Korean War, inflation was low and stable between 0 and 4 per cent. Both the 10-year yield and the yield spread were low; averaging respectively 4.3 per cent and 0.9 percentage points between 1953 and 1971. The 1970s and early 1980s were periods of rising inflation and inflation expectations fuelled in particular by the two oil crises of 1973 and 1979. The risk of persistently high inflation pushed the 10-year yield to a maximum of 15.3 per cent in 1981 and the Federal Reserve responded with an aggressive disinflation policy led by Chairman Paul Volcker (Goodfriend, 1995). While the fight against inflation was successful in bringing inflation below 4 per cent as soon as 1983, the term premium stayed elevated for a remarkably long period, which meant that the yield spread stayed relatively high, averaging 1.9 per cent between 1986 and 2016.
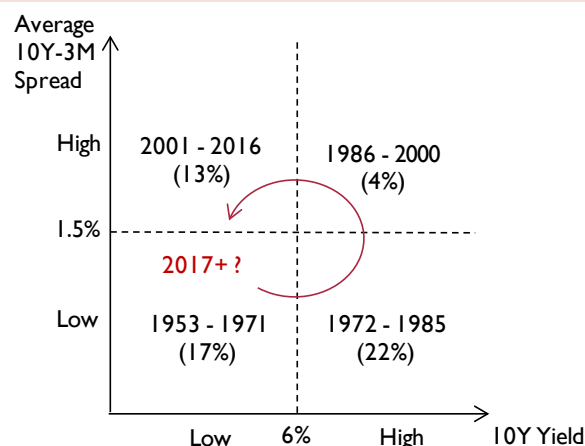
An inverted yield curve may signal a high risk of recession the following year as it has done successfully on several occasions in the past. But our forecast based on a wider range of economic data does not support this view (see figure 8 on page F46). A possible interpretation is that the relationship between yields and spreads may have shifted to a position represented by the lower left quadrant of figure A4 and characterised by 'low' yields and 'low' spreads, as was the case between 1953 and 1971. By lowering long-term yields, quantitative easing may have contributed to this possible shift. If we are indeed in a 'low' yield, 'low' spread environment, the yield spread may occasionally turn negative without signalling a recession, as it did in 1966.

Figure A4. Shifts in the US yield curve

Source: NIESR.
Note: 10Y yield is defined as low if the 4-year moving average is below 6%, high otherwise. Number in parentheses is the frequency of months in recession.

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Box B. Global monetary trends and economic prospects

This box describes the current indications of a forecasting approach that uses global monetary developments to anticipate economic swings. The approach is based on the 'monetarist' rule that turning points in real money momentum lead turning points in economic momentum, usually by between 6 and 12 months. Historical analysis providing empirical support for the rule was described in a box in the February 2018 *Review*. A narrow monetary aggregate, i.e. M1, was found to give more reliable signals than broader measures.

Figure B1 shows 6-month rates of change of industrial output and real narrow money for a 'global' grouping comprising the G7 major economies and 7 large emerging economies. Real money trends have consistently led swings in economic momentum in recent years. The average lead time at the highlighted troughs was 8 months; for comparison, analysis of G7-only data extending back to the 1960s found a mean 9-month lead across all momentum turning points (i.e. peaks as well as troughs).

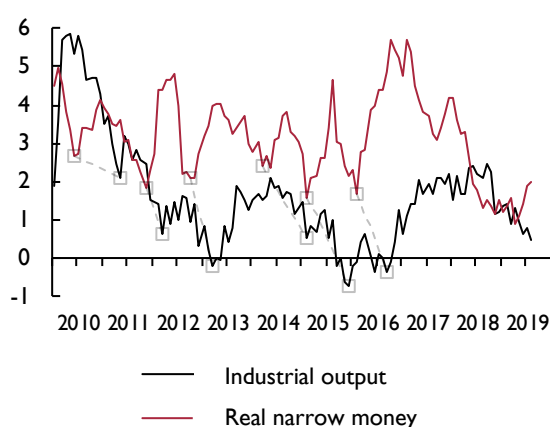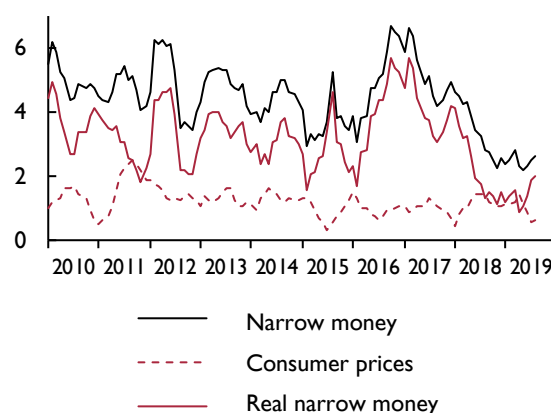Figure B1. G7+E7 industrial output and real narrow money (% 6M)

Figure B2. G7+E7 narrow money and consumer prices (% 6M)

As noted in the February 2018 *Review*, real money growth peaked in mid-2017 and fell sharply during the second half of that year. Allowing for the usual lead time, the assessment was that "global economic momentum will reach a peak in the first half of 2018 and decline in the second half". The latest data show that 6-month growth of G7+E7 industrial output peaked in March 2018 and had reached a 29-month low by December, with a further fall indicated in early 2019.

Real narrow money growth stabilised for several months after February 2018 but fell to a new low in October. The forecasting rule, therefore, suggests that industrial output momentum will remain weak during the first half of 2019, declining to a new low some time around mid-year.

The forecasting rule emphasises the direction rather than level of real money momentum. It may, however, be significant that, at the October 2018 low, real narrow money growth was the weakest since the 2008–9 recession and only slightly above the trough reached before the prior 2001 recession. The fall from the 2017 peak, moreover, was larger in magnitude and longer in duration than the declines preceding the 2011–12 and 2015–16 economic slowdowns. Current economic weakness, accordingly, may prove to be more pronounced and/or extended than those slowdowns.

Real money growth recovered between October 2018 and February 2019, suggesting improving economic prospects for late 2019. Money trends, however, are not yet giving a positive signal. The rise from the trough has been modest and the February level of real money growth – 2.0% – was lower than in all but 3 months between October 2008 and November 2017. A further increase to 3% or more may be needed to signal a return to trend economic expansion.

A further concern is that the recovery between October and February mainly reflected a slowdown in 6-month consumer price inflation, as weakness in oil and other commodity prices in late 2018 fed through to headline indices. Nominal money growth remained within its 2018 range – see figure B2. With commodity prices recovering in early 2019, the inflation decline may partially reverse into mid-year. Real money growth, therefore, may fall back unless nominal monetary trends strengthen.

The forecasting rule is informative for regions/countries as well as globally. US real narrow money stagnated in the year to November 2018, suggesting weak economic prospects for the first 3 quarters of 2019. Chinese growth bottomed in late 2018 but the recovery through February was modest, casting doubts on hopes of early, significant economic reacceleration. Narrow money trends, surprisingly, are currently relatively strong in the Eurozone, suggesting that economic weakness will abate barring external shocks.

This box was prepared by Simon Ward of NS Partners and Janus Henderson Investors