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Quarterly Economic Bulletin

Julian Hodge Institute of Applied Macroeconomics

HODGE BANK

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"...business is rightly assessing the post Brexit prospects. They know there will be more competition from world producers able to sell here at world prices once EU protection ends due to the trade agreements we will sign around the world- the main self-interested reason they opposed Brexit. They know too that they can respond to this with higher productivity in this digital age. As for their links with the EU, they can see that a UK-EU trade agreement makes sense for both sides. Yes, there will now be a border, but it must be a seamless one due to WTO rules."

Commercial Lending

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THE TRUMPET SOUNDS AN UNCERTAIN NOTE

According to the purchasing managers indices the UK economy is picking up quite sharply. The latest composite PMI has moved up to 53.3, after languishing before the election a bit below 50. This Boris Bounce is visible in other key surveys too, such as the latest CBI survey. The place where it remains invisible is in official forecasts, such as the Bank's recent one of 0.8% growth in 2020. This gloom is still shared by the private forecasting community, who remain downbeat about post-Brexit prospects.

Cognitive dissonance afflicts forecasters, private or official, just as it affects human beings generally. The economics forecasting profession was and remains opposed to Brexit, just like the civil service. The facts of the bounce they force into consistency with their pessimistic beliefs by implying that the business people surveyed have irrational views, and fail to appreciate the longer term damage Brexit will do.

But on the contrary business is rightly assessing the post Brexit prospects. They know there will be more competition from world producers able to sell here at world prices once EU protection ends due to the trade agreements we will sign around the world- the main self-interested reason they opposed Brexit. They know too that they can respond to this with higher productivity in this digital age. As for their links with the EU, they can see that a UK-EU trade agreement makes sense for both sides, so that trade with the EU will face no barriers. Yes, there will now be a border, but it must be a seamless one due to WTO rules.

Add to this the prospect of business-friendly regulation by a free market UK government and essentially free movement of skilled workers from all over the world under the new proposed points system. Even allowing for the endless human propensity to complain, what in all this is 'not to like'?

If they have read our critique of the official forecasts, businesses will know that the way officials reversed these positive prospects was by making absurdly pessimistic assumptions. So the future is both reasonably clear and bright.

Only one thing marred it until the recent Cabinet changes: the Chancellor seemed to have taken fright at these official forecasts and their public finance implications. He was talking about cuts to 'stay within his fiscal rules'.

In so doing he was falling into a trap being laid by his officials, who remain hostile to the Brexit project. By forecasting doom for the finances they are attempting to force the Chancellor into fiscal contraction which could make that doom self-fulfilling in the short term. As we have explained before, the proper fiscal rules relate to long term balance sheets and not to current budgets or borrowing; the Chancellor should look at the effects of his policies on the economy, public debt and revenue capacity in the long term. Given the growth-boosting changes the new policies will bring in, the long term outlook under expansionary budgets is solidly based.

Table 1: Summary of Forecast

	2017	2018	2019	2020	2021	2022	2023
GDP Growth[1]	1.8	1.4	1.3	1.9	1.9	2.1	2.1
Inflation CPI	2.6	2.5	1.7	1.9	2.0	2.0	2.0
Wage Growth	2.8	3.1	3.7	3.0	3.2	3.1	3.2
Unemployment (Mill.)[2]	0.8	0.9	0.9	0.8	0.7	0.7	0.7
Exchange Rate[3]	77.4	78.6	78.3	79.6	79.4	79.3	79.1
3 Month Interest Rate	0.4	0.7	0.8	1.1	1.9	2.4	3.1
5 Year Interest Rate	0.6	1.0	0.8	1.3	2.4	3.3	3.4
Current Balance (£bn)	-68.3	-81.3	-93.6	-42.0	-30.0	-20.5	-14.4
PSBR (£bn)	53.7	40.8	43.2	20.4	8.4	4.4	0.7

[1]Expenditure estimate at factor cost
[2]U.K. Wholly unemployed excluding school leavers (new basis)
[3]Sterling effective exchange rate, Bank of England Index (2005 = 100)

The Chancellor should take heart and think back to the last time a government was beleaguered by opposition from civil service, Bank, industry and economists- when Mrs. Thatcher was struggling to enforce her 'monetarist' cure of inflation in 1981. Geoffrey Howe and Nigel Lawson at the Treasury stood by her approach against that consensus that the policies would fail to cure inflation and instead produce a permanent recession. They did cure it- fast; and the economy was recovering strongly in 1982. Had the Chancellor then caved in to general opinion, history would have denied us our resurgence from being 'the sick man of Europe'.

Instead, the Chancellor closely coordinated policy with Mrs. Thatcher's No 10 economic strategy group led by Professor Alan Walters, whose careful economic thinking designed the policy moves.

The moral of this episode is that governments embarking on innovative policies that are widely opposed by a domestic consensus need to unite in backing them in a way that is consistent across departments. They need to show faith in their own strategies or they will be picked off by their surrounding enemies. They need also to think these strategies through with highly competent advisers at the heart of government.

The present government's trumpet sounds an uncertain note. As it embarks on an ambitious series of trade agreements, its very own Chancellor must not implicitly deny they will be successful. Rishi Sunak, the new Chancellor, and the government of which he is part, need to get their strategy clear and back it. Furthermore they need proper economic expertise at the heart of government in Nos 10 and 11.

Avoiding conventional prudence post-Brexit

No one can accuse the British people of opting for conventional prudence. They opted for Brexit, against a wave of advice from the mass of conventional economists not to do it because it would be imprudent to put the existing EU market relationships at risk. Instead they saw the point of reforging relationships around the world, while aiming to remain friends with EU neighbours. In this judgement the Brits got it right, just as they did when they opted for Mrs. Thatcher's reforms over the status quo of the 1970s- again the 'prudent' option prescribed to them by the establishment of that time, who feared Britain would be ungovernable without the continued pact with big firms and union barons under the 'social compact' of those times.

So, now that Brexit will happen, government policy needs to adapt to the new environment.

First, there will be the parallel negotiations over trade with the EU and the non-EU. If the EU has any sense it will try to offer reasonable terms for continued zero barriers, so as to persuade the Johnson government to negotiate rather less close relationships with the non-EU world. The government should not fall for this, as the major gains come from free trade with the non-EU. Prices here would then fall to world best levels, and the resulting competition will force not just home firms to greater efficiency but also force EU firms to drop prices here competitively. The ex-Remain lobby here will oppose this, wrongly again arguing for 'soft Brexit' deals. As we have said before, these would simply prolong the protectionist policies the EU have forced on us all these years. But then Remain is a neo-protectionist lobby, supporting high EU prices.

Second, there is the challenge of fiscal and monetary policy. It is vital that the Johnson government carries out a strong fiscal expansion that will boost the economy, and drive up interest rates, so that monetary policy can return to normal. We really need an end to emergency monetary loosening, which apart from losing effectiveness as a stimulus, is distorting our savings market against SMEs and small savers, in favour of large monopolies and government borrowers. We set out the background to the new fiscal and monetary situation in chapter 3 of this Bulletin.

How large would this fiscal stimulus need to be to raise interest rates to the required 5%? According to our models of developed economies, it takes around a 2% of GDP stimulus to government spending to raise interest rates by 1% per annum. That is about £80 billion a year. If we assume that interest rates should rise otherwise by 2%, then to raise interest rates to 5% p.a. a big expansion is needed- of around £100 billion a year. This is approximately the size of the programme we have called Fiscal-Fund-Reform, in which taxcuts and spending cuts reach £100 billion a year by the mid-2020s- we set it out in our last Quarterly Bulletin, November 2019. This would be extremely safe from a solvency view point, pushing the market value of government debt to 55% of GDP by 2027, and allowing further taxcuts in that year consistently with a constant debt ratio from then on. According to our latest calculations, this would push interest rates up to around 5%.

Here are both the Baseline projection on existing plans and the projection with the Reform-Plus programme.

Table 2: Forecast summary of post-Brexit Baseline

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GDP Growth[1]	1.4	1.5	1.9	1.9	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.0
Inflation CPI	2.5	1.9	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Wage Growth	3.1	3.6	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.3	3.4	3.3	3.2
Unemployment (Mill.)[2]	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Exchange Rate[3]	78.6	80.1	80.7	80.6	80.5	80.4	80.3	80.2	80.1	79.9	79.8	79.7	79.5
3 Month Interest Rate	0.7	0.9	1.1	1.9	2.4	3.1	3.1	2.6	2.3	2.0	2.0	2.0	2.0
5 Year Interest Rate	1.0	1.0	1.3	2.4	3.3	3.4	3.3	2.6	2.4	2.2	2.0	2.0	2.0
Current Balance (£bn)	-81.3	-86.5	-41.3	-31.4	-23.3	-15.0	-11.9	-11.3	-14.5	-9.4	-59.	-0.1	3.0
PSBR (£bn)	40.8	37.8	20.7	8.2	3.9	0.5	-3.2	-5.4	-17.4	-30.2	-45.1	-58.6	-71.9

Table 3: Forecast summary for Fiscal-Fund-Plus

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GDP Growth[1]	1.4	1.5	2.7	3.1	3.2	3.1	3.0	3.0	3.0	3.1	3.1	3.1	3.3
Inflation CPI	2.5	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1
Wage Growth	3.1	3.6	3.5	3.7	3.7	3.8	3.8	3.9	3.9	3.8	3.9	3.8	3.8
Unemployment (Mill.)[2]	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Exchange Rate[3]	78.6	80.1	80.6	80.5	80.4	80.3	80.3	80.2	80.1	80.1	80.0	79.9	79.9
3 Month Interest Rate	0.7	0.9	3.7	4.6	5.0	5.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5 Year Interest Rate	1.0	1.0	4.3	4.9	5.3	5.3	5.1	5.0	5.0	5.0	5.0	5.0	5.0
Current Balance (£bn)	-81.3	-84.1	-35.3	-26.6	-22.3	-13.2	-9.8	-8.9	-11.9	-5.9	-1.7	4.3	7.6
PSBR (£bn)	40.8	40.6	52.4	40.9	39.8	39.9	42.4	50.9	46.9	40.6	35.0	29.0	19.9

[1] Expenditure estimate at factor cost
[2] U.K. Wholly unemployed excluding school leavers (new basis)
[3] Sterling effective exchange rate, Bank of England Index (2005 = 100)

The menace of Labour's economic programme

As we have explained, there is a need for a fiscal expansion to push interest rates up off the Zero Lower Bound and liberate monetary policy to be effective again. It looks as if the Johnson government will take this idea to heart; and that Rishi Sunak will introduce a stimulatory Budget on March 11th. The Conservative Election Manifesto was extremely cautious, not suggesting more than minor fiscal stimulus, with little in the way of much needed taxcuts. However, this caution was inspired by politics and in particular the need to show up the Labour Election Manifesto programme for what it was: a reckless fiscal splurge, including large tax rises on the 'rich' and a massive 20% employer's tax in the form of an imposed 4-day week. This massive threat to the economy remains in the form of continued Labour proposals, as underlined by the current Labour leadership election, in which several of the leading candidates, such as Rebecca Long-Bailey, fully stand by previous Labour economic policies, enunciated by Jeremy Corbyn and his team.

These Labour plans call for a massive overturning of the UK's business environment. As our variant forecast below makes clear, these would have created a UK economic catastrophe. Though these plans were rejected in the December election, the fact that Labour leader hopefuls still espouse them means that we should examine the threat of them still.

If, as we have argued, a programme of heavier future spending/taxcuts is safe, would it not then have been equally safe for Labour to go ahead with its much bigger planned programme of higher spending?

If the economy were to remain robust and continue to grow as projected under the Labour programme, then the mere fact of it borrowing large amounts could potentially be absorbed safely according to the arguments we have deployed. Thus we have projected the Fiscal-Fund-plus addition to the PSBR compared with the no-change baseline at a cumulative £500 billion by 2027. Were Labour to do the same, with the same accompanying policies, there would be no problem.

The difficulties with the Labour programme come from two damaging elements. The first and most problematic is that the 'accompanying policies' are highly damaging to growth, via effects on the economy's supply side. Labour has said it would raise income tax rates on 'the rich'; these would damage growth for just the same reasons we will argue that Fiscal-Fund-plus taxcuts would raise growth. In fact these higher rate tax rates raise little if any money; so that income tax rates at large (or similar taxes on consumption) will need to rise. Also, Labour has suggested it would not pay full market value to shareholders and landlords whose property it nationalised (nationalisation was extended to BT OpenReach in a bid to spread free broadband); such a wealth tax would undermine the confidence of investors and act like other taxes in lowering growth.

On the Brexit side of policy Labour would have negotiated effectively not to have Brexit- either with its proposed deal to stay in the EU in all but name or with its referendum alternative of straight Remain. This would have implied a supply-side hit to the economy compared with our post-Brexit projection. This is without counting the effects of more prolonged uncertainty on the economy.

Then there is the proposal for a four day week, which again would reduce output, by about a fifth (the equivalent of a 20% tax on employment) unless the government paid workers an over-time subsidy, requiring yet more income taxes. On top of it all, Labour proposes to bring back the union laws abolished by Mrs.Thatcher, returning our industrial relations to 1970s chaos ; we have not added in the effects of this, which on its own would cause massive supply-side damage.

There is much else in the fine print of Labour's programme which openly plans to replace the 'capitalist' economy we have with one of overwhelming state ownership and direction. This explicit model of state planning has been widely experimented with in other countries : Russia, Cuba and Venezuela are three prominent examples. The results have obviously been disastrous.

So Labour's programme threatens growth directly. That is its fundamental flaw. As for its borrowing plans, it appears to plan to borrow massively for an infrastructure programme of about £100 billion a year, about £55 billion above the baseline. Cumulatively by 2027 this would come to an extra £440 billion on the baseline. On non-infrastructure spending it plans to fund the extra with the tax rises just mentioned, with their consequential damage to growth.

The Labour programme's effect on growth also seriously undermines projected ongoing tax revenue from 2027,

Table 4: Forecast summary for Labour Manifesto

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GDP Growth[1]	1.4	1.5	-0.2	-0.2	-0.1	0.0	-0.1	-0.2	0.0	-0.2	0.2	0.1	0.1
Inflation CPI	2.5	1.9	4.9	5.2	5.2	4.8	5.1	4.9	4.9	4.8	4.7	4.7	4.7
Wage Growth	3.1	3.6	3.8	5.8	6.3	6.0	6.3	6.1	6.2	6.1	6.0	6.1	6.0
Unemployment (Mill.)[2]	0.9	1.0	1.0	1.3	1.5	1.9	2.3	2.8	3.4	4.1	5.1	6.2	7.5
Exchange Rate[3]	78.6	80.1	69.6	66.8	64.5	62.5	60.4	58.6	57.0	55.5	54.0	52.7	51.4
3 Month Interest Rate	0.7	0.9	4.9	5.2	4.6	4.8	4.7	4.7	4.7	4.9	4.9	4.9	4.9
5 Year Interest Rate	1.0	1.0	5.0	5.0	5.1	4.9	4.9	4.7	4.8	4.8	4.8	4.8	4.8
Current Balance (£bn)	-81.3	-86.6	-12.2	-1.1	4.1	8.9	12.0	14.7	12.8	19.4	23.6	27.8	31.6
PSBR (£bn)	40.8	47.4	59.5	70.5	92.8	121.7	154.5	199.2	234.0	275.9	319.3	369.5	424.8

[1] Expenditure estimate at factor cost
[2] U.K. Wholly unemployed excluding school leavers (new basis)
[3] Sterling effective exchange rate, Bank of England Index (2005 = 100)

causing a need for yet more new taxes, which must undermine confidence in its ability to remain solvent.

But in the short run it would have removed the Zero Lower Bound issue rapidly. Sterling would have collapsed, sending inflation up sharply and causing a large outflow from the gilts market, with fears of future UK government insolvency from the fall in future revenues. Long term and short term interest rates would have risen sharply. However, monetary policy would be unable to stimulate the economy by lowering rates because of the effects on inflation. So this would be an expensive 'cure' of the ZLB problem, ushering in a monetary policy as fettered as before but in a different way.

The implications of this rapid rise in interest rates is radical. It means that Labour would enjoy a quick fall in the capital value of outstanding debt, when the rate rise came in, but that it would then pay higher interest rates for all its new debt. This is what we project for the long term balance sheet

The long-run Labour public sector balance sheet

Fiscal changes under Labour plans

Extra spending on infrastructure to be borrowed : £55billion p.a.

Extra income taxes to pay for other spending: c. £80billion p.a. (5% rise in top income tax rate and 7% rise in Corporation Tax rate, to pay for this)- effect on output by 2027= -6%, on top of fall of 7% due abandoning Brexit; add effect of 32-hour working week (an effective employer tax of 20%),-10% ; Total-23%. Add back the positive effect of the higher infrastructure spend on growth (assume equivalent of taxcut to same value p.a., viz c 10%); gives offsetting gain to growth of +5%. Net total= -17% (-2.1% pa off growth)

Note that for this projection, we make the most favourable possible assumptions about Labour manifesto commitments, namely that the taxes it proposes to raise (the 'basic top'income tax rate from 40 to 45% ; and the corporation tax rate from 19% to 26%) are sufficient in their yield to fund its non-infrastructure commitments to spend more, which are set at £80 billion per year. The key effects projected are on GDP, from these tax rises and the 32-hour week (equivalent to an employer tax rise of 20%); of course these in turn lower the revenues from existing taxes in general. In the Liverpool Model, used to estimate the effects of the Thatcher tax changes in the 1980s, a 2% rise in the income tax rate produces a 1% fall in output long term.

Balance sheet by 2027 under Labour

- Debt (net of capital gain in 2020 of 490): + £1500 billion
- GDP by 2027: - 17% (compared with post-Brexit baseline)
- Debt/GDP ratio 2027: 90%.
- Future spending incl debt interest, % of GDP: 53
- Effect on future tax revenues of lower growth: -22% (compared with post-Brexit baseline)
- Future tax revenues, % of GDP= 45 (post-tax rises)x0.93(fall of revenue/GDP due to lower growth)=42.
- Required future tax rise=220x.05=11% of GDP.
- Fiscal gap (%of GDP) in present value=(11/0.05))=-220% (approx. £4.4 trillion at today's prices).

Different policy programmes examined

We also summarise the two other potential outlooks post-Brexit that we have reviewed in our last Bulletin:

1) The Conservative manifesto: here we take the manifesto's projections for fiscal policy literally and project their effects on growth, the public finances, inflation and interest rates, adding them to the baseline, where we assume the same Brexit policies are carried out.

2) Fiscal-Fund-plus: here we consider the post-election follow-up policies that build on the supply-side reform possibilities opened up by Brexit and that we would advocate, as explained above.

Comparative Charts and Tables

The charts below show the key features of each forecast scenario. Essentially, the Conservative manifesto follows the baseline, apart from increased capital spending which is financed by extra borrowing. This has limited effects, simply raising debt in 2027 by about 5% of GDP.

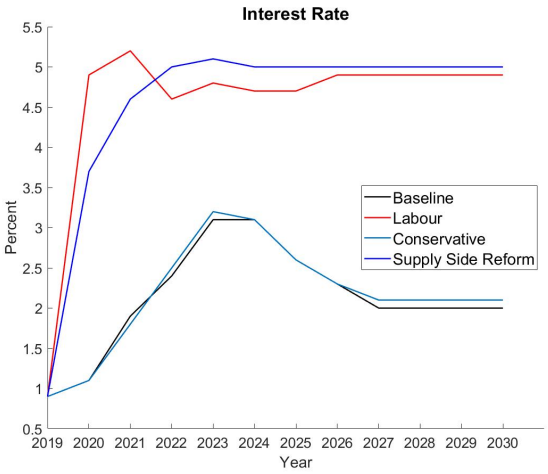
The Labour manifesto, detailed above, implies substantial damage to the supply-side and so to growth. Confidence in the UK government's solvency is greatly reduced by this hit to growth and so to public revenues. Unemployment rises sharply as employment growth basically ceases. Because of the rise in long term interest rates, the government gets a capital gain on previously issued debt which limits the rise in the terminal debt ratio but even so it rises greatly and in spite of large tax rises a lot more tax would be required in 2027.

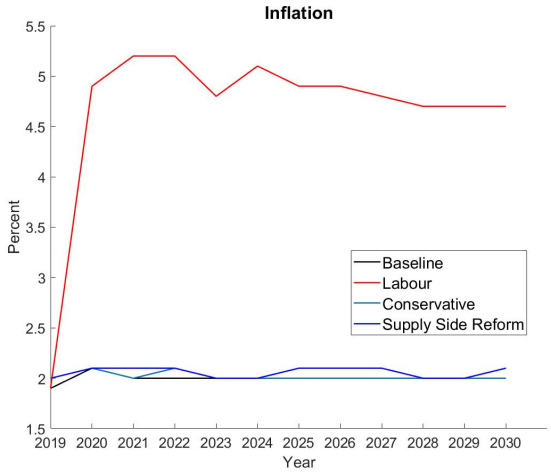
The supply-side reform programme, Fiscal-Fund-plus, case raises growth by increasing business incentives via taxcuts and improved infrastructure. Extra borrowing drives up interest rates to around 5% by the mid 2020s, ending the Zero Lower Bound finally, so that monetary policy can be effective again. Because of the rise in long term interest rates, the government gets a capital gain on its previously issued debt which limits the rise in the terminal debt ratio.

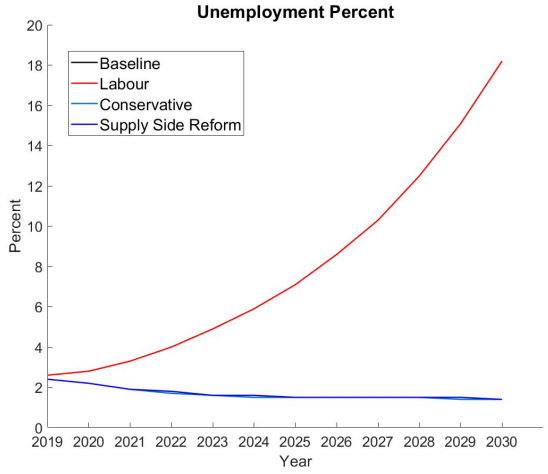
Terminal public sector balance sheets for each forecast-values projected 2027

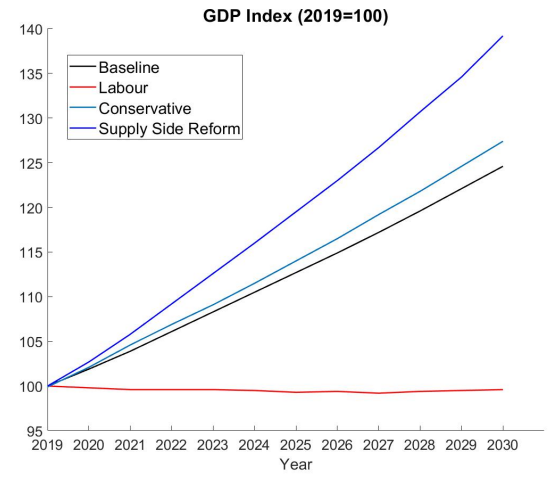
	Baseline	Cons.	Lab.	Reform
Debt[†]/GDP ratio (%)	50.7	62.6	90	55
Ongoing 2027 spending and revenue:				
Govt. Spending (inc. debt interest)/GDP	40	40	53	40
Ongoing Tax Revenue/GDP (%)	40	40	42	41
Required Future Tax Rise/GDP (%)	0	0	11	-1

[†]Debt valued after effect of long term interest rates on capital value









THE UK ECONOMY

Vo Phuong Mai Le

The growth of the UK economy stalled in the last quarter of 2019 recording zero growth following 0.5% in Q3. Strong foreign demand offset a fall in domestic demand. Net trade remained resilient as exports continued rising (4.1% after 5.9% in Q3) and imports declined (-0.2% after 0.7% in Q3). Private consumption continued to rise, but at a slower pace. It rose only 0.1% compared to 0.4% in Q3 and 0.5% in Q2. This was offset by a sharp decrease in gross capital formation, -1.6% after rising at 0.3% in Q3.

On the production side, a negative contribution came from industrial production (-0.8% following -0.1% in Q3) as manufacturing and mining and quarrying decreased sharply (respectively -1.1% compared to -0.2% in Q3 and -2.8% compared to 1.7% in Q3). Although services and construction sectors contributed positively to the quarterly growth, their growth was at a slower pace. Services output rose 0.11% (after 0.5% in Q3) and construction rose 0.5% (compared to 1.1% in Q3).

Labour market, costs and prices

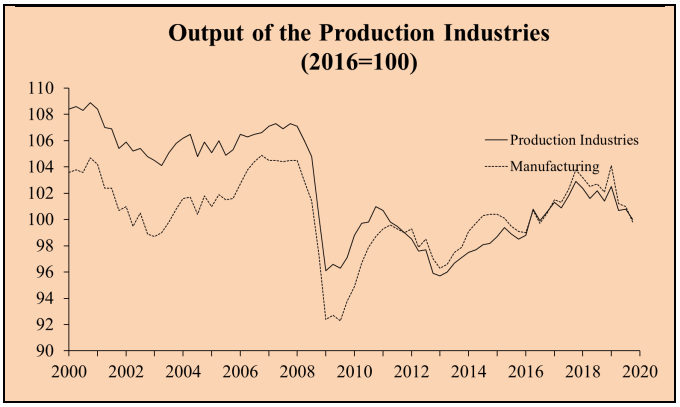
The labour market remained strong, essentially at full employment. The employment rate was at a record of 76.3% in the 3 months between September and November, 0.5% higher than the previous quarter. For the same period, the unemployment rate was 3.8%, unchanged from the previous quarter. As the market continued to tighten, wages kept increasing in real terms. The annual growth in average weekly earnings excluding bonus was 3.4% following 3.5% in the previous quarter.

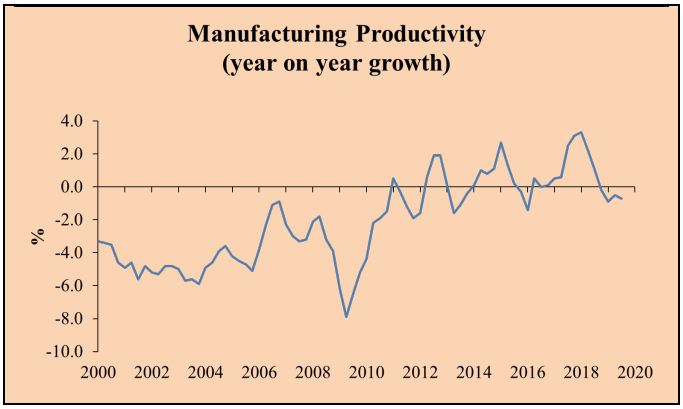
The annual CPI inflation rate remained below the 2% target. It increased to 1.8% in January from 1.3% in December. This rise was driven by an increase in fuel and energy costs (0.55% compared to 0.19% in December). Core inflation also contributed. It rose to 1.6% up from 1.4% in December. Input price annual inflation rose to 2.1% in January from December's 0.9%. Output price annual inflation for all manufactured products was 1.1% compared to 0.9% in December.

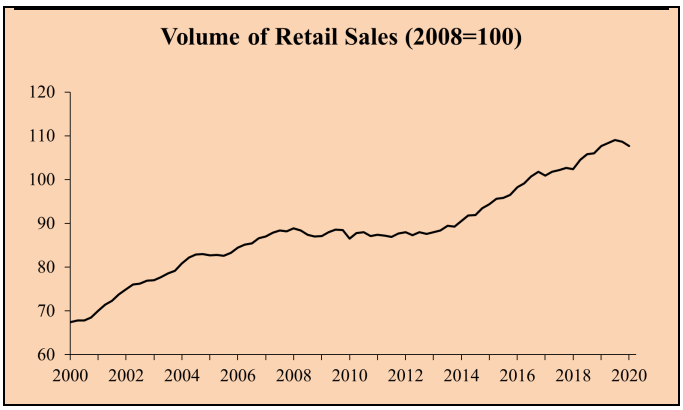
Fiscal and Monetary Developments

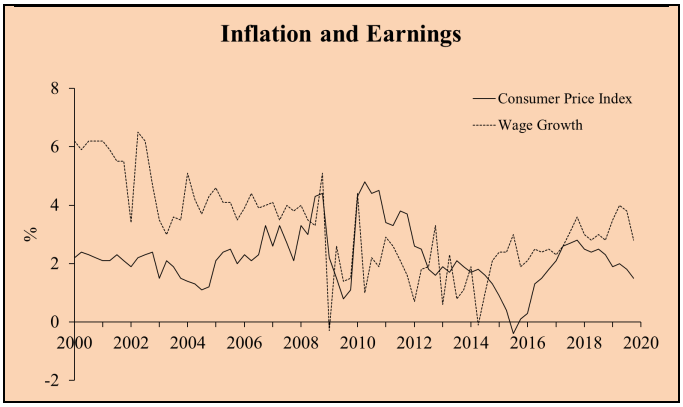
With austerity now ended, the government has borrowed more than in the previous fiscal year. In the fiscal year to January 2020 the public sector borrowed £44.8 billion, compared to £39 billion in the same period last year. Given more borrowing, the public debt has also risen slightly. Public debt as a percentage of GDP was 72% at the end of January 2020, up a bit from 71.8% on January 2019.

The annual growth rate of broad money M4 lending excluding deposits of other financial intermediary

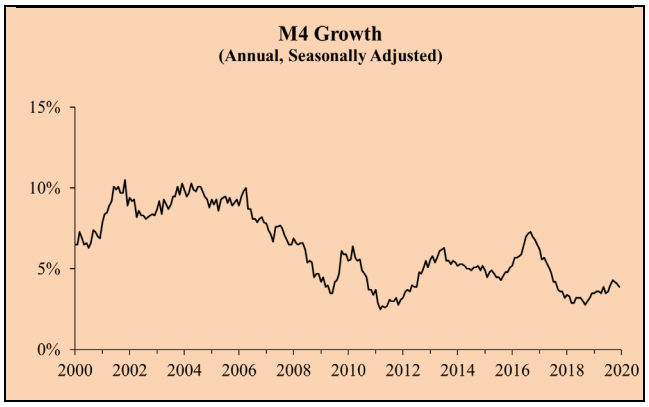


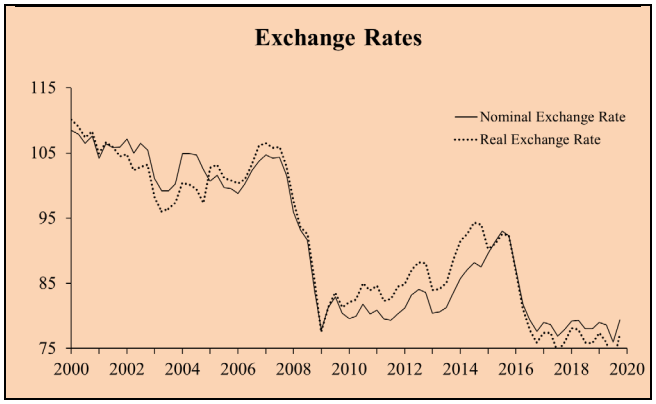


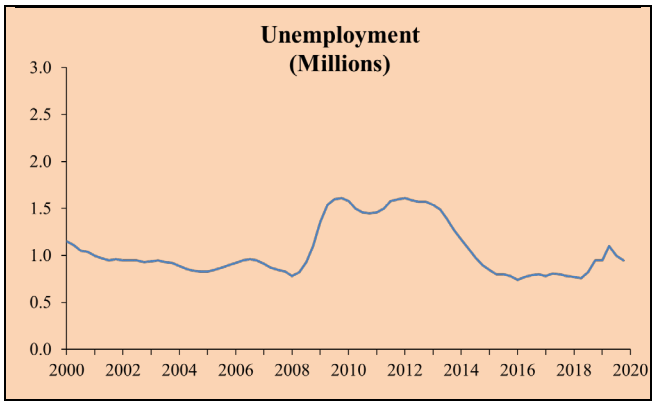


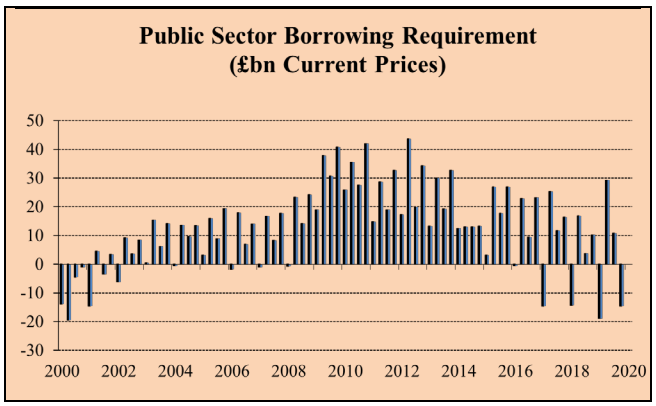


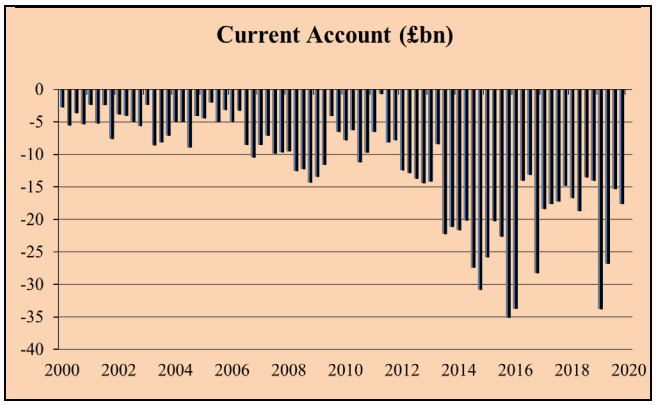
corporations - credit growth rate - decreased to 4.4% in December from 4.7% in November. In the January meeting, the Bank of England decided to maintain its accommodative policy, keeping the bank rate at 0.75% and leaving the stock of corporate and government bond purchases unchanged. It indicated that if the GDP growth rate fails to pick up, interest rates could fall in the future.











UK FORECAST DETAIL

Prices, Wages, Interest Rates and Exchange Rate Forecast (Seasonally Adjusted)

	Inflation %[1] (CPI)	Short Dated (5 Year) Interest Rates	3 Month Int. Rates	Nominal Exchange Rate (2005=100)[2]	Real Exchange Rate[3]	Real 3 Month Int. Rates %[4]	Inflation (RPIX)	Real Short Dated Rate of Interest[5]
2018	2.5	1.0	0.7	78.6	76.9	-1.3	3.3	-1.0
2019	1.7	0.8	0.8	78.3	75.9	-0.9	2.5	-1.0
2020	1.9	1.3	1.1	79.6	78.0	-1.1	2.6	-0.7
2021	2.0	2.4	1.9	79.4	78.2	-1.0	2.8	0.5
2022	2.0	3.3	2.4	79.3	78.4	0.1	2.8	1.3
2023	2.0	3.4	3.1	79.1	78.6	1.0	2.7	1.4
2018:1	2.5	1.0	0.5	79.2	78.1	-1.6	3.7	-1.3
2018:2	2.5	1.0	0.7	79.3	77.9	-1.9	3.4	-1.2
2018:3	2.5	1.0	0.8	78.0	75.9	-1.3	3.2	-1.0
2018:4	2.3	1.0	0.8	78.0	75.8	-0.7	3.0	-0.8
2019:1	1.8	0.9	0.9	79.0	77.4	-0.5	2.4	-0.9
2019:2	2.0	0.7	0.8	78.6	76.0	-0.5	3.0	-1.1
2019:3	1.8	0.4	0.8	76.0	72.7	-1.4	3.0	-1.4
2019:4	1.5	1.1	0.8	79.4	77.4	-1.3	1.8	-0.8
2020:1	1.8	1.1	1.0	79.7	78.1	-1.0	2.4	-0.9
2020:2	1.9	1.2	1.1	79.7	78.0	-1.0	2.6	-0.8
2020:3	2.0	1.3	1.1	79.6	77.9	-1.0	2.7	-0.7
2020:4	2.0	1.7	1.2	79.3	77.8	-1.5	2.8	-0.3
2021:1	2.1	2.3	1.8	79.4	78.3	-0.8	2.9	0.3
2021:2	2.0	2.5	1.9	79.6	78.3	-0.9	2.7	0.5
2021:3	2.0	2.4	2.0	79.4	78.1	-1.2	2.7	0.4
2021:4	2.0	2.5	2.0	79.2	78.0	-1.0	2.8	0.5
2022:1	1.9	2.9	2.1	79.4	78.5	-0.9	2.6	0.9
2022:2	2.0	2.9	2.1	79.5	78.5	-0.3	2.8	0.9
2022:3	2.0	3.7	2.1	79.3	78.4	0.1	2.8	1.7
2022:4	2.1	3.8	3.3	78.9	78.3	1.4	2.9	1.8
2023:1	2.0	3.5	3.2	79.2	78.8	1.1	2.8	1.5
2023:2	1.9	3.4	3.0	79.4	78.7	0.9	2.6	1.4
2023:3	2.0	3.4	3.0	79.1	78.6	0.9	2.8	1.4
2023:4	2.0	3.3	3.2	78.8	78.5	1.2	2.8	1.3

[1] Consumer's Expenditure Deflator
[2] Sterling Effective Exchange Rate Bank of England
[3] Ratio of UK to other OECD consumer prices adjusted for nominal exchange rate
[4] Treasury Bill Rate less one year forecast of inflation
[5] Short Dated 5 Year Interest Rate less average of predicted 5 year ahead inflation rate

Labour Market and Supply Factors (Seasonally Adjusted)

	Average Earnings (1990=100)[1]	Wage Growth[2]	Unemployment (Labour Survey) Percent[3]	Millions (on unemployment benefits)	Real Wage Rate[4] (1990=100)
2018	266.6	3.1	4.1	0.9	142.8
2019	275.7	3.7	3.9	0.9	145.2
2020	284.4	3.0	3.4	0.8	146.7
2021	293.2	3.2	3.3	0.7	148.4
2022	302.3	3.1	3.1	0.7	150.0
2023	302.3	3.2	2.9	0.7	150.0
2018:1	264.6	3.0	4.0	0.8	142.6
2018:2	263.4	2.8	4.1	0.9	141.5
2018:3	268.0	3.0	4.1	0.9	143.2
2018:4	270.2	3.8	4.1	1.0	144.0
2019:1	273.4	3.6	4.1	1.0	145.1
2019:2	273.5	4.4	4.2	1.1	144.9
2019:3	275.5	3.8	4.1	1.1	146.2
2019:4	277.8	2.8	3.4	0.8	145.9
2020:1	281.4	2.9	3.4	0.8	146.7
2020:2	281.7	3.0	3.4	0.8	146.5
2020:3	284.1	3.1	3.5	0.9	147.8
2020:4	286.4	3.1	3.4	0.8	147.5
2021:1	290.4	3.2	3.3	0.8	148.4
2021:2	290.8	3.2	3.3	0.8	148.3
2021:3	293.2	3.2	3.2	0.8	149.5
2021:4	295.1	3.0	3.2	0.8	149.0
2022:1	299.4	3.1	3.1	0.7	150.1
2022:2	299.6	3.0	3.1	0.7	149.8
2022:3	302.4	3.1	3.0	0.7	151.2
2022:4	304.8	3.3	3.0	0.7	150.8
2023:1	309.8	3.5	2.9	0.7	152.3
2023:2	309.5	3.3	2.9	0.7	151.9
2023:3	311.9	3.1	2.9	0.7	152.9
2023:4	314.0	3.0	2.8	0.6	152.3

[1] Whole Economy
[2] Average Earnings
[3] Wholly unemployed excluding school leavers as percentage of employed and unemployed, self employed and HM Forces
[4] Wage rate deflated by CPI

Labour Market and Supply Factors (Seasonally Adjusted)

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2020:2	281.7	3.0	3.4	0.8	146.5
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2020:4	286.4	3.1	3.4	0.8	147.5
2021:1	290.4	3.2	3.3	0.8	148.4
2021:2	290.8	3.2	3.3	0.8	148.3
2021:3	293.2	3.2	3.2	0.8	149.5
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[1] Whole Economy
[2] Average Earnings
[3] Wholly unemployed excluding school leavers as percentage of employed and unemployed, self employed and HM Forces
[4] Wage rate deflated by CPI

Estimates and Projections of the Gross Domestic Product[1] (£ Million 1990 Prices)

	Expenditure Index	£ Million '90 prices	Non-Durable Consumption[2]	Private Sector Gross Investment Expenditure[3]	Public Authority Expenditure[4]	Net Exports[5]	AFC
2018	165.5	792730.9	445721.1	307723.0	201029.6	-41308.9	120433.9
2019	167.7	803124.4	449022.2	304863.6	205398.3	-62992.2	93167.5
2020	170.9	818311.1	455103.9	281835.4	206630.2	-38598.5	86659.9
2021	174.1	833868.2	461476.0	285538.7	207867.7	-32824.5	88189.7
2022	177.7	850987.6	467475.5	293108.1	209117.4	-29127.6	89585.8
2023	181.5	869067.2	474018.9	302863.7	210372.5	-26816.7	91371.2
2018/17	1.4		1.0	2.3	0.2		-4.6
2019/18	1.3		0.7	-0.7	2.2		-12.3
2020/19	1.9		1.4	-7.1	0.6		4.1
2021/20	1.9		1.4	1.3	0.6		1.5
2022/21	2.1		1.3	2.7	0.6		1.8
2023/22	2.1		1.4	3.3	0.6		2.1
2018:1	164.4	196809.2	110809.6	74693.2	51591.3	-10814.1	29470.8
2018:2	165.1	197627.5	111248.1	77339.0	49253.6	-10094.0	30119.2
2018:3	166.1	198830.2	112094.9	75498.8	49822.6	-10001.3	28584.8
2018:4	166.6	199464.1	111568.4	80192.1	50362.1	-10399.5	32259.0
2019:1	167.5	200481.1	111589.5	83278.3	52683.0	-28452.8	18616.9
2019:2	167.1	200109.6	112220.4	81082.1	50775.9	-13738.5	30230.3
2019:3	167.8	200943.7	113062.0	72473.6	51076.1	-12057.3	23610.7
2019:4	168.4	201589.9	112150.2	68029.5	50863.3	-8743.5	20709.6
2020:1	170.1	203686.3	113060.8	75399.9	52998.5	-16219.9	21553.0
2020:2	170.6	204201.6	113679.3	67657.8	51080.7	-6510.3	21705.9
2020:3	170.9	204663.9	114754.0	70484.3	51382.5	-10284.7	21672.2
2020:4	171.9	205759.3	113609.8	68293.5	51168.4	-5583.6	21728.8
2021:1	173.0	207130.3	114529.7	77069.6	53314.3	-15585.6	22197.7
2021:2	174.0	208357.8	115270.8	68889.7	51387.1	-5257.5	21932.3
2021:3	174.4	208747.2	116475.2	70503.5	51690.8	-7856.1	22066.2
2021:4	175.1	209632.9	115200.4	69075.9	51475.5	-4125.3	21993.6
2022:1	176.8	211682.7	116019.6	78703.0	53636.4	-14336.0	22340.3
2022:2	177.5	212476.9	116884.5	70385.0	51695.6	-4207.0	22281.2
2022:3	177.9	212945.9	117873.0	72333.6	52001.0	-6870.6	22391.1
2022:4	178.6	213882.2	116698.4	71686.4	51784.4	-3714.1	22572.9
2023:1	180.5	216146.7	117644.1	81047.0	53958.8	-13805.0	22698.2
2023:2	181.3	217022.9	118637.8	72560.3	52005.7	-3365.1	22815.8
2023:3	181.6	217463.4	119405.3	75303.5	52313.0	-6676.5	22881.9
2023:4	182.4	218434.3	118331.7	73952.9	52095.0	-2970.1	22975.2

[1] GDP at factor cost. Expenditure measure; seasonally adjusted
[2] Consumers expenditure less expenditure on durables and housing
[3] Private gross domestic capital formation plus household expenditure on durables and clothing plus private sector stock building
[4] General government current and capital expenditure including stock building
[5] Exports of goods and services less imports of goods and services

Financial Forecast

	PSBR/GDP %[1]	GDP[1] (£bn)	PSBR (£bn) Financial Year	Debt Interest (£bn)	Current Account (£ bn)
2018	1.9	2092.4	40.8	23.4	-81.3
2019	2.0	2145.4	43.2	25.5	-93.6
2020	0.9	2224.4	20.4	28.0	-42.0
2021	0.3	2315.2	8.4	31.4	-30.0
2022	0.2	2411.0	4.4	35.0	-20.5
2023	0.0	2512.4	0.7	37.0	-14.4
2018:1	-2.9	520.8	-14.9	4.9	-17.7
2018:2	4.7	521.1	24.6	5.7	-19.9
2018:3	1.8	523.1	9.5	5.7	-20.5
2018:4	4.8	528.2	25.6	5.7	-23.1
2019:1	-3.6	520.1	-18.8	6.3	-33.8
2019:2	5.5	532.3	29.4	6.3	-26.8
2019:3	2.0	531.3	10.9	6.3	-15.3
2019:4	-2.7	537.5	-14.5	6.3	-17.6
2020:1	3.2	544.3	17.4	6.6	-8.4
2020:2	0.5	548.8	2.6	6.7	-11.6
2020:3	-0.6	552.5	-3.3	6.7	-10.9
2020:4	-0.9	558.7	-4.9	6.9	-11.1
2021:1	4.6	564.4	26.0	7.6	-7.1
2021:2	-0.1	570.7	-0.3	7.7	-9.2
2021:3	-1.0	574.5	-6.0	7.8	-5.8
2021:4	-1.3	580.9	-7.8	7.8	-7.9
2022:1	3.8	589.1	22.4	8.1	-3.8
2022:2	1.0	593.7	6.2	8.1	-6.5
2022:3	1.1	598.1	6.6	8.2	-3.3
2022:4	-2.9	604.5	-17.3	9.3	-6.9
2023:1	1.5	614.6	9.0	9.3	-2.3
2023:2	-0.5	618.0	-3.1	9.1	-4.5
2023:3	-0.5	623.1	-2.9	9.1	-2.5
2023:4	0.0	630.7	-0.2	9.4	-5.1

[1] GDP at market prices (Financial Year)

US

Economic growth was steady at the end of 2019. Real GDP rose 0.5% in Q4, the same rate as in Q3. The biggest contribution came from net trade (adding 0.37 percentage points to the quarterly GDP growth after -0.03% in Q3) as exports growth remained solid (0.35% after 0.25% in Q3) and imports fell sharply (-2.2% compared to 0.45% in Q3). On the other hand, private consumption slowed down (0.45% compared to 0.8% in Q3) and investment continued to decline for the 3rd quarter in a row (-1.5% after -0.25% in Q3).

In line with these economic conditions, the labour market remained strong. The unemployment rate was at 3.6%, marginally up from 3.5% in December 2019. Total nonfarm payroll employment increased firmly, by 152,186 in January, in line with an average monthly gain of 150,932 over the previous 12 months.

The growth outlook for the first quarter 2020 appears to be positive but at a more modest pace. Although the consumer confidence index edged up to 100.9 in January from 99.8 in December, industrial production remained weak (-0.3% in January, following -0.4% in December) and manufacturing growth slowed with the manufacturing PMI composite index of 51.9 (down from 52.4 in December).

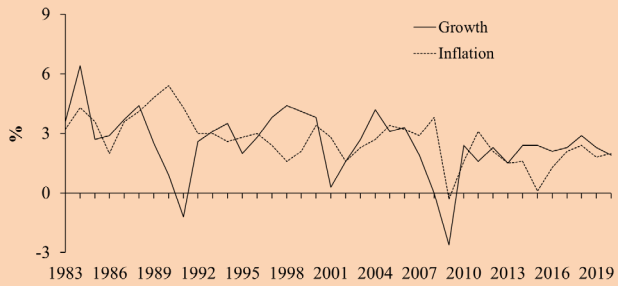
The annual inflation rate is rising, up to 2.5% in January from 2.3% in December and 2.1% in November. As a result of the strength in both inflation and growth, the Federal Open Market Committee decided to maintain the target range for the federal funds rate at 1.5-1.75%.

Japan

After four quarters of economic rebound, the Japanese economy suffered its biggest slump since 2014. Real GDP declined 1.6%, after rising 0.1% in Q3. The contraction was driven by a dramatic fall in domestic demand. Private consumption plummeted 2.9% after rising 0.5% in Q3, driven by the increase in consumption tax from 8% to 10% in October which shifted spending to before the rise. Non-Residential Fixed investment fell 3.7% (after rising 0.5% in Q3) as the Japanese Tankan business confidence index for large manufacturers fell to a near seven-year low of -11 in Q4. On the other hand, net trade contributed positively to growth. It added 0.5 percentage points to Q4 growth as imports contracted sharply (-2.6% compared to 0.7% in Q3) while exports fell mildly (-0.1% compared to -0.7% in Q3)

The economic outlook for Q1 2020 looks pessimistic due do the negative impact of coronavirus on domestic and foreign demand. After a recovery in January, private sector output declined sharply in February. The Jibun Bank composite PMI was 47.0 in February down from 51.0 in January. The previously resilient service sector contracted in February with a PMI of 46.7 (down from 51.0 in January), and manufacturing sector output continued its contraction for a fourteenth consecutive month with a February PMI of 47.6

U.S.: Annual Growth Rates of Real GNP and Consumer Prices

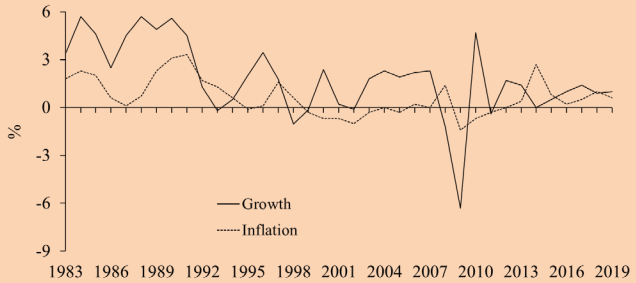


US

	2015	2016	2017	2018	2019	2020
Real GDP Growth (% p.a.)	2.9	1.6	2.2	2.9	2.3	1.9
Inflation (% p.a.)	0.1	1.3	2.1	2.4	1.8	2.0
Real Short Int. Rate	–1.1	–1.6	–0.9	0.5	-0.5	-0.4
Nominal Short Int. Rate	0.2	0.5	1.4	2.4	1.5	1.6
Real Long Int. Rate	0.3	0.5	0.8	1.1	-0.1	-0.1
Nominal Long Int. Rate	2.2	2.5	2.8	3.2	1.9	1.9
Real Ex. Rate (2000=100)[1]	93.0	94.0	94.5	94.8	95.0	95.0
Nominal Ex. Rate[2]	103.08	101.91	102.20	102.40	102.50	102.50

[1]The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation of the real exchange rate.
[2] The series for the USA is a trade weighted index (1990=100)

Japan: Annual Growth Rates of Real GNP and Consumer Prices



Japan

	2015	2016	2017	2018	2019	2020
Real GDP Growth (% p.a.)	1.3	0.6	2.2	0.3	1.0	0.3
Inflation (% p.a.)	0.8	–0.1	0.5	1.0	0.5	0.6
Real Short Int. Rate	0.1	–0.4	–0.8	–0.9	–-0.5	–0.6
Nominal Short Int. Rate	0.2	0.1	0.1	0.0	0.1	0.0
Real Long Int. Rate	–0.5	–1.0	–1.1	–0.9	–0.6	–0.7
Nominal Long Int. Rate	0.3	0.0	0.1	0.1	0.0	-0.1
Real Ex. Rate (2000=100)[1]	56.0	58.4	58.3	58.1	58.4	58.4
Nominal Ex. Rate	121.11	108.61	112.18	114.10	112.00	112.00

[1]The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation of the real exchange rate.

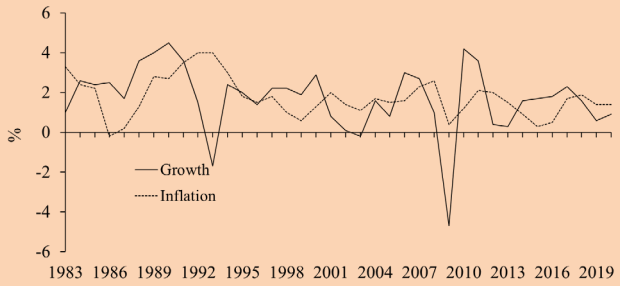
(compared to 48.8 in January).

Germany

The economic recovery stalled in Germany. Real GDP growth was 0% in Q4 compared to 0.2% expansion in Q3. According to the manufacturing PMI data (43.7 in December, down from 44.1 in November) manufacturing sector activity contracted at the very end of 2019.

The German economic outlook for Q1 could still be regarded as challenging. Although private sector output picked up in January (the composite PMI of 51.1 compared to December's 50.2), this was led by the growth in the services sector where the activity growth accelerated to a five month high (PMI at 54.2 up from 52.9 in December). The manufacturing sector continued its contraction, though at a slower pace, with the manufacturing PMI at 45.3, up from December's 43.7. The business confidence index declined to 95.9 in January, from 96.3 in December.

Germany: Annual Growth Rates of Real GNP and Consumer Prices



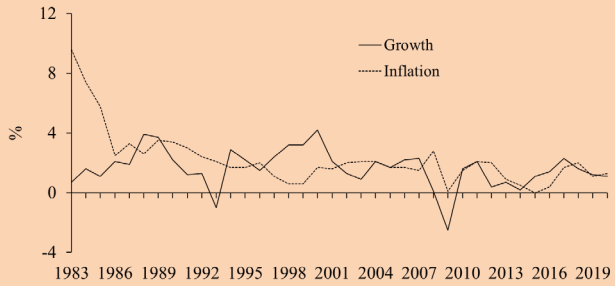
German

	2015	2016	2017	2018	2019	2020
Real GDP Growth (% p.a.)	1.7	1.9	2.2	1.6	0.6	0.9
Inflation (% p.a.)	0.3	0.5	1.8	1.9	1.4	1.4
Real Short Int. Rate	–0.6	–2.0	–2.0	–2.2	–1.8	–1.8
Nominal Short Int. Rate	–0.1	–0.3	–0.3	–0.3	–0.4	–0.4

after -0.3% in Q3) and imports also fell (-0.2% after 0.6% in Q3).

The economic outlook for Q1 shows some possible moderate rebound, with the Composite PMI at 51.1 in January compared to 52.0 in December. Though the January business confidence index for the manufacturing sector was 100, down from 101.8 in December, the consumer confidence index rose to 104 in January from 102 in December.

France: Annual Growth Rates of Real GNP and Consumer Prices



France

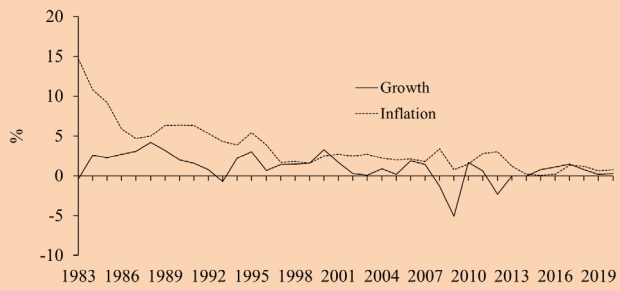
	2015	2016	2017	2018	2019	2020
Real GDP Growth (% p.a.)	1.0	1.1	2.3	1.7	1.2	1.1
Inflation (% p.a.)	0.0	0.2	1.0	1.9	1.1	1.3
Real Short Int. Rate	–0.3	–1.3	–2.2	–1.4	–1.7	–1.7
Nominal Short Int. Rate	–0.1	–0.3	–0.3	–0.3	–0.4	–0.4
Real Long Int. Rate	–0.7	–0.9	–0.9	–0.6	–0.5	–0.5
Nominal Long Int. Rate	1.0	0.7	0.8	0.7	0.1	0.0
Real Ex. Rate (2000=100)[1]	96.2	96.0	95.3	95.1	95.5	95.5
Nominal Ex. Rate[2]	0.90	0.90	0.88	0.85	0.86	0.86

[1]The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation of the real exchange rate.

Italy

Political and policy uncertainty continued to reflect negatively on economic performance. Real GDP decreased by 0.3% in Q4 after rising 0.1% in the previous quarter. Industrial output decreased 2.7% month-on-month in December following zero growth in November.

The outlook at the start of 2020 continues to look unfavourable. The manufacturing Markit PMI was 48.9 in January, up from 46.2 in December. Although improved, the reading still indicates decline and means that manufacturing had been contracting for sixteen consecutive months. The business confidence climate index decreased to 99.2 in January from 100.7 in December.



Italy

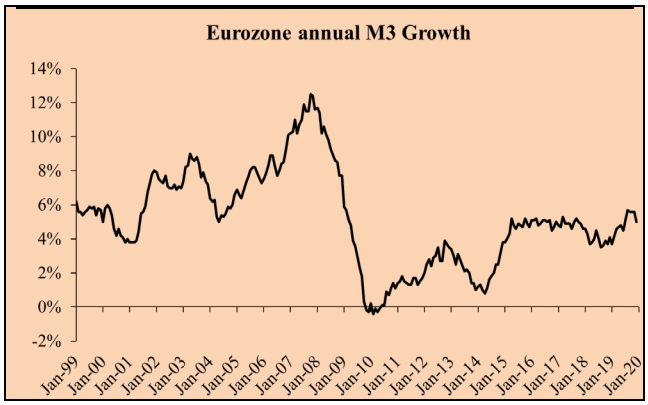
	2015	2016	2017	2018	2019	2020
Real GDP Growth (% p.a.)	1.0	0.9	1.7	0.8	0.2	0.3
Inflation (% p.a.)	0.1	–0.1	1.2	1.2	0.6	0.8
Real Short Int. Rate	0.0	–1.5	–1.4	–0.9	–1.2	–1.2
Nominal Short Int. Rate	–0.1	–0.3	–0.3	–0.3	–0.4	–0.4
Real Long Int. Rate	0.4	0.1	0.3	2.2	0.6	0.6
Nominal Long Int. Rate	1.6	1.7	1.9	2.8	1.4	1.2
Real Ex. Rate (2000=100)[1]	102.1	102.0	101.2	101.1	101.1	101.1
Nominal Ex. Rate[2]	0.90	0.90	0.88	0.85	0.86	0.86

[1]The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation of the real exchange rate.

Euro-zone monetary policy

The Harmonized Index of Consumer Price Inflation rate was 1.4% in January, up from 1.3% in December 2019. Despite the pickup, inflation remained consistently lower than the target of 2%. This increase was driven by energy and food, alcohol and tobacco.

Faced with weak economic data, low inflation and modest inflation expectations, at the January meeting the European Central Bank decided to maintain all its policy measures unchanged. It expected to keep to its accommodative monetary policy until there is a sign of inflation returning to its target.



WORLD FORECAST DETAIL

Growth Of Real GNP

	2016	2017	2018	2019	2020	2021
U.S.A.	1.6	2.2	2.9	2.3	1.9	2.0
U.K.	1.9	1.8	1.4	1.3	1.9	1.9
Japan	0.6	2.2	0.3	1.0	0.3	0.8
Germany	1.9	2.2	1.6	0.6	0.9	1.1
France	1.1	2.3	1.7	1.2	1.1	1.2
Italy	0.9	1.7	0.8	0.2	0.3	0.6

Growth Of Consumer Prices

	2016	2017	2018	2019	2020	2021
U.S.A.	1.3	2.1	2.4	1.8	2.0	2.1
U.K.	1.1	2.6	2.5	1.7	1.9	2.0
Japan	–0.1	0.5	1.0	0.5	0.6	0.6
Germany	0.5	1.8	1.9	1.4	1.4	1.5
France	0.2	1.0	1.9	1.1	1.3	1.3
Italy	–0.1	1.2	1.2	0.6	0.8	1.1

Real Short-Term Interest Rates

	2016	2017	2018	2019	2020	2021
U.S.A.	–1.6	–0.9	0.5	-0.5	-0.4	-0.5
U.K.	-2.0	–2.0	–1.3	-1.2	-1.2	-0.9
Japan	–0.4	–0.8	–0.9	–-0.5	–0.6	–0.7
Germany	–2.0	–2.0	–2.2	–-1.8	–-1.8	–1.9
France	–1.3	–2.2	–1.4	–1.7	–1.7	–1.7
Italy	–1.5	–1.4	–0.9	–1.2	–1.2	–1.4

Nominal Short-Term Interest Rates

	2016	2017	2018	2019	2020	2021
U.S.A.	0.2	0.5	1.4	2.4	1.6	1.6
U.K.	0.6	0.5	0.4	0.7	0.8	1.1
Japan	0.1	0.1	0.0	0.1	0.0	0.0
Germany	–0.3	–0.3	–0.3	–0.4	–0.4	-0.4
France	–0.3	–0.3	–0.3	–0.4	–0.4	-0.4
Italy	–0.3	–0.3	–0.3	–0.4	–0.4	-0.4

Real Long-Term Interest Rates

	2016	2017	2018	2019	2020	2021
U.S.A.	0.5	0.8	1.1	-0.1	-0.1	0.0
U.K.	–1.9	–1.9	–0.7	-0.9	-0.7	0.4
Japan	–1.0	–1.1	–0.9	–0.6	–0.7	–0.8
Germany	–1.7	–1.5	–1.4	–1.6	–1.7	–1.8
France	–0.9	–0.9	–0.6	–1.2	–1.3	–1.4
Italy	0.1	0.3	2.2	0.6	0.1	0.2

Nominal Long-Term Interest Rates

	2016	2017	2018	2019	2020	2021
U.S.A.	2.2	2.5	2.8	3.0	1.8	2.1
U.K.	0.7	0.6	1.0	0.8	1.3	2.4
Japan	0.0	0.1	0.1	0.0	-0.1	0.0
Germany	0.1	0.4	0.5	-0.2	-0.3	-0.2
France	0.7	0.8	0.7	0.1	0.0	0.1
Italy	1.7	1.9	2.8	1.4	1.2	1.3

Index Of Real Exchange Rate(2000=100)[1]

	2016	2017	2018	2019	2020	2021
U.S.A.	94.0	94.5	94.8	95.0	95.2	95.1
U.K.	81.4	77.4	78.5	76.6	76.1	76.0
Japan	58.4	58.3	58.1	58.4	58.3	57.8
Germany	95.0	94.3	94.9	95.1	95.0	94.9
France	96.0	95.3	95.1	95.5	95.4	95.4
Italy	102.0	101.2	101.1	101.1	101.0	100.8

[1] The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation in the real exchange rate.

Nominal Exchange Rate (Number of Units of Local Currency To $1)

	2016	2017	2018	2019	2020	2021
U.S.A.[1]	101.91	102.20	100.6	107.4	106.50	106.50
U.K.	1.23	1.35	1.27	1.33	1.32	1.34
Japan	116.8	112.90	110.80	108.70	108.10	106.50
Eurozone	0.90	0.88	0.85	0.89	0.88	0.87

[1] The series for the USA is a trade weighted index (1990=100); the series for the UK is $ per £

* Forecasts based on the Liverpool World Model

Anupam Rastogi

India

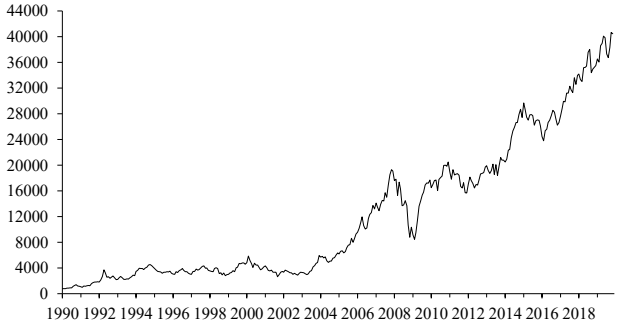
Indian's GDP growth rate slowed to 4.5% in the three months ended September compared to 5% in the previous quarter. This is its worst performance since March 2013. The government has launched multiple measures to boost lending, investment, and consumption in recent months to lift the growth rate. The government maintains that the downturn is only temporary. We have moderated India's growth rate to 5.6% in 2019–20 while keeping the growth rate for 2020–21 as 6.5%. We expect economic growth to show a sharp recovery on the back of a good monsoon. The Nikkei Manufacturing Purchasing Managers' Index, compiled by IHS Markit, in November was 51.2 compared to 50.6 in October. This suggests continuous expansion in the manufacturing sector in the last two months. Moreover, despite lowering of indirect tax, Goods and Services Tax (GST), on many items in August and September, the GST collections in November rose to a seven-month high of INR1.035 trillion, more than 6% higher than the previous month. This indicates that growth in consumption and manufacturing is intact and the aberration of declining growth in the three months ended in September, was due to fewer working days in that quarter, relative to 2018, as a result of Diwali vacations coming in the month of October and various disruptions in businesses were caused by flooding in various parts of the country.

The government took several steps, including a big cut in the corporate tax rate in September, to boost investments and bolster economic growth. The impact of this will come through in the following quarters.

Moody's Investors Service has downgraded its outlook for India to negative from stable, citing increased risks to its economic growth, which according to Moody's, will be lower than in the past.

Indian retail inflation exceeded the Reserve Bank of India's (RBI) medium-term target of 4% in October for the first time in 15 months, mainly because of rising vegetable prices. Prices of most vegetables climbed during the month as monsoon downpours delayed harvests and disrupted supplies. But, we expect RBI's monetary policy committee (MPC) to cut the repo rate, at which RBI lends to banks, by 25 basis points (bps) to 4.9% and maintain an accommodative stance. The RBI has cut its key interest rate by a cumulative 135 basis points this year to 5.15%.

India: BSE Sensitive



India's merchandise exports fell by 1.1% in October, while imports fell for the fifth month in a row by 16.3%, leading to a trade deficit of $11 billion.

We do not expect the rupee to depreciate much from here as it has just adjusted to roughly 2.5% higher inflation compared to the US rate of inflation. The crude oil prices are likely to remain soft as U.S. crude futures fell more than 5% to $55.17 a barrel on the New York Mercantile Exchange, giving away most of their November rebound and logging their biggest drop since mid-September. Moreover, Indian stock markets had been on a record-breaking rally in November in expectations of an economic recovery over the next few quarters. Both the foreign direct investment and the foreign portfolio investments are growing at a healthy pace and boosting Indian forex reserves. The Indian rupee has depreciated more than 2.5% year to date and the central bank is satisfied with the rupee level.

India is planning to offer 324 companies including Tesla Inc. and GlaxoSmithKline Plc, incentives to set up factories in India in a bid to capitalize from the trade war between China and the U.S. The government proposes to provide the manufacturers land to set up a factory along with power, water and road access, according to the Department for Promotion of Industry and Internal Trade, and Invest India. Other companies that officials will reach out to include, Eli Lilly & Co., South Korea's Hanwha Chemical Corp., and Taiwan's Hon Hai Precision Industry Co. The government is still to summon the political will to loosen labour laws and restrictions on land use. The former makes it onerous to set up large-scale manufacturing ventures while the latter impedes the consolidation of agricultural land.

	18–19	19–20	20–21	21–22	22–23
GDP (%p.a.)	6.8	5.6	6.5	7.2	7.4
WPI (%p.a.)	3.9	3.6	3.8	3.9	4.0
Current A/c(US$ bill.)	-70.0	-52.0	-64.0	-65.0	-65.0
Rs./$(nom.)	79.5	71.0	72.0	72.5	73.5

China

China's manufacturing purchasing managers' index breaching the level of 50 came as a surprise as it indicates that after six months of decline, the manufacturing sector has resumed growth. The index clocked 50.2 in November compared to 49.3 in October. The 50 mark separates expansion from contraction. The recovery in manufacturing activity also boosted China's measure of activity outside factory gates. Non-manufacturing PMI rose to 54.4 in November from 52.8 in October, as services and logistics related to factory productions registered big jumps. GDP is expected to grow 6.1% in 2019 and expand 5.8% in 2020. Our revised forecast for 2020 is in line with the International Monetary Fund forecast.

China's central bank lowered marginally the interest rate on its regular reverse repurchase open market operations for the first time since October 2015, aiming to boost market confidence and prop up slowing growth. The seven-day reverse repurchase rate is lowered to 2.5% from 2.55%. China's central bank continued to maintain its accommodative stance to support Beijing's continuous efforts to stimulate both domestic demand and slowing economic growth while embroiled in a trade war with the U.S.

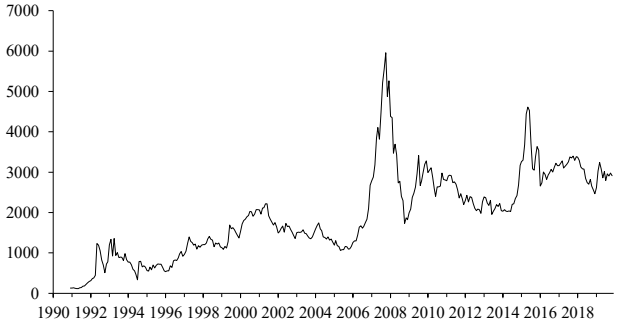
China's inflation continues to increase, driven by the sharp rise in pork prices triggered by China's African swine fever epidemic. The CPI rose 3.8% in October from a year earlier compared to 3.0% in September. This was a seven-year high, complicating policy makers' decision on whether to further ease funding for the country's weakening industrial sector. Industrial profits fell 9.9%, on year in October compared with a 5.3% decline in September.

China's October exports fell for the third straight month, down 0.9% from a year earlier compared to September's 3.2% contraction. China's imports shrank for the sixth consecutive month, though the 6.4% drop was smaller than September's 8.5% decline. That left China with a trade surplus of $43 billion in October, versus September's $40 billion surplus. The depreciation of currency by 2.3% year-to-date against the US dollar seems to have cushioned the exporters.

The Chinese government has taken a momentous decision to allow companies to fail. It has left creditors angry, debtors fighting to save their businesses and judges on a mission to promote the benefits of bankruptcy. Most of the country's bankruptcy tribunals have opened since 2015. New courts were added this year in Beijing, Shanghai and Shenzhen. Court-appointed administrators — law firms and accounting firms — help verify claims, organize creditors' meetings, list and sell assets.

The trade talk between the US and China could get complicated as Mr. Trump signed a bill supporting Hong Kong's anti-government protesters. China has labelled it as interference in its domestic affairs and warned of unspecified countermeasures. But, neither side wants the trade talks to

China: SSE Composite Index



China: SSE Composite Index

Korea: Composite Index

fall apart. One important deadline is December 15, when Mr. Trump has threatened to impose punitive tariffs on about $156 billion worth of Chinese smartphones, laptops, toys, videogames and other products. The US is trying to avoid these tariffs as much as the Chinese because they fear a price increase in top-selling consumer goods would lead to a consumer backlash against the China trade offensive. Farmers in the US are already restive because Chinese retaliatory tariffs have targeted U.S. agricultural exports. So far, China has held off from retaliation against the U.S. after President Trump signed the bill supporting Hong Kong's anti-Beijing protesters, as both sides remained confident that they can sign a partial trade deal in the coming weeks. Beijing has strong incentives to move ahead with the trade deal, which could help alleviate pressure on the country's fast-weakening economy. So is the US, as the administration does not want to upset its agricultural exports too much.

	18	19	20	21	22
GDP (%p.a.)	6.6	6.1	5.8	5.4	5.2
Inflation (%p.a.)	2.2	2.3	2.3	2.0	1.8
Trade Balance(US$ bill.)	50.0	60.0	40.0	20.0	0.0
Rmb/$(nom.)	6.8	7.1	7.3	7.3	7.3

South Korea

South Korea has got entangled in the US-China trade war. It should have benefitted from it but its public spat with Japan took away that advantage. South Korea's factory activity shrank for the eighth straight month in November. The Nikkei/Markit purchasing managers' index (PMI) in November rose to 49.4, from 48.4 in October. The indicator

below the 50-point level separates growth from contraction. Manufacturing output continued to shrink, but comparatively at a milder pace as new product launches gave a lift to auto and electronics makers and their suppliers.

The Bank of Korea (BOK) expects GDP to expand 2.0% in 2019 and 2.3% in 2020. But it looks an uphill task until it sorts out its differences with Japan and the EU economies come out of economic morass. The bank held its policy interest rate unchanged at 1.25%, while slashing its growth and inflation projections, which suggests that its view on the economy is far more uncertain compared to its public utterances. Hence, the bank kept its policy rate unchanged after cutting it twice this year.

The bank forecasts inflation may come in at 0.4% this year and 1.0% next year, softer than its earlier forecasts of 0.7% and 1.3%, respectively.

South Korea's exports saw another month of double-digit contraction in November, with few signs of recovery in semiconductors and Chinese demand. Exports dropped 14.3% from a year earlier in November for a sixth straight double-digit decline and imports decreased 13%. Both figures have turned out to be worse than expected. The Korean economy is among the hardest hit by the prolonged U.S.-China tariff war and cooling global demand. The only hope for the economy is an export recovery next year as the U.S. and China move towards a preliminary trade deal. The nation's trade surplus for November was $3.4 billion, narrowing from $5.3 billion in October.

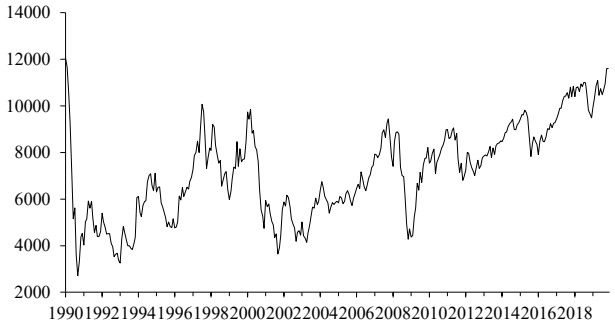
It seems that different views on historical events between Korea and Japan are going to be buried and pragmatism on the economic policy and trade front are poised to prevail. This would lead their relations on the mend as both sides need relations to normalize. The chairman of the U.S. Joint Chiefs of Staff has requested South Korea to stay in a military information-sharing pact with Japan, part of a high-level U.S. push to hold together the agreement between two of its closest allies days before it is due to expire.

	18	19	20	21	22
GDP (%p.a.)	2.7	1.6	1.8	2.2	2.2
Inflation (%p.a.)	1.5	1.1	1.5	1.5	1.5
Current A/c(US$ bill.)	86.0	80.0	78.0	70.0	70.0
Won/$(nom.)	1130	1220	1240	1260	1260

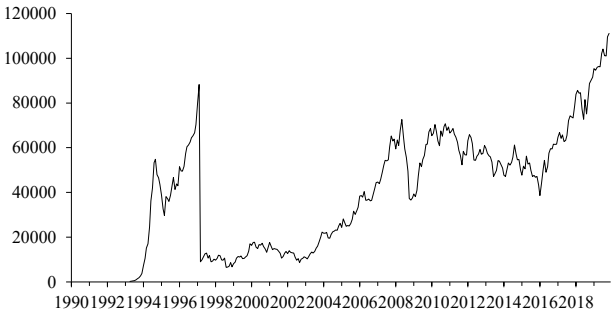
Taiwan

Taiwan has moved into preparation for the presidential and legislative elections to be held on January 11, 2020. The students' protests in Hong Kong have positively rubbed on the pro-independence Democratic Progressive Party. The opinion polls put President Tsai Ing-wen far ahead of her main opponent Han Kuo-yu from the Kuomintang party, which favours close ties with China. Ms Tsai is from the pro-independence party and she is disliked by China. Taiwan's

Taiwan: Weighted TAIEX Price Index



Brazil: Bovespa



central bank has instructed two major foreign exchange banks on the island to bring in more U.S. dollars before the end of the year to prepare for increased demand in case of political uncertainty in January elections.

Taiwan's economy continues to enjoy a steady growth rate with almost no inflation as the US-China trade disputes continue to move along. Taiwan's inflation moved up mildly in October and November. For the January–October period, the CPI rose 0.5% year on year on average.

Taiwan has a large current account surplus. It enjoys the sixth largest forex reserves in the world. Its reserves stood at $473 billion at the end of October. But, its trade surplus with the United States has started worrying the island nation. In the first nine months of this year, the United States recorded a $17.4 billion trade deficit with Taiwan. This year the trade surplus is expected to pass $20 billion, one of the criteria Washington uses to put a currency on the list of manipulator. Taiwan's dollar is one of the few currencies which has appreciated marginally, year-to-date, in 2019.

	18	19	20	21	22
GDP (%p.a.)	2.6	2.5	2.6	2.6	2.2
Inflation (%p.a.)	1.2	1.0	1.0	1.0	1.0
Current A/c(US$ bill.)	68.0	70.0	71.0	70.0	60.0
NT$/$(nom.)	29.8	31.0	31.0	31.0	31.0

Brazil

The Brazilian economy seems to be stabilizing now as the Bolsonaro government is able to establish its credibility by delivering on its promise of pension reforms. The

government is confident enough to revise its GDP growth rate from 0.85% to 0.90% for the current year. It expects that GDP growth would be 2.3% next year, up from 2.2% previously. Inflation would be 3.5% instead of 3.9%, and the dollar to average 4.00 reais over the year instead of 3.80 reais in 2020. We are maintaining our forecast of GDP, inflation and real as before. The central bank's official inflation target for 2019 is 4.25%, and 4.00% in 2020.

High unemployment and a below potential production in the economy is pushing inflation well below target, allowing the central bank to slash borrowing costs. The annual rate of consumer price inflation in the month of November turned out be less than 3%, suggesting that inflationary expectations are well under control. The central bank president Roberto Campos Neto is confident that the bank could reduce the benchmark Selic rate by 50 basis points to a new record low 4.50%, in its next monetary policy meeting.

The Brazilian trade deficit was US$630 million in November as exports were US$2.7 billion and imports were US$3.3 billion. The trade figures suggest that the economy is moving on a growth path. However, Brazil's real has been one of the worst-performing emerging market currencies this year. The currency took a severe hit as foreign bidders did not show up for the "mega" oil auction, meaning inflows of foreign currency into Brazil will be billions of dollars lesser than what was estimated earlier as crude oil prices remain soft. The Real touched a record high of 4.28 reais to a USD. The central bank intervened by selling dollars on the spot market for the first time in a decade in the last few months.

Mr. Bolsonaro took an about turn with respect to the Chinese communist regimes, as he openly expresses interest in getting Chinese capital to finance a large pipeline of roads, railways, ports, power plants and other infrastructure which his administration considers vital to rebuild the economy.

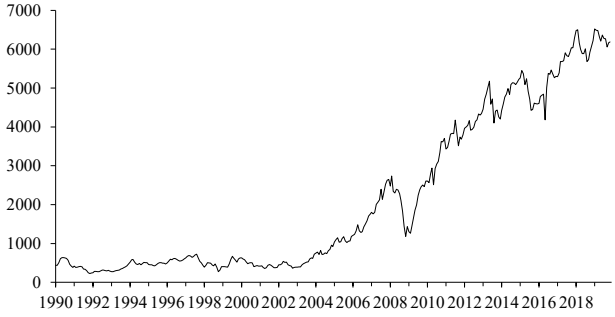
Brazil's ties to China, though, will be tested when Brazil upgrades to a fifth-generation cellular network in 2020. China's Huawei Technologies Co. will be the most likely technology supplier, creating a challenge for Brazil because Mr. Trump has been pressuring U.S. allies to ban Huawei 5G equipment. Huawei maintains that the company has been in Brazil for 21 years and is ready to be a supplier in 5G networks, as it is in other countries.

	18	**19**	**20**	**21**	**22**
GDP (%p.a.)	1.1	0.8	1.8	2.5	2.5
Inflation (%p.a.)	3.8	3.3	3.9	4.0	4.0
Current A/c(US$ bill.)	-14.6	-36.0	-30.0	-26.0	-26.0
Real/$(nom.)	3.8	4.1	4.0	4.1	4.2

Other Emerging Markets

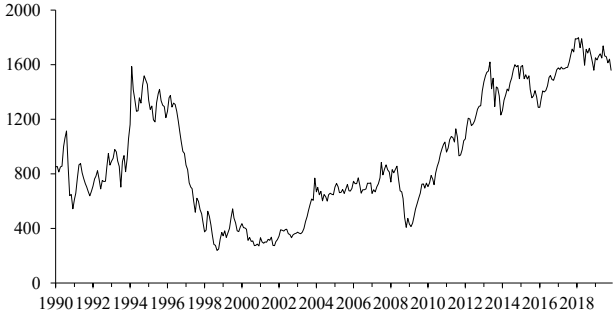
Hong Kong: FT-Actuaries

Indonesia: Jakarta Composite

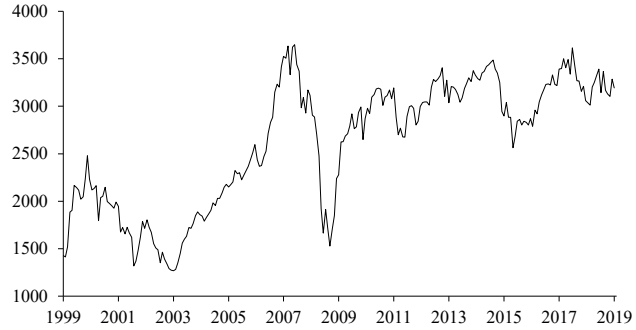


Malaysia: FT-Actuaries (US$ Index)

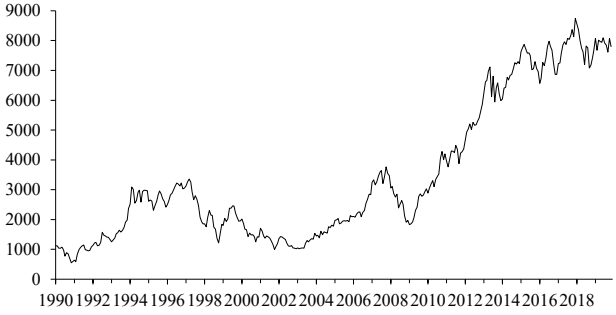
Thailand: Composite Index



Singapore: Straits Times Index

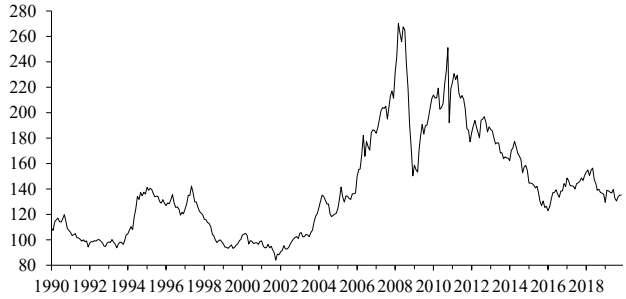


Philippines: Manila Composite



COMMODITY MARKETS

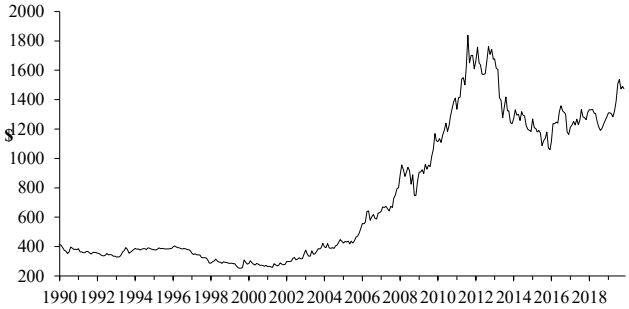
Commodity Price Index (Dollar)
(Economist, 2000=100)



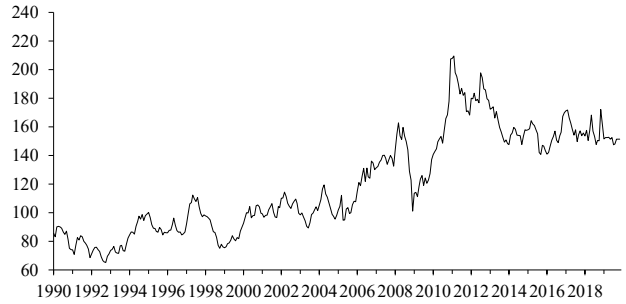
Oil Price: North Sea Brent (in Dollars)

Commodity Price Index (Sterling)
(Economist, 2000=100)

Gold Price (in Dollars)



Commodity Price Index (Euro)
(Economist)



WHY THE TRADITIONAL ORTHODOXY OF FISCAL CAUTION IS DANGEROUS IN TODAY'S ZERO INTEREST RATE WORLD

Patrick Minford

What does the current developed world economic situation demand in the way of fiscal and monetary policy responses? I will argue in this chapter that the conventional wisdom of fiscal balance and monetary policy stabilisation needs to be thrown out until the monetary environment is brought back to normal.

We must begin from the widespread dissatisfaction the public expresses about current policy, not least with the persistence of 'austerity' policies since the financial crisis. This dissatisfaction has led to demands by some for a return to socialist policies and an abandonment of 'capitalism'; this is now the political position of the British Labour party, just as it is of some Democratic presidential candidates on the left of the party, such as Bernie Sanders, even though the US Democratic party has traditionally supported the general capitalist economic model. So what is this opposition to capitalism all about?

The last big peacetime crisis of Capitalism was created by the Great Depression of the 1930s. The current crisis has been created by the Great Recession starting in 2008.

After the Great Depression major changes were made in western countries' policies, as urged by Keynes. Governments became far more active in fiscal policy in preventing slumps in demand; monetary policy was relegated to a support role, setting interest rates to allow demand to be regulated by fiscal policy. As is now well-known, these policies led after WWII to high and persistent inflation, so that today central banks target inflation and fiscal policy is generally held in control to prevent government debt getting too large.

Today's financial crisis and the Great Recession has in turn forced big changes in western countries' policies. We now have introduced heavy regulation of bank behaviour, combined with aggressive printing of money at zero or even negative interest rates, 'Quantitative Easing' (QE), in the attempt to create renewed growth. Furthermore, these policies have been accompanied by sharp fiscal contraction, with 'austerity' the main fiscal aim of most western governments. The living standards of western households have fallen sharply; and it is because of this that there is widespread disappointment with capitalism, fuelling 'populist' revolts such as the election of President Trump and Brexit.

To anticipate, I will be explaining how it was a failure of monetary policy that caused the Great Recession, and that avoidance of future ones depends on a radical overhaul of monetary policy rules. I will also argue that to put a full end to the great Recession as it continues to drag on in the form of weak recovery and renewed recession, in spite of continued but ineffectual efforts from monetary policy, we have to endorse a self-limiting fiscal expansion, and within it tackle the discontents of average households that now fester, through more and better government spending and liberalising tax policies. Through these measures we will get the capitalist economy working effectively again and satisfying its critics with this improved performance.

The unnecessary Financial Crisis courtesy of central bank mistakes:

To understand how the financial crisis occurred, we must first consider how monetary policy was conducted until 2008. In the early 1990s central banks started to embrace inflation targeting, together with associated 'central bank independence' so that supposedly spendthrift governments should not impose inflationary financing on them. These new policies led to a period of low inflation which in turn we know encouraged firms to keep prices and wages stable: price and wage durations lengthened, meaning that output was increasingly dominated by demand shocks because these did not provoke the rise in prices that would have choked off demand and so contained the needed rise in output. This was a 'New Keynesian' world, in the sense that prices and wages did not respond, much as Keynes argued they would not in the modern capitalist world of large companies and powerful unions. As it turned out the 1990s were an era of moderate demand shocks; also productivity growth was steadily positive. The era became known as 'The Great Moderation', with low and stable inflation and moderate positive growth. In retrospect it looks like a time of unusually benign shocks: small demand shocks and positive productivity and other supply shocks.

As it proceeded from the 1990s, monetary policy began to encourage strong credit growth, especially in the US. Public policy also entered the mix, with the US government encouraging mortgage loans to poor families, to be underwritten by 'Fannie' and 'Freddie', two public institutions able to buy mortgages. It seemed that with real wages having stagnated, 'getting poor people onto the housing ladder' could be an alternative route for obtaining the 'trickle down' effect of growth. With low inflation successfully engineered, central banks disregarded the growth in the monetary and credit aggregates which accelerated into the 2000s. As dollars became more plentiful,

the central bank of China bought them to prevent the yuan appreciating against the dollar; and easy money spread to China through this channel. World growth increased, with China reaching 13% at one point; world growth peaked at over 5% and world commodity and oil prices soared as excess capacity was used up. By 2007 these prices had hit high peaks, with oil at $150 a barrel. It was plain that growth must be arrested, if only by lack of resource capacity, even though final prices were slow to generate downstream inflation with firms still setting long price durations and so reacting slowly to cost increases.

Central banks were finally realising the threat of rising inflation by 2007, when the mortgage crisis burst, with various banks reporting defaults on their bought-in packages of mortgages. The interbank market seized up, with uncertainty about which banks borrowing in it might be at risk. Interest rate rises were put on hold and central banks went into crisis-prevention mode: various banks were rescued by central bank loans plus concerted take-over by other banks. This early era of bank bail-out created a political backlash, especially among US Republican politicians. It succeeded in stabilising bank liquidity so that by the middle of 2008, it seemed as if a full-scale banking crisis had been averted. Then out of the blue in September 2008, Lehman went bankrupt; shortly afterwards, AIG, the world's biggest insurance company went down with it. The financial crisis had occurred with a vengeance.
Could central banks have averted it? The answer is plainly: yes. Lehman could have been saved by a coordinated package of take-over by other banks (among whom Barclays was keen to buy parts of Lehman) and loans injected by central banks, plus general liquidity provision to the interbank market, where Lehman's problems originated. It seems that central bankers lost their nerve in the face of a political climate increasingly hostile to bank bailout; not just in the US but also the UK, where Barclays was expressly forbidden from buying Lehman in the talks led by the Fed that attempted to prevent the bankruptcy. Even among central bankers, such as Britain's Mervyn King, a school of thought had arisen that banks needed to be taught a lesson, to avoid in future the 'moral hazard' of excessive lending, implicitly supported by the taxpayer. Other banks, whose cooperation was needed in any Lehman package, became increasingly alarmed that if their turn ever came, the central bank willingness to supply money would have run out.

So it was that after long discussions on Sunday Sept 14th, 2008, Lehman's bankruptcy was finally decided. No action was taken to close markets or provide special assistance. After AIG's bankruptcy, the full savagery of the financial crisis became clear and forced governments to intervene with large taxpayer bailouts, both in the US and the UK. World trade and growth collapsed overnight, as credit lines were extinguished. The Great Recession had begun.

It is plain that central banks could have averted it at two stages. First, monetary policy could have been tightened in the 2000s, so preventing the massive credit boom up to 2007. Second, central banks could have coordinated a rescue of Lehman along earlier lines.

However, central bank failure did not stop there. What was needed, given the general banking collapse, was an immediate liquidity injection into the banking system, together with the easing of any restrictions on banks' lending capacity. This could have caused a rapid turnaround from credit blight to credit expansion.

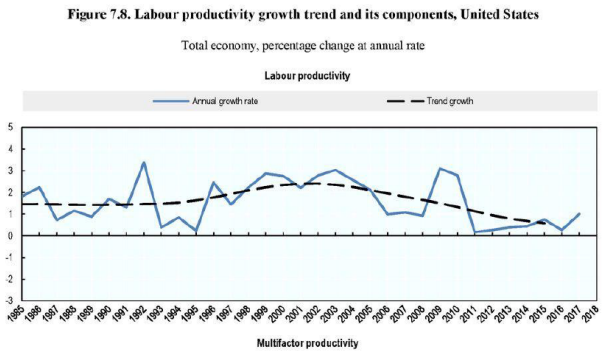
Unfortunately, central banks had taken from this whole episode the moral that banks, not they, had behaved irresponsibly; and that bank regulation should be sharply tightened to prevent future credit expansion to 'risky' clients. The fact that bank clients are in general risky, it being banks' role to extend risky credit, duly escaped central banks under this new view of the need for regulation to 'prevent future crises'. Plans for this new regulation were drawn up in early 2008 and instead of being put on indefinite hold when the crisis struck in September, they continued to be rolled out and duly prevented the necessary snapback in bank lending.

So central banks now became the reason why recovery from the crisis was so slow. Of course for them there was the undoubted consolation that through it all their own bureaucratic role had been massively strengthened, to include bank regulation, as well as their continued independent execution of monetary policy.

QE and The Great Distortion

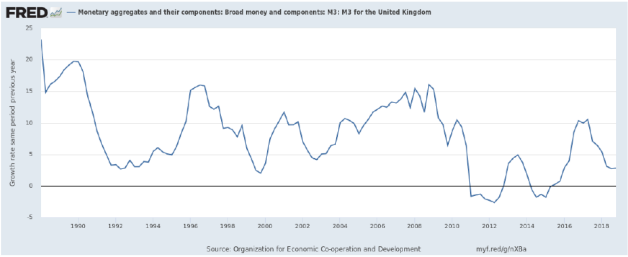
As part of this enhanced role, central banks developed the new tool of deliberate balance sheet expansion, printing money to acquire large amounts of government debt. This 'Quantitative Easing' was an extension of 'open market operations' in debt, but on a greatly expanded scale and in one direction only. We know that at the macro level of monetary loosening QE been effective, at least to begin with- see Le et al (2016)- though by now interest rates on safe government bonds have been driven to zero or close. How did QE work? By driving up the prices of assets, especially government longterm bonds demanded by pension funds, and the equities and corporate bonds of large companies that have low risk. So for large private sector agents such as these companies it has been cheap to borrow and raise equity.

Figure 1: US productivity growth trend (Source OECD)



So we have had the Great Moderation in the 1990s, the Great Recession in the 2010s. Now we are having the Great Distortion of financial markets as QE and bank regulation take their toll. The various phases of monetary policy can clearly be seen in Figure 2, for the UK's M3, monetary behaviour rather typical of most developed economies.

Figure 2: UK money supply growth (M3; source Fed of St. Louis, FRED database)



How to dig the world economy out of the Great Recession created by central bank mistakes? The need for a bold but self-limiting fiscal expansion

The state of the world economy can only be described as weak and lacking in confidence, with low productivity growth. Interest rates on safe assets like government bonds range from zero on short-dated paper to a maximum of around 2% on very long term bonds, but close to zero on most western countries' long term bonds, with the US around 2% as the only exception. In Japan and the euro-zone all rates are close to zero, while rates paid to banks on their central bank balances are actually negative. On risky assets rates are generally positive, reflecting the risk premium; however, as noted above, large corporations enjoying dominant market positions are able to access capital at close to zero cost which is heavily distorting market competition. As for governments, they can raise capital at negative real interest rates, implying that they are being paid to borrow; they can even print money to finance themselves at negative real interest rates.

These facts signal desperate times are with us. Monetary policy is a busted flush, with its latest tool, QE, actually damaging the situation. Can nothing be done?

The clue to what can be done is to be found in that last sentence of the earlier paragraph: that people will pay governments to borrow and spend. This mirrors the desperate plight of the private sector, unwilling to borrow enough at such low interest rates that the economy would surge and raise the rate of return to normal.

Because of the bailouts of banks and related financial costs, western governments have historically high debt/GDP ratios. Yet because of QE, as much as a third of this debt is actually simply money- the debts have been bought by central banks in return for printed money. In normal times we would worry that all this printed money would cause inflation; and we would be urging the central banks to sell their bonds and retrieve the money. Yet plainly we are not in normal times.

It is as if people were going around too emaciated to eat large stores of accumulated food that in normal times we would worry might cause obesity. The economy is too emaciated to use the huge supplies of money that have been printed.

Abnormal times require abnormal solutions. Fortunately all western countries have governments that can borrow, spend and cut taxes. As we have seen, they can do this at negative cost in debt interest; this means that future taxpayers will gain from the negative real interest cost on the debt, effectively only paying back less than the real value of the debt. From society's viewpoint, provided the government can get a social return on its spending or its tax cuts that is positive, then this borrowing pays. Future taxpayers will have more income with which to pay off less than 100% of the debt. This means that there is no argument to be had with future taxpayers. Meanwhile, current taxpayers will plainly be delighted if the government would take this action, bringing immediate direct benefits, but more importantly restoring the economy to functionality and confidence.

For those who feel concerned about adding to public debt ratios for fears of insolvency, this arithmetic provides reassurance. The truth is that if such fiscal policies work and push up interest rates once more to the normal real interest rates of the past, then any current rise in debt ratios will actually be reversed. Here is a simple arithmetical example of what can happen. Suppose a country starts off with a debt ratio of 100%, of which say 60% is very long term debt, say perpetuities, with long term interest rates at 1% p.a. Now assume it spends 10% of GDP borrowing on more very long term bonds to spend and cut taxes over three years; and that this in time drives interest rates up to 3%. Its stock of very long term bonds will rise at first to 90% of GDP, with another 40% of GDP in short term bonds, making a total of 130% of GDP. But once interest rates rise to 3%, its debt ratio will fall to 70% of GDP, close to the 60% level considered prudent in the long run; this is because the long term debt is now being discounted by a rate three times higher than the current 1% (the value of a perpetuity is the coupon paid each year divided by the rate of interest). For governments with long term debts the rise of long term interest rates to normal devalues their existing debts, improving their solvency.

This example also shows that fiscal expansionism in these troubled times will bring its own termination and so can be thought of as self-limiting. Once interest rates get back up to normal, the normal solvency calculus will apply. New borrowing will once again be expensive in real terms, and should induce the usual caution over fiscal deficits.

It is important to realise that the case I am making here for fiscal expansion is strictly exceptional, to be ended once normality returns. It echoes Hayek's response to Keynes'

work, 'The general theory of employment, interest and money'; Hayek agreed that, in the very special circumstances of a stubborn depression, fiscal stimulus could be justified but he said there was not a 'general' case for fiscal 'activism', which Keynes was arguing for, on the grounds that the unaided economy might repeatedly fall into this state.
The same is true here. Usually, the economy works well without fiscal intervention. Any needs of stabilisation can be supplied by monetary policy. What has happened however is that monetary policy has laid waste the economy's usual robustness by dreadful mistakes, leaving only fiscal policy as the tool for the restoration of its robustness that we desperately need.

Once this restoration has occurred, we can also restore a powerful stabilising role for monetary policy, reacting in the future not so much to inflation as to Nominal GDP; as shown by Le et al (2016), this shift of target implies a much stronger reaction of monetary policy to the sort of shocks involved in the Great Recession.

Conclusions

Monetary policy is powerless now to restore vigorous growth to the world economy, with interest rates, long and short, around zero. Fiscal policy must step in with a bold expansion designed to push interest rates back towards normality, decisively ending the zero lower bound episode. With real interest rates negative, there is no threat to government solvency from this fiscal expansion, which will come to an end naturally once interest rates have normalised. Meanwhile the expansion can be used for necessary public spending and taxcuts that will stimulate supply-side growth.

I leave on one side here the details of what spending, what tax cuts and how great, in total, borrowing should be in the rest of the world. I would simply commend President Trump's tax cuts and Congress' willingness to agree with him to rising fiscal deficits. In the euro-zone I would urge a general liberalisation of fiscal policy, backed up by an ECB pledge to buy the bonds of any government facing market pushback; in particular I would urge the German government to abandon its doctrinal opposition to fiscal deficits, at least until the Great Recession is over.

For the UK, the excuse of Brexit is there for a radical new direction in policy, to be backed up by fiscal liberalism. In recent work the Economists for Free Trade campaign group that I chair has set out proposals (Leach and Minford, 2019) for well-targeted spending and tax-cuts in the UK that raise spending power and strengthen corporate competitiveness. We hope that Boris Johnson's government will be bold and carry out such a fiscal reform programme, that will underpin the various trade- and regulation- liberalising policies that will come, as I have explained before in these columns, from Britain leaving the EU.

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The Julian Hodge Institute of Applied Macroeconomics was launched in autumn 1999 in a new collaboration between the Cardiff Business School of Cardiff University and Julian Hodge Bank. The aim of the Institute is to carry out research into the behaviour of the UK economy, and to study in particular its relationship with the other economies of Europe. This research has been given added urgency by the ongoing discussions about the UK's adoption of the Euro in place of the Pound. The new Institute has aimed to develop research relevant to this important debate.

The Institute embraces the original Liverpool Research Group in Macroeconomics, which is now based at Cardiff Business School and is pursuing a research programme involving the estimation and use of macroeconomic models for forecasting and policy analysis. It is grateful for financial support to the Jane Hodge Foundation, the Economic and Social Research Council, Esmee Fairbairn Charitable Trust, the Wincott Foundation and Cardiff Business School.

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