

LIVERPOOL INVESTMENT LETTER

February 2021



Cardiff Business School

Ysgol Busnes Caerdydd

Julian Hodge Institute of Applied Macroeconomics



LIVERPOOL RESEARCH GROUP IN MACROECONOMICS

LIVERPOOL RESEARCH GROUP IN MACROECONOMICS

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The Julian Hodge Institute was launched in autumn 1999 in a new collaboration between the Cardiff Business School of Cardiff University and Hodge. 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. The research has been particularly germane in recent years and has proved to be of significant social and political relevance as Europe has navigated the difficulties of the global financial crash, the Eurozone crisis and most recently the UK referendum on EU membership. The Liverpool Investment Letter is written by Patrick Minford, with the assistance of other members of the Group; in particular the emerging markets section is written by Anupam Rastogi, and the focus on Japan is written by Francesco Perugini. The Investment Letter is published monthly.

The Liverpool Research Group in Economics is pursuing a research programme involving the estimation and use of macroeconomic models for forecasting and policy analysis. The Group is now mainly based in Cardiff Business School, Cardiff University, and is indebted to the School and to the Hodge Foundation for their support. The Group's activities contribute to the programmes being pursued by the Julian Hodge Institute of Applied Macroeconomics. This Liverpool Investment Letter is typeset by David Meenagh and published on behalf of the group by Liverpool Macroeconomic Research Limited, which holds the copyright

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THE PUBLIC SECTOR FINANCE OUTLOOK

A key element in the outlook is how fiscal policy will develop. In 2020 government spending related to the coronavirus crisis rose by about 17% of GDP, pushing the ratio of spending to GDP up to 56% from a normal 38%; given the fall in GDP, this meant that spending itself rose by a third, or about £280 billion. Government receipts were also badly hit, falling to 37% of GDP from a normal 38%; with GDP itself falling 11% in 2020, this meant that receipts fell by about 14%, or about £106 billion. The PSBR consequently soared from £43 billion in 2019–20 to a probable £400 billion approx. in 2020–21.

The starting point for analysing future public budgets must be a judgement on how spending and taxes will behave as the effects of the virus and the associated temporary measures fall away. There is still uncertainty about the speed with which this will happen; the most recent report from the Bank forecasts that the economy will be back to pre-pandemic levels by the end of 2021, given the rapid rollout of the vaccine. This seems to be a reasonable current assessment. Then we can expect catching-up with two years' lost normal growth of (jobs and) gdp of say 5% over the course of 2022.

These developments should mean that by financial year 2022/23 the economy should have returned to normal spending and receipts relative to GDP. Excluding debt interest that would mean spending of 38% of GDP; and a very similar revenue/GDP ratio.

However, the OBR projects future spending (excluding debt interest) by 2022 at 41% of GDP. It is hard to see where this comes from. It appears to have simply pushed up its estimates of departmental spending. In fact, it says (para 372, November Report) that spending plans have been lowered but as a% of GDP have gone up as GDP has fallen:

“From 2022–23 to 2025–25, TME is materially lower than we forecast in March — by £18 billion a year on average — a difference that is more than explained by departmental spending being cut relative to March totals and by much lower debt interest spending. But thanks to the weaker outlook for nominal GDP, despite lower cash spending, the ratio of TME to GDP is actually higher than we forecast in March, settling at around 42%”

Yet of course GDP is now recovering rapidly, to pre-Covid projections by 2022 at the latest.

In the absence of government commitments at this point to such a high spending ratio to GDP, we assume a return to normality. From that we can judge the scope for higher spending growth or tax cuts.

Our projections of the PSBR on this basis give us £40 billion in 2023/4, 1.7% of GDP. The debt ratio would be 90% of GDP. With nominal GDP growth of 5% p.a., and the PSBR

Table 1: Summary of Forecast

	2017	2018	2019	2020	2021	2022	2023
GDP Growth ¹	1.8	1.3	1.4	-10.6	6.1	4.2	3.2
Inflation CPI	2.6	2.4	1.8	0.9	1.6	2.1	2.0
Wage Growth	2.8	3.0	3.5	0.3	2.3	3.2	3.3
Unemployment (%) ²	4.4	4.1	3.8	5.0	5.6	3.6	2.9
Exchange Rate ³	77.4	78.6	78.1	78.6	80.1	80.0	79.9
3 Month Interest Rate	0.4	0.7	0.8	0.2	0.2	1.5	4.5
5 Year Interest Rate	0.6	1.0	0.6	0.2	0.4	1.8	4.7
Current Balance (£bn)	-68.3	-82.9	-83.8	-42.1	-47.1	-41.1	-36.8
PSBR (£bn)	53.7	39.3	43.2	332.5	155.3	86.4	40.4

¹Expenditure estimate at factor cost

²U.K. Wholly unemployed excluding school leavers (new basis)

³Sterling effective exchange rate, Bank of England Index (2005 = 100)

running at 1% of GDP, the debt to GDP ratio would reach 60% in a decade.

We can also look at the long term solvency condition:

The formula for solvency equates the PV of current and future discounted primary surpluses ($t-e$) with the market value of debt, D , as follows:

$$(t - e)Py \sum_{i=0}^{\infty} [(1 + \pi + g - d)/(1 + R)]^i = D$$

π =inflation; g =growth of GDP; d =proportional rate of decline of initial primary surplus, $t-e$; R =nominal long-run interest rate; $r = R - \pi$.

If r is greater than g , and $d=0$, the LHS does not converge, goes to infinity. If d is raised to just above $g-r$, then LHS converges, becoming $(t - e)Py/(r - g + d)$ so that solvency can be written:

$$(t - e) = [D/Py](r - g + d)$$

The above formula assumes that both spending and tax rise in proportion to nominal GDP. However, we should refine this to reflect political realities and get greater precision; when t and e are so close it fails as a good approximation. Spending is controlled in nominal terms, so that it tends to rise by less than both prices and output; this is illustrated by regular pay freezes. However, taxes are expressed as rates, and they are mostly progressive, so that they tend to rise faster than nominal GDP, typically about a third faster.

We can rewrite the solvency condition as:

$$D = tPy \sum_{i=1}^{\infty} \frac{(1 + \eta_t(g + \pi) - d_t)^i}{(1 + R_t)^i} - ePy \sum_{i=1}^{\infty} \frac{(1 + \eta_e(g + \pi) - d_e)^i}{(1 + R_t)^i}$$

where η_t, η_e are respectively the elasticity of tax revenue and government spending to nominal GDP. η_t is we estimate around 1.3 while η_e is set at around 0.9, as argued above. d_t is the planned annual rate of fall in the tax rate, while d_e is

the planned rate of fall in the spending ratio. Provided these rates of change are chosen suitably, the expression can be evaluated as:

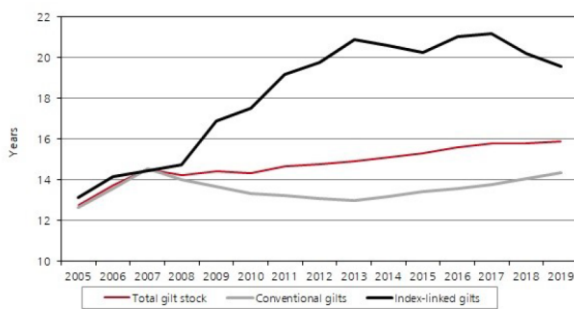
$$\frac{D}{Py} = \frac{t}{R - \eta_t(g + \pi) + d_t} - \frac{e}{R - \eta_g(g + \pi) + d_e}$$

To obtain the relevant quantities today, $D/Py=1$; $t=e=0.38$; $g+\pi=0.05$; $\eta_t=1.3$; $\eta_g=0.9$; $R=0.01$; if we set $d_t=0.085$ $d_e=0.065$. We then get $1.0=13.7- 12.7=0.38x(35.9-33.3)$. It can be seen that the tax rate needs to fall and so does the spending rate for the solvency constraint to bind. Otherwise the debt/GDP ratio will fall without limit as tax revenues rise ever faster than spending; or vice versa.

In this calculation it is important to see that the interest rate being so low is a key element in the solvency constraint not binding. Critics who want to see taxes rise and spending cut stress that interest rates are likely to rise, raising the cost of debt from today's nugatory levels, as debt is rolled over at higher rates. This is true and the need to raise interest rates to return to a normal monetary environment is a strong reason for favouring an aggressive fiscal expansion today, driving up demand and interest rates in a way that monetary policy is now incapable of.

However, HM Treasury has the power today to 'lock in' today's very low interest rates by issuing very long-dated debt, preferably perpetuities, so that it can limit the extent to which debt interest costs rise. Only new debt will attract the higher new rates. The average maturity of UK government debt was by end-2019 already 20 years for index-linked and 14 years for conventional gilts (Chart A4); overall it was 16 years. These maturities could and should be increased.

Chart A.4 Average maturity of UK gilt stock (end-December values)¹



¹ Calculated on a nominal weighted basis, including T-bills issued by tender.
Source: DMO.

Here is a further assumption behind these calculations: namely that the Bank of England will liquidate its holdings of debt acquired for 'QE' purposes. Under this assumption the government will owe its debt to the private sector, and not to itself as when the Bank holds it. By borrowing from the Bank, money is created, which could produce high inflation. We assume that the Bank will claw back this money, to prevent such inflation. If it does not, and inflation takes off, the government will be unable to carry on borrowing from the Bank, as it will be forced to stop this to

prevent runaway inflation. In this case the government would indeed face harsh new borrowing costs on the new debt it would have to raise in private markets.

However, it is reasonable to assume both that the government will lengthen debt maturity and that the Bank will liquidate its QE debt holdings. Both are effectively current policy. In these circumstances we can see that the government has a lot of flexibility to cut taxes and raise spending in the next decade or two, courtesy of the very low interest rates today.

The solvency constraint depends on growth. 1% p.a. higher growth implies that consistent with today's debt the tax rate can fall by 10% of GDP with the same spending, or spending rise by 14% of GDP with the same tax rate. This effect becomes bigger with yet more growth; thus 2% more growth p.a. produces a further potential fall in taxes of 14% of GDP, with spending constant. What this means is that if tax cuts or spending increases can raise growth, they are consistent with solvency. While they are financed they create more debt but this is offset by the higher net revenues created.

The key policy priority is to boost growth by effective supply-side policy

What we find from our research on growth is that both national and northern growth are boosted by tax cuts through their effects on incentives and competitiveness, while the effect of extra spending on e.g. infrastructure is limited by the size of the (e.g. Northern) economy. Hence once spending reaches a certain level its effectiveness on growth declines compared with extra tax cuts. So while growth permits rising net spending consistently with solvency, it is most beneficial to cut taxes after initially higher spending. This is illustrated in the following Figure which shows the solvency constraint side by side with the effects on growth of a) higher spending and b) lower taxes.

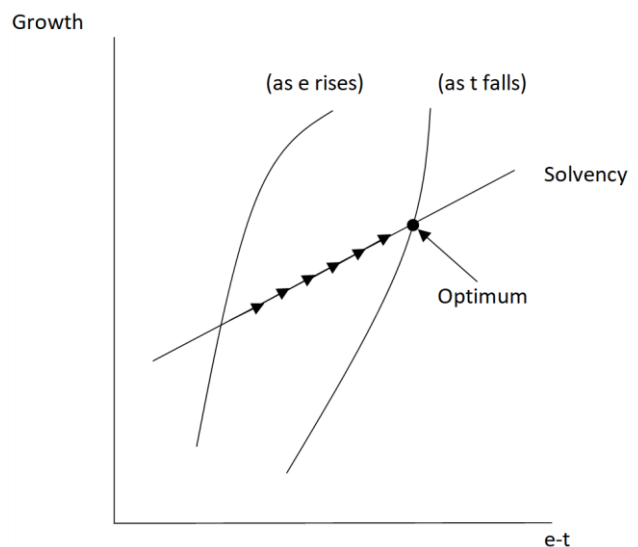
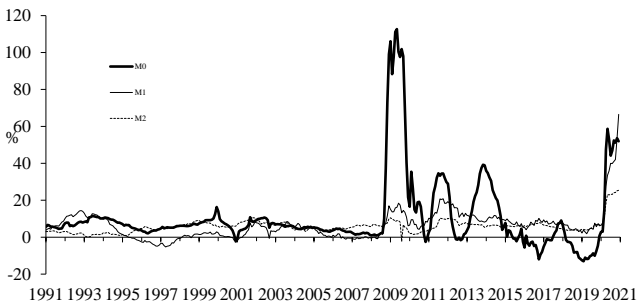


Figure: Illustration of growth possibilities

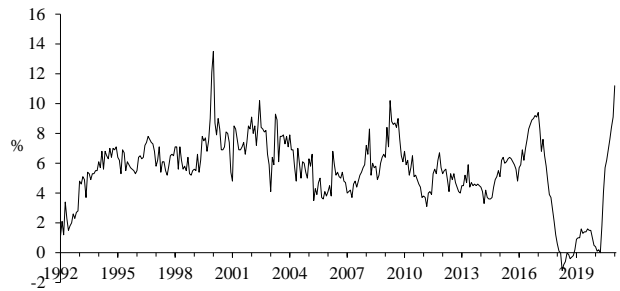
Translating all this into practical politics, we can summarise the situation as one in which the government has considerable fiscal flexibility owing to very low interest rates. It can without any threat to its solvency both cut tax rates and raise spending to support growth post-Brexit/Covid; of these two the most powerful in raising Northern growth will be tax cuts. The key priority is to boost

growth through effective supply-side policy. It should also support demand at the same time as this supply-side policy, both to keep the recovery going and to push interest rates up towards monetary normality.

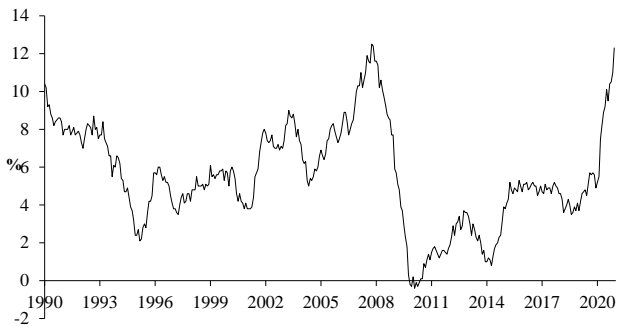
U.S.: Growth in Monetary Aggregates (Yr - on - Yr)



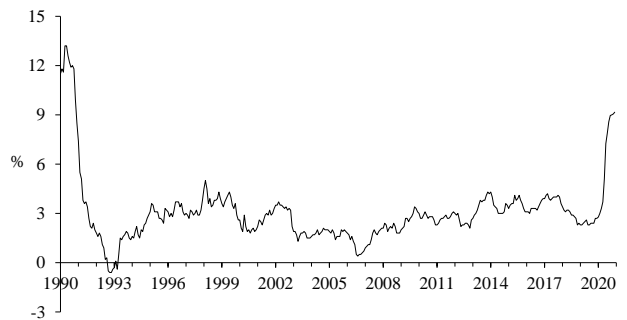
UK: Notes and Coins in Circulation Growth



Eurozone M3 Growth



Japan: Growth of M2+CD's



FOCUS ON JAPAN

Francesco Perugini

Are the Tokyo Olympics Going Ahead?

When the Tokyo Olympics were postponed last year, officials promised they would open in 2021 as proof of mankind's triumph over the coronavirus. But six months before the rescheduled start, victory over the virus remains distant, and fears are growing rapidly that the Games may not take place at all. Last month the International Olympic Committee (IOC) president Thomas Bach vowed that the event would go ahead. He said: "Our task is to organize the Olympic Games and not to cancel them", he said at a press conference. IOC spokesperson Dick Pound added he was "confident" the Games would go ahead, saying "I think unless some drastic changes occur, this is a manageable proposition and I hope that we're able to pull it off". Also, Japan's Prime Minister Yoshihide Suga remains optimistic. At a press conference he said that vaccines are the key to making the world's premier sports event happen. "I want to start vaccinations in Japan by the end of February", he added. "If we take appropriate measures, I think the public feelings toward the Olympics will change".

But Suga's optimism is not shared by many Japanese people, as the government will not be able to secure enough supplies to vaccinate its 126 million population until the end of June, just one month before the Tokyo Games are scheduled to start on July 23. Recently, two polls conducted by the Japanese news agency Kyodo and TBS the Tokyo Broadcasting System, revealed that more than 80% of respondents opposed hosting the event this year, with 35% favouring outright cancellation and 45% calling for further postponement.

Tokyo is battling a surge of COVID-19 cases that prompted the national government last month to call a state of emergency. Japan has controlled the virus relatively well, and it is still ranked 147th out of 220 countries in terms of the number of positive tests per one million of population as of Jan. 20. However, with about 15,000 athletes and match officials — as well as a large influx of foreign visitors — expected to travel to Japan for the Olympics, Tokyo residents are worried about a further spike in infections. The Tokyo Olympics could turn Japan into a world super spreader. Moreover, the issue of vaccine availability is not just Japan's problem, with so many athletes in so many countries unable to train and take part in qualifying competitions because of vaccine shortages. Even the US is now unlikely to be able to vaccinate its 300 million people until after the middle of the year.

So far, the coronavirus has taken a considerable financial toll. Tokyo 2020's latest budget was revealed as ¥1.64 trillion yen (15.8 billion US dollars) in December, up ¥294 billion yen because of costs linked to the delay and virus

countermeasures. There are suggestions the final price-tag may be significantly higher, possibly making the event the most expensive Summer Olympics in history. Efforts to reduce costs by cutting back on athlete welcome ceremonies and other trimmings have produced only minimal savings, though organisers say they have managed to keep all domestic sponsors on board. Meanwhile many athletes are still uncertain of qualification, with several events outstanding. Disruption to training and competition schedules is also causing huge uncertainty.

Thus, the most recent wave of the pandemic has increased the chance that the Olympics be cancelled or postponed again. This would certainly have a negative effect on the Japanese economy and further drag down the economic growth of Japan. Calculating the cost of cancellation is complicated. Some observers are more pessimistic. "The tourism sector and related businesses would see damage", said Tomoaki Iwai, a political science professor at Nihon University. Some are also afraid of the even higher costs of implementing coronavirus countermeasures to make the games safe. Katsuhiko Miyamoto, an honorary professor at Kansai University, estimated a loss of about ¥4.5 trillion (0.8% of GDP) if the Tokyo Games are cancelled.

However, some observers believe that the Games will not be cancelled given that the committee has collected huge sponsorship fees from Toyota Motor Corporation and Coca-Cola among other major companies. In addition, for the Switzerland-based IOC, it is a question of stabilizing its shaky income, 73% of which comes from selling broadcast rights — getting the Olympics on television. Another 18% is from sponsorships. These observers also believe that organisers will be able to monitor the health and control the movements of 15,000 in a "sanitary bubble" in Tokyo. Spectators, though, pose a much bigger problem. Ideas being floated by the IOC and organisers range from allowing full stadiums, cutting venue capacities by half and banning spectators — an approach publicly backed by Mitt Romney and Sebastian Coe, both of whom have previously organised Olympic Games — in what would be the first Olympics watched entirely on TV. However, "holding the Games without spectators would result in an economic loss of up to ¥2.4 trillion, said Katsuhiko Miyamoto.

Whatever the prevailing view among politicians, Japan's Olympic sponsors have scaled back advertising campaigns and delayed marketing events. Firms including Canon and Japan Airlines are concerned that organisers have not shared contingency plans for a cancellation. Thomas Bach recently said "there is no plan B". The last time Bach insisted there was "no plan B" was in March 2020, just days before the pandemic finally caught up with the Olympic movement.

MARKET DEVELOPMENTS

Growth should recover strongly in the post-Covid period and this will be good for equities. Interest rates should rise and the monetary scene get back towards normal.

Table 1: Market Developments

	Market Levels		Prediction for Jan/Feb 2022	
	Jan 6	Feb 5	Previous Letter	Current View
Share Indices				
UK (FT 100)	6842	6489	10694	10143
US (S&P 500)	3748	3887	5101	5290
Germany (DAX 30)	13892	14057	22797	23067
Japan (Tokyo New)	1796	1891	2105	2216
Bond Yields (government)				
UK	0.25	0.51	0.50	0.50
US	1.04	1.18	1.30	1.30
Germany	-0.55	-0.43	-0.20	-0.20
Japan	0.04	0.07	0.00	0.00
UK Index Linked	-2.25	-2.15	1.00	1.00
Exchange Rates				
UK (\$ per £)	1.36	1.37	1.30	1.30
UK (trade weighted)	78.39	80.00	80.0	80.0
US (trade weighted)	99.31	100.05	102.5	102.5
Euro per \$	0.81	0.83	0.88	0.88
Euro per £	1.10	1.14	1.14	1.14
Japan (Yen per \$)	103.39	105.47	107.5	107.5
Short Term Interest Rates				
UK	0.83	0.83	0.30	0.30
US	0.25	0.22	1.00	1.00
Euro	-0.40	-0.40	-0.50	-0.50
Japan	-0.05	-0.05	0.10	0.10

Table 2: Prospective Yields ¹

Equities: Contribution to £ yield of:						
	Dividend Yield	Real Growth	Inflation	Changing Dividend Yield	Currency	Total
UK	3.60	2.4	1.9	52.00		59.90
US	1.99	2.2	2.0	31.90	5.29	43.38
Germany	3.30	1.6	1.5	61.00	-0.22	67.18
Japan	1.90	0.6	1.6	15.00	3.46	22.56
UK indexed ²	-2.25		2.0	8.00		7.76
Hong Kong ³	2.60	5.5	2.0	5.00	5.29	20.39
Malaysia	3.30	6.9	2.0	85.00	5.29	102.49
Singapore	3.50	5.0	2.0	54.00	5.29	69.79
India	1.40	5.0	2.0	14.00	5.29	27.69
Korea	1.10	2.0	2.0	-9.00	5.29	1.39
Indonesia	2.20	4.8	2.0	41.00	5.29	55.29
Taiwan	2.80	2.9	2.0	38.00	5.29	50.99
Thailand	3.20	4.1	2.0	51.00	5.29	65.59
Bonds: Contribution to £ yield of: –						
	Redemption Yield	Changing Nominal Rates	Currency	Total		
UK	0.51	0.06				0.57
US	1.18	-1.24	5.29			5.22
Germany	-0.43	-2.27	-0.22			-2.92
Japan	0.07	0.65	3.46			4.18
Deposits: Contribution to £ yield of:						
	Deposit Yield	Currency	Total			
UK	0.83		0.83			
US	0.22	5.29	5.51			
Euro	-0.40	-0.22	-0.62			
Japan	-0.05	3.46	3.41			

¹ Yields in terms of €s or \$s can be computed by adjusting the £-based yields for the expected currency change.

² UK index linked bonds All Stocks

³ Output based on China.

Table 3: Portfolio(%)

	Sterling Based Investor		Dollar Based Investor		Euro Based Investor	
	January Letter	Current View	January Letter	Current View	January Letter	Current View
UK Deposits (Cash)	5	5	5	5	1	1
US Deposits	-	-	-	-	-	-
Euro Deposits	-	-	-	-	-	-
Japanese Deposits	-	-	-	-	-	-
UK Bonds	-	-	-	-	-	-
US Bonds	-	-	-	-	-	-
German Bonds	-	-	-	-	-	-
Japanese Bonds	-	-	-	-	-	-
UK Shares	19	19	14	14	17	17
US Shares	14	14	19	19	16	16
German Shares	14	14	14	14	21	21
Japanese Shares	9	9	9	9	11	11
Hong Kong/Chinese Shares	4	4	4	4	4	4
Singaporean Shares	4	4	4	4	4	4
Indian Shares	4	4	4	4	4	4
Thai Shares	3	3	3	3	3	3
South Korean Shares	4	4	4	4	4	4
Taiwanese Shares	4	4	4	4	3	3
Brazilian Shares	4	4	4	4	3	3
Chilean Shares	4	4	4	4	3	3
Mexican Shares	4	4	4	4	3	3
Peruvian shares	4	4	4	4	3	3
Other:						
Index-linked bonds (UK)	-	-	-	-	-	-

INDICATORS AND MARKET ANALYSIS

FOREIGN EXCHANGE MARKETS

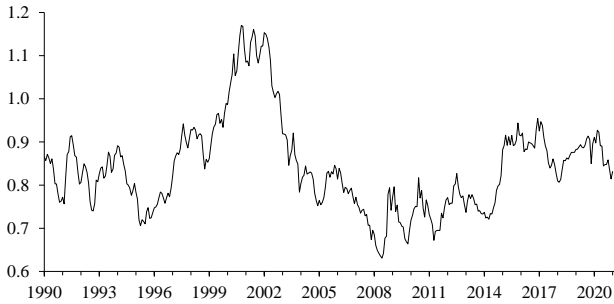
**US : Trade Weighted Index
(Bank of England 1990 = 100)**



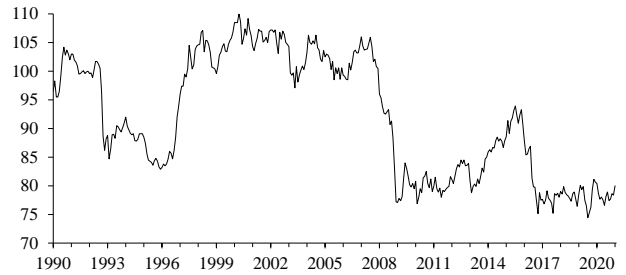
UK: Dollars Per Pound Sterling



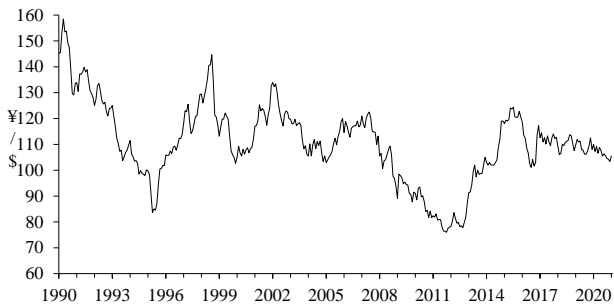
Euro per US dollar



**UK: Trade-Weighted Index
(Bank of England 1990 = 100)**



Japan : Yen Per U.S. Dollar

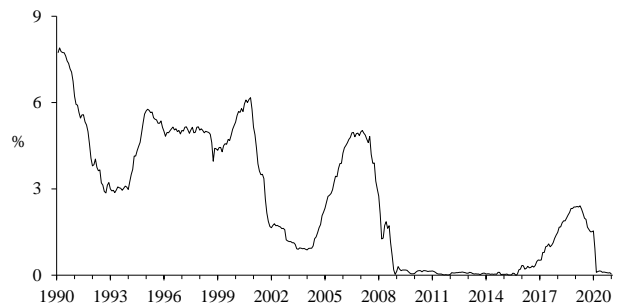


GOVERNMENT BOND MARKETS

U.S.: Yield on Long-Term Government Bonds



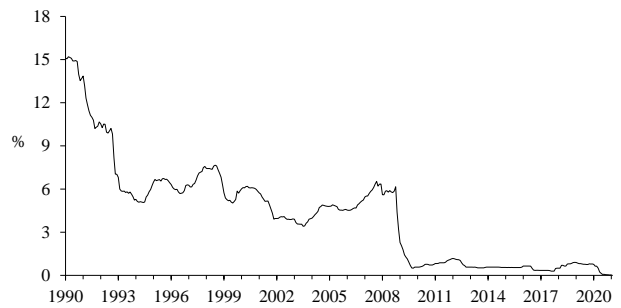
U.S. : 3-Month Treasury Bill



U.K.: Yield on Long-Term Government Bonds



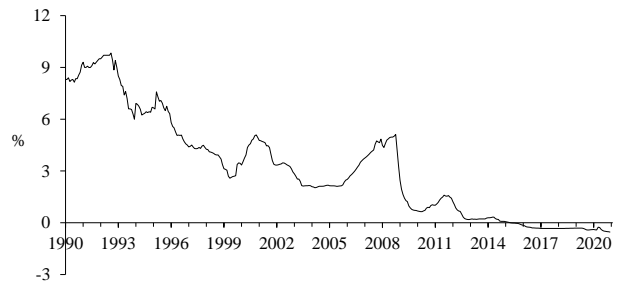
U.K. : 3-Month Certificate LIBOR Rate



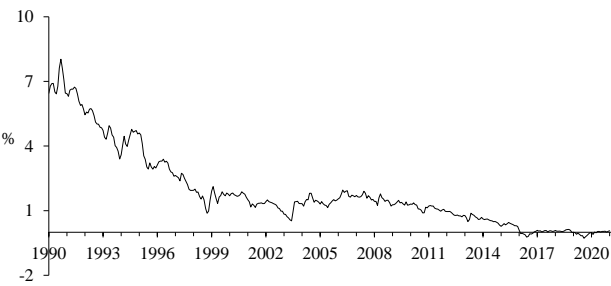
Germany: Yield on Public Authority Bonds



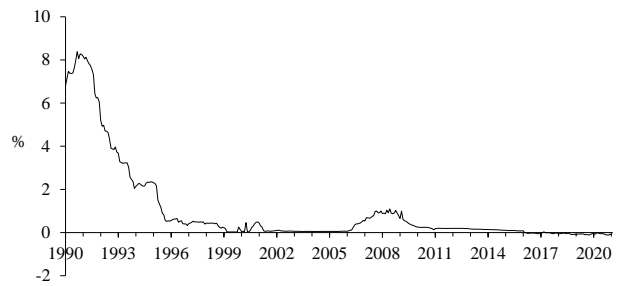
Germany : 3-Month Interbank Deposit Rate



Japan: Yield on Long-Term Government Bonds



Japan : 3-Month Money Market Rate

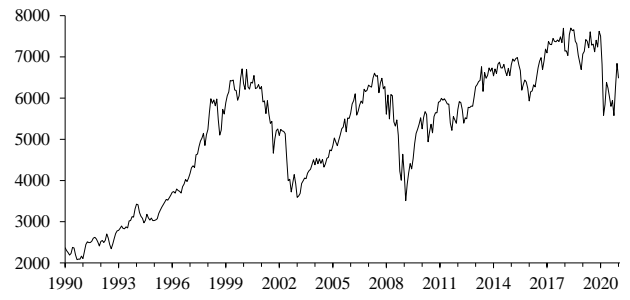


MAJOR EQUITY MARKETS

**U.S. : S & P 400 Industrial
(1985=100)**



**U.K. : FTSE-100 Index
(10 April 1962=100)**



Germany : DAX 30



**Japan : Tokyo S.E. New
(1985=100)**



EMERGING MARKETS

Anupam Rastogi

India

India's gross domestic product is expected to shrink 7.7% this fiscal year mainly due to the coronavirus pandemic and the three month long nationwide lockdown in 2020 to contain the disease. GDP growth in 2019–20 was revised to 4% from 4.2% estimated earlier. The fiscal deficit is projected to overshoot the initial estimates, 3.5% of GDP, to 9.5% in the financial year ending in March.

Finance Minister Nirmala Sitharaman presented the fiscal 2021–22 budget on February 1 and it has indicated a change in fiscal deficit targets. The capital expenditure will increase to Rs 5.54 trillion for FY22 as against Rs 4.39 trillion for FY21. The FY22 disinvestment target is raised to Rs 1.75 trillion. There were no changes in direct taxes. Markets welcomed the budget as there was no increases in capital gain tax or Stock Transaction Tax or any form of Covid tax. Tax buoyancy, successful divestments and quick monetization of operating infrastructure assets remain a key to achieving the fiscal deficit target of 6.8% for FY 21–22.

The government has argued that to sustain the recovery in aggregate demand, the government has to continue with an expansionary fiscal stance. The growth recovery would facilitate buoyant revenue collections in the medium term and enable a sustainable fiscal path. The government expects a “V-shaped recovery” from the lockdown-induced crash in the first quarter of 2020–21. In the second half of 2020–21 faster-than-anticipated economic recovery is underway and the government is pushing for huge infrastructure investment, the roll-out of the vaccine, and targeted moves like the production-linked incentive scheme for manufacturers. This would lead to GDP growth of 11% in 2021–22. The International Monetary Fund has projected an impressive 11.5% growth rate for India in 2021, making the country the only major economy of the world to register a double-digit growth this year amid the pandemic.

Retail inflation fell sharply to 4.6% in December but it remained above 6% for the major part of 2020. This rules out an immediate cut in interest rate by RBI. Reasons for inflation to remain sticky are costlier food items, broken supply chains due to a strict lockdown, and hefty levies on already rising retail fuel prices.

India has recorded a current account surplus of 3.1% of GDP in the first half of the year largely supported by strong exports of services. India will end with an annual current account surplus of ~2% of GDP.

The Indian rupee has been near its fair value under a broader real effective exchange rate index of 40 currencies, according to a working paper released in the central bank's

India: BSE Sensitive



China: SSE Composite Index



monthly bulletin. With India having a crude oil import dependence of more than 80% of its needs, rising global oil prices driven by a global economic recovery in 2021, will see a worsening of the nation's terms of trade, and put depreciatory pressure on the rupee. We forecast Indian rupee to average Rs 76 to a US dollar in 2021.

Finance minister Nirmala Sitharaman's “Budget like never before”, addressed the voiceless millions who have been pushed back into poverty by the pandemic — the largest among all countries. Through the Production Linked Incentive (PLI) schemes, the country has trained its sights on electronics & electricals, machinery, automobile, pharma and medical equipment — the major contributors to global trade- and comprising about 40% of global imports. India's share is less than 0.9% and it wants to increase it rapidly.

	19–20	20–21	21–22	22–23	23-24
GDP (%p.a.)	4.0	-7.5	11.0	5.5	6.0
WPI (%p.a.)	3.6	5.5	5.0	5.0	4.8
Current A/c(US\$ bill.)	-20.0	35.0	20.0	-10.0	-10.0
Rs./\$(nom.)	73.0	75.0	76.0	77.0	78.0

China

China's GDP is expected to grow 2% in 2020. This makes China the only major economy to grow. Growth will recover to 7.5% in 2021 and slow down to 5.2% in 2022. The predicted growth for 2021 would be the best reading in a

decade. It is rendered less impressive coming off the low base set last year.

The Year of Covid accelerated its movement toward the centre of a global economy long dominated by the U.S. The world is more reliant on China for growth now. In 2020, China's economy is expected to account for 16.8% of global gross domestic product. This is up from 14.2% in 2016. The U.S. is expected to keep its share of the world economy ~22.2% as it was in 2016.

China's consumer inflation is likely to slow to 1.8% in 2021 from 2% in 2020, but it could pick up to 2% in 2022. Nevertheless, for the whole of this year, we see inflation very much under control even with commodity prices picking up.

The PBOC will scale back support for the economy in 2021 and cool credit growth, but fears of derailing growth recovery and debt defaults are likely to prevent it from tightening anytime soon.

The central bank has cut interest rates and reserve ratios since February to support the virus-hit economy. But it has shifted to a steadier stance in recent months and has kept its benchmark lending rate, the loan prime rate (LPR), unchanged since May. We expect one-year LPR steady at 3.85% until the end of 2021. The LPR has remained unchanged since May. The PBOC has also kept deposit rates steady at 1.5% since October 2015.

China's export boom continued into December, pushing the trade surplus to a record high in the month. Exports are related to surging demand for work-from-home technology and health care equipment as Covid-19 continues to play havoc in many places around the world. Demand is so strong that it is contributing to a bottleneck at ports as manufacturers complain of a shortage of shipping containers and surging costs.

The coronavirus dealt a blow to global trade in 2020, but not in China, where exports rose last year to their highest level on record. Exports grew 18.1% in dollar terms in December from a year earlier — softer than November's bumper 21.1% expansion — while imports rose 6.5%. For the full year, the trade surplus reached \$535 billion, a 27% increase from 2019 and the highest since 2015.

The yuan has reached its strongest level in two and a half years against the US dollar in 18 months.

At ~6.5 CNY per dollar, it looks poised to jump even more. Apart from trade surplus, China is attracting huge investment demand. At a time when interest rates around the world are approaching zero, China's benchmark rates (at 3.85%) look lucrative. Higher returns have encouraged investors to buy yuan assets. No doubt that some of the yuan's strength is relative. The US dollar has been weakening as the Chinese currency is gaining. With respect to the euro, the yuan has barely changed, with the euro itself

Korea: Composite Index



gaining 9.9% against the USD since then. But what this means is a weakened USD might further push investors to move their money to safe-haven currencies and riskier assets — emerging markets such as China being the prime destination.

Reasons for the yuan to appreciate are as follows. One, Beijing wants to encourage the development of the domestic economy. A strong currency lowers the price of imported goods and boosts spending. Two, a weakened yuan had started encouraging outward flow of assets. A stronger currency will bring them back. The yuan will become more popular among investors if it continues to deliver gains to Chinese asset holders. Three, Chinese politicians like to consider an appreciating currency as a sign of development and strength. We expect the Chinese currency to strengthen to Rmb6.2 per dollar by year end.

China overtook the U.S. as the world's top destination for new foreign direct investment last year, as the Covid-19 pandemic amplifies an eastward shift in the centre of gravity of the global economy. New investments by overseas businesses into the U.S., which for decades had held the first position, fell 49% in 2020, according to U.N. figures, as the country struggled to curb the spread of the new coronavirus and economic output slumped.

	19	20	21	22	23
GDP (%p.a.)	6.1	2.0	7.5	5.2	5.0
Inflation (%p.a.)	2.9	2.5	1.8	2.0	2.0
Trade Balance(US\$ bill.)	40.0	60.0	50.0	40.0	42.0
Rmb/\$ (nom.)	7.1	6.7	6.6	6.5	6.0

South Korea

South Korea's GDP grew 1.1% in the fourth quarter of 2020 from the prior quarter, after expanding 2.1% in the third quarter. GDP, which is export dependent, contracted 1.0% in 2020 from a year ago. Let us analyse how GDPs components functioned last year.

The COVID-19 pandemic weakened both export and consumers spending in South Korea.

Private consumption contracted 5% in 2020 even though the fiscal expenditure grew 5% as the government unveiled four

supplementary budget schemes worth over 300 trillion won (270 U.S. dollars) last year to tackle the demand compression in the economy. Exports, which account for about half of the export-driven economy, diminished 2.5% last year, marking the first fall in 11 years. This marked the third instance of negative annual growth in South Korean history. The first was in 1980 (-1.6%) due to the 1979 oil crisis; the second was in 1998 (-5.1%) in the aftermath of the Asian financial crisis.

As inflation remained almost non-existent, the central bank kept its policy rate unchanged at a record-low 0.50% after having made cuts totalling 75 basis points last year to help support the pandemic-hit economy.

The country's exports advanced 5.2% in the fourth quarter, after jumping 16% in the third quarter due to a partial recovery in global demand. Imports gained 2.1% in the fourth quarter on a quarterly basis, after increasing 5.6% in the third quarter.

The won broke through the key psychological level of 1,100 per dollar in December, even after Bank of Korea Governor Lee Ju-Yeol said authorities were ready to act against sharp moves. Each incremental gain in the currency is chipping away at the competitiveness of Korean exporters, adding to the risk that policy makers will intervene. Recovery in global growth in 2021 and equity inflows retain a strengthening bias of the won in medium-term.

	19	20	21	22	23
GDP (%p.a.)	1.8	-1.0	3.0	2.2	1.5
Inflation (%p.a.)	0.4	0.5	1.0	1.2	1.0
Current A/c(US\$ bill.)	60.0	70.0	60.0	40.0	10.0
Won/\$ (nom.)	1200	1070	1000	1000	950

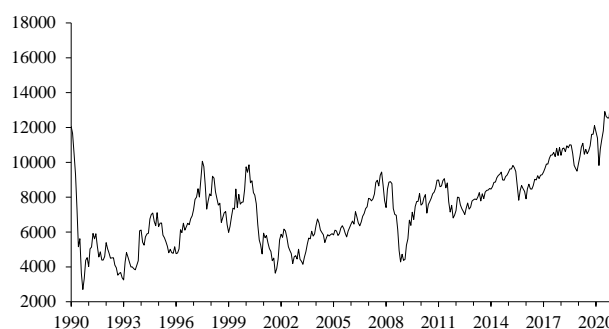
Taiwan

Taiwan's GDP grew by 2.98% last year, making Taiwan one of the world's strongest performing economies during the coronavirus pandemic. It recorded fewer than 900 cases and just seven deaths after it swiftly locked down its borders. We expect Taiwan to register economic growth of 4%, helped by its early control of coronavirus and stellar export performance. Taiwan's fourth quarter growth in 2020 was especially strong — up 4.94% on year, the best quarterly performance since early 2011. Taiwan's economic growth outpaced that of China's for the first time in 30 years.

Taiwan's central bank left its policy rate unchanged at 1.125%, the lowest on record, and raised its growth outlook for 2020. Inflation remained well under control.

Exports jumped to a historic high in 2020 to \$345 billion, up 4.9% on-year despite the global economic slowdown.

Taiwan: Weighted TAIEX Price Index



Taiwan is a major world player in electronics and holds a monopoly in supplying crucial latest generation semiconductors and microchips. The higher export value of semiconductors came from an increase in both prices and volumes.

The Taiwan dollar was Asia's best performing currency in 2020. It appreciated 6.9% against the dollar. Taiwanese assets are attractive to global investors because of its booming technology sector, with export orders growing at the fastest pace since 2010. Foreign inflows are growing. Currency is being boosted by foreign inflows amid tech boom and authorities are working hard to stop the local dollar from strengthening. the Taiwanese dollar's strength has left no room for a rate rise, as higher rates would impose further pressure for the currency to appreciate more.

Taiwan's future growth depends on the US and China relationship and remains a flashpoint. China insists that its 'One China' policy is non-negotiable whereas the US administration under Trump tried to debunk the One China policy. For the time being the Biden's administration is playing safe.

The U.S. ambassador to the United Nations, Kelly Craft, visit to Taiwan in January was cancelled. Her visit would have been first such visit since Taiwan was excluded from the UN in 1971. It seems that Beijing has got a nod that Washington will adhere to 'One China' principle for the time being. The U.S. State Department urged China to engage in a dialogue with Taiwan and halt military pressure on the island after People's Liberation Army flew more than a dozen fighter jets and bomber planes over Taiwan defence zone.

	19	20	21	22	23
GDP (%p.a.)	2.0	3.0	4.0	3.0	3.0
Inflation (%p.a.)	1.0	-1.0	1.0	1.0	1.0
Current A/c(US\$ bill.)	70.0	71.0	70.0	60.0	65.0
NT\$/\$(nom.)	31.0	29.0	28.5	28.0	27.0

Brazil

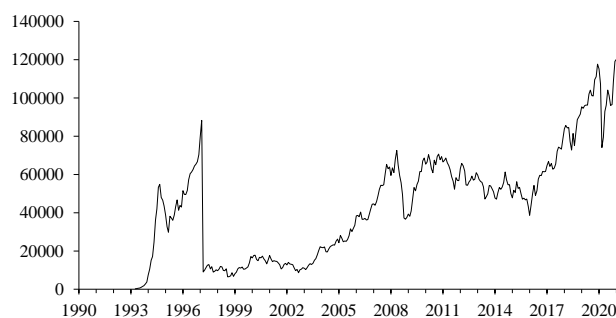
Thanks to stimulus and monetary support provided to the public, Brazil's economy contracted only 4.5% in 2020. Outside the United States, Brazil is going to record the world's worst COVID-19 death toll. Brazil will take some time to recover from COVID-19. The World Bank expects the economy to grow 3% in 2021 compared to government forecast of 3.5%. The government hopes that a flood of investment into concessions and privatizations will boost the cyclical recovery. We forecast a stop-and-go type of recovery as ban on travel and restaurants are hurting services, while industry and agriculture lead growth.

Annual inflation in Brazil was 4.5% in 2020, modestly above the central bank's year-end target as food prices rose the most in nearly two decades. The central bank expects the inflation spike to be temporary and the "transitory" jump in food and commodity prices will fade away soon.

Inflation stood at 4.3%, while the target is 3.75%. Although the preliminary January figure represents a decrease from December's full-month figure of 4.5%, it is likely to reinforce the tighter policy approach adopted by the central bank earlier this month. The central bank has kept its benchmark Selic interest rate unchanged as the inflation outlook deteriorates while the country struggles with the economic impact of Covid-19. The bank has dropped its previous forward guidance as policy makers want to have flexibility to raise rates if necessary in the coming months. A central bank's survey of economists forecasts the benchmark Selic interest rate to 3.25% at the end of 2021 and 4.75% at the end of next year.

The trade surplus was up 6% from the previous year's \$48.1 billion surplus, according to the government and it expects a

Brazil: Bovespa



\$53 billion surplus this year. As commodity demand grows from the East Asian countries, Brazil will see value of its exports to increase.

The real remained as the most volatile currency in the world in 2020 and it is unlikely to be very different in 2021. The real has fallen every year since 2011 with one exception, going from about 1.66 per dollar at the end of 2010 to 5.19 at the close of 2020. The fiscal and political uncertainty leave the currency more sensitive to global drivers than peers. Assuming that the government puts a spending cap rule that limits the increase in public expenditure and the central bank is able to control the inflation rate we hope that real will be 4.9 per dollar and at 4.75 per dollar by the end of 2021 as exports get a push from a rebound in the world economy.

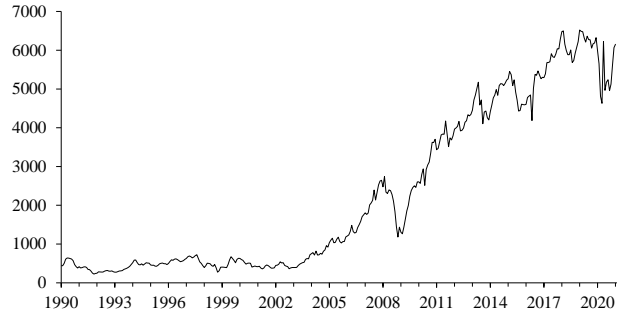
	19	20	21	22	23
GDP (%p.a.)	0.8	-4.5	3.0	2.5	3.0
Inflation (%p.a.)	4.3	4.5	4.0	4.0	4.0
Current A/c(US\$ bill.)	-36.0	-7.6	-20.0	-26.0	-22.0
Real/\$ (nom.)	4.2	5.5	4.9	4.8	4.7

Other Emerging Markets

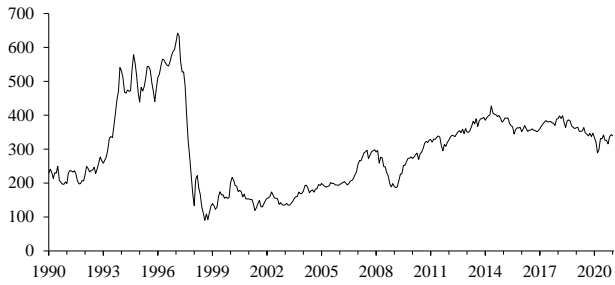
Hong Kong: FT-Actuaries



Indonesia: Jakarta Composite



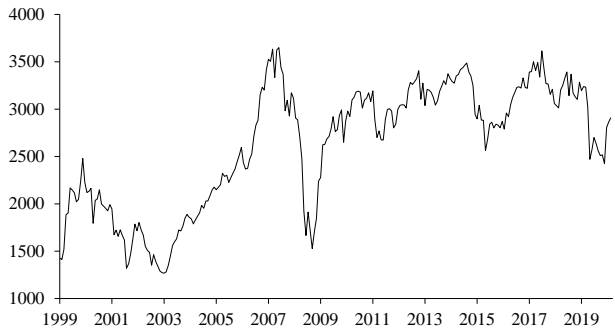
**Malaysia: FT-Actuaries
(US\$ Index)**



Thailand: Composite Index



Singapore: Straits Times Index

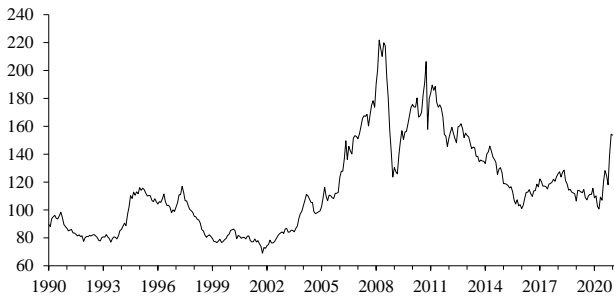


Philippines: Manila Composite

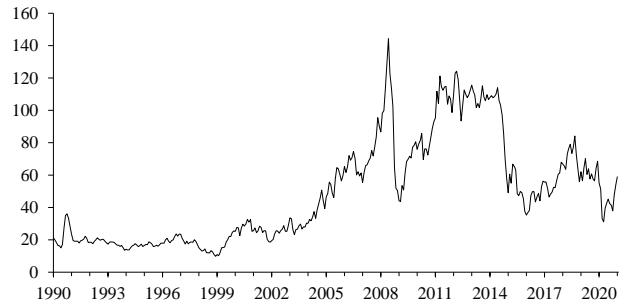


COMMODITY MARKETS

Commodity Price Index (Dollar)
(Economist, 2015 = 100)



Oil Price: North Sea Brent (in Dollars)



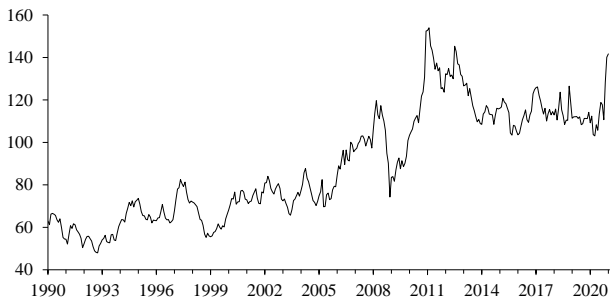
Commodity Price Index (Sterling)
(Economist, 2015 = 100)



Gold Price (in Dollars)



Commodity Price Index (Euro)
(Economist, 2015 = 100)



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	2.4	1.0	0.7	78.6	76.9	-1.1	3.3	-1.0
2019	1.8	0.6	0.8	78.1	75.9	-0.1	2.5	-1.1
2020	0.9	0.2	0.2	78.6	73.5	-1.4	1.2	-1.6
2021	1.6	0.4	0.2	80.1	75.5	-1.8	2.2	-1.5
2022	2.1	1.8	1.5	80.0	75.8	-0.5	3.0	-0.2
2023	2.0	4.7	4.5	79.9	76.0	2.5	2.7	2.7
2020:1	1.4	0.4	0.6	79.5	74.9	-0.6	2.7	-1.3
2020:2	0.6	0.0	0.1	77.6	71.9	-1.4	1.4	-1.8
2020:3	0.7	0.1	0.1	77.7	72.4	-1.6	0.3	-1.8
2020:4	1.0	0.4	0.1	79.6	74.8	-1.8	0.6	-1.5
2021:1	1.2	0.4	0.2	79.6	75.2	-1.9	1.6	-1.6
2021:2	1.5	0.4	0.2	80.7	75.7	-1.9	1.9	-1.6
2021:3	1.7	0.5	0.3	80.2	75.7	-1.8	2.4	-1.5
2021:4	1.9	0.5	0.3	80.0	75.5	-1.7	2.8	-1.5
2022:1	2.1	1.0	1.0	79.5	75.4	-0.9	3.3	-1.0
2022:2	2.1	1.8	1.5	80.5	76.0	-0.5	3.0	-0.2
2022:3	2.1	2.0	1.6	80.1	75.9	-0.4	2.9	0.0
2022:4	2.0	2.5	2.0	80.0	75.8	0.0	2.7	0.5

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 (New Basis) Percent ³	Millions	Real Wage Rate ⁴ (1990=100)
2018	266.6	3.0	4.1	1.1	142.8
2019	275.7	3.5	3.8	1.0	148.8
2020	275.9	0.3	5.0	1.3	147.9
2021	282.1	2.3	5.6	1.5	148.9
2022	291.0	3.2	3.6	1.0	150.5
2023	300.6	3.3	2.9	0.8	152.4
2020:1	279.7	2.7	4.0	1.0	150.0
2020:2	270.1	-0.5	4.1	1.1	145.9
2020:3	276.4	-0.6	4.8	1.3	147.8
2020:4	277.3	-0.2	6.9	1.8	148.0
2021:1	279.4	-0.1	6.4	1.7	147.9
2021:2	278.6	3.2	5.8	1.5	148.3
2021:3	284.4	2.9	5.3	1.4	149.5
2021:4	285.9	3.1	4.7	1.2	149.8
2022:1	288.1	3.1	4.2	1.1	149.4
2022:2	287.8	3.3	3.8	1.1	150.0
2022:3	293.3	3.1	3.3	0.9	151.1
2022:4	294.7	3.1	3.0	0.8	151.4

¹ Whole Economy

² Average Earnings

³ Wholly unemployed excluding school leavers as a%age of employed and unemployed, self employed and HM Forces

⁴ Wage rate deflated by CPI

Estimates and Projections of the Gross Domestic Product¹ (£ 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	792330.9	445721.1	307723.0	201029.6	-41308.9	120833.9
2019	167.8	803514.4	475369.3	308458.5	209136.4	-70959.7	118490.1
2020	150.0	718476.1	420452.9	249418.8	199237.6	-30051.5	120581.7
2021	158.1	756923.9	447041.8	266059.5	206929.7	-33024.7	130082.4
2022	164.7	788777.8	453549.5	290984.1	208197.1	-30743.3	133209.6
2023	170.0	814289.1	460358.3	309186.2	209439.4	-28806.2	135888.6
2018/17	1.3		1.0	2.3	0.2		-4.6
2019/18	1.4		1.1	-4.7	2.2		-12.4
2020/19	-10.6		-11.6	-19	-4.8		6.8
2021/20	6.1		7.3	9.4	4.4		4.9
2022/21	4.2		1.5	9.3	0.6		3.3
2023/22	3.2		1.5	6.3	0.6		3.3
2020:1	164.2	196593.0	118032.8	72147.1	51656.8	-11632.2	33611.5
2020:2	131.7	157646.1	91565.8	47009.3	43743.5	429.6	25102.1
2020:3	151.1	180847.7	99893.7	71247.0	50846.1	-10259.5	30879.6
2020:4	153.2	183389.3	110960.6	59015.4	52991.2	-8589.3	30988.6
2021:1	156.8	187734.8	112264.9	71379.2	51092.1	-14304.1	32697.3
2021:2	158.7	189958.1	111099.5	63816.2	51382.0	-4227.8	32111.8
2021:3	157.4	188426.7	111232.3	65413.0	51174.4	-6797.8	32595.2
2021:4	159.4	190804.2	112445.1	65451.1	53281.3	-7695.0	32678.3
2022:1	165.5	198169.7	113844.0	80174.4	51388.5	-13800.2	33437.0
2022:2	164.7	197178.3	112654.9	69212.6	51690.2	-3387.5	32991.9
2022:3	162.6	194610.3	112897.7	70334.8	51481.4	-6585.6	33518.0
2022:4	166.1	198819.5	114152.9	71262.3	53637.0	-6970.1	33262.6

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)	Debt Interest (£bn)	Current Account (£ bn)
			Financial Year		
2018	1.9	2092.5	39.3	22.4	-82.9
2019	2.0	2127.5	43.2	24.0	-83.8
2020	17.9	1955.7	332.5	25.8	-42.1
2021	7.2	2149.6	155.3	26.8	-47.1
2022	3.8	2276.2	86.4	29.2	-41.1
2023	1.7	2397.8	40.4	33.4	-36.8
2020:1	-0.9	542.0	-5.0	6.5	-20.6
2020:2	39.4	431.7	170.1	6.4	-2.8
2020:3	12.0	495.3	59.4	6.4	-14.7
2020:4	11.8	508.4	60.0	6.5	-4.0
2021:1	8.3	520.3	43.0	6.6	-26.3
2021:2	7.3	526.6	38.5	6.6	-12.2
2021:3	7.6	526.8	40.2	6.7	-6.8
2021:4	8.1	534.9	43.5	6.7	-1.8
2022:1	5.9	561.4	33.0	6.8	-24.9
2022:2	4.3	557.9	24.2	6.9	-10.3
2022:3	4.9	554.6	27.0	7.0	-5.9
2022:4	4.8	570.7	27.5	7.5	0.0

¹ GDP at market prices (Financial Year)

WORLD FORECAST DETAIL

Growth Of Real GNP

	2017	2018	2019	2020	2021	2022
U.S.A.	2.3	3.0	2.2	-3.6	4.0	2.5
U.K.	1.8	1.3	1.4	-10.6	6.1	4.2
Japan	2.2	0.3	0.7	-5.3	2.6	1.0
Germany	2.6	1.3	0.6	-5.4	3.9	2.0
France	2.4	1.8	1.5	-9.3	5.9	2.0
Italy	1.7	0.9	0.3	-9.0	4.9	1.9

Growth Of Consumer Prices

	2017	2018	2019	2020	2021	2022
U.S.A.	2.1	2.4	1.8	2.0	2.0	2.0
U.K.	2.6	2.4	1.8	0.9	1.6	2.1
Japan	0.5	1.0	0.5	0.0	0.0	0.5
Germany	1.5	1.8	1.4	0.5	1.5	1.7
France	1.0	1.8	1.1	0.5	0.8	1.5
Italy	1.2	1.2	0.6	-0.2	0.4	1.0

Real Short-Term Interest Rates

	2017	2018	2019	2020	2021	2022
U.S.A.	-1.0	0.6	-0.5	-1.6	-1.0	0.0
U.K.	-2.0	-1.1	-0.1	-1.4	-1.9	-0.5
Japan	-0.9	-0.4	0.1	0.0	-0.4	-0.5
Germany	-2.1	-1.7	-0.9	-1.9	-2.2	-1.9
France	-2.1	-1.4	-0.9	-1.2	-2.0	-1.7
Italy	-1.5	-0.9	-0.2	-0.8	-1.5	-1.4

Nominal Short-Term Interest Rates

	2017	2018	2019	2020	2021	2022
U.S.A.	1.4	2.4	1.5	0.4	1.0	2.0
U.K.	0.4	0.7	0.8	0.2	0.2	1.8
Japan	0.1	0.1	0.1	0.0	0.1	0.1
Germany	-0.3	-0.3	-0.4	-0.4	-0.5	-0.1
France	-0.3	-0.3	-0.4	-0.4	-0.5	-0.1
Italy	-0.3	-0.3	-0.4	-0.4	-0.5	-0.1

Real Long-Term Interest Rates

	2017	2018	2019	2020	2021	2022
U.S.A.	0.4	0.9	0.1	0.3	0.8	1.0
U.K.	-1.2	-0.7	-1.1	-1.7	-1.6	-0.2
Japan	-0.6	-0.6	-0.6	-0.5	-0.6	-0.7
Germany	-1.2	-1.4	-1.9	-2.3	-2.2	-2.0
France	-0.6	-0.7	-1.4	-1.9	-1.7	-1.6
Italy	0.9	1.8	0.2	-0.6	-0.5	-0.3

Nominal Long-Term Interest Rates

	2017	2018	2019	2020	2021	2022
U.S.A.	2.4	2.9	2.1	2.3	2.8	3.0
U.K.	0.6	1.0	0.6	0.2	0.4	1.8
Japan	0.1	0.0	0.0	0.1	0.1	0.1
Germany	0.4	0.2	-0.2	-0.5	-0.3	0.0
France	0.8	0.7	0.1	-0.3	0.0	0.2
Italy	1.9	2.8	1.4	0.7	0.9	1.2

Index Of Real Exchange Rate(2000=100)¹

	2017	2018	2019	2020	2021	2022
U.S.A.	94.5	93.5	96.3	96.2	95.5	94.9
U.K.	75.5	76.9	75.9	73.5	75.5	75.8
Japan	58.3	57.8	56.3	54.2	51.4	48.0
Germany	94.3	96.5	95.6	94.1	92.2	90.0
France	95.3	97.4	96.3	94.5	92.1	89.4
Italy	101.2	102.8	104.5	105.2	103.8	101.7

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)

	2017	2018	2019	2020	2021	2022
U.S.A. ¹	101.68	109.96	104.31	106.53	105.84	104.43
U.K.	1.29	1.34	1.28	1.28	1.28	1.30
Japan	112.14	110.43	109.03	106.79	107.50	107.30
Eurozone	0.89	0.85	0.89	0.88	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