LIVERPOOL INVESTMENT LETTER

May 2020

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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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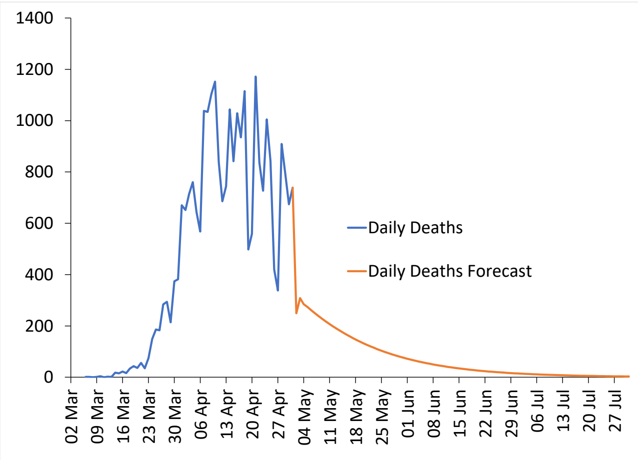
CORONAVIRUS: WHAT COMES NEXT?

We are all inevitably mesmerised by the short term travails of the virus lockdown. However, this neither can, nor will, go on for much longer. The government is trying to find a way out; and it is reasonable to assume that the economy will be getting back to some sort of normality by the autumn. It is time to discuss what sort of policies we will need then, as the economy emerges from today's troubled sleep.

Although virologists are at sixes and sevens over what may happen in the way of a second wave of infections and whether they would trigger moves back into lockdown, I will back the economists' pragmatic forecasts on this, using our well-worn models of epidemic behaviour, which strongly suggest that deaths and infections will continue to fall along the current epidemic's playing out logistic curve. The chart which follows shows (in orange) our Cardiff forecast of deaths, based on a model of the virus' behaviour which matches the UK's logistic data behaviour — as I described it before here https://www.telegraph.co.uk/politics/2020/04/15/coronavirus-lockdown-cannot-tolerated-much-longer-should-unwound/



Similar forecasts based on the latest trends interpreted through a logistic model can be found in work from York — https://www.researchgate.net/publication/340720971_Coronametrics_The_UK_turns_the_corner.

We cannot be sure of course, as with any forecast. But we buttress our forecast of economic recovery in two ways. First, the 'test/track/trace' policy intended to see off any recurrence is likely to succeed. Secondly, there is a good chance we will have better medicines and a vaccine by the autumn.

So in the rest of this piece I will follow the logic of this forecast: that the economy will get going again actively from the autumn, and will be gradually recovering through the summer as the lockdown is gradually eased. In the rest of the world developed economies, including China, will be behaving similarly, as they too are emerging slowly from lockdown. The developing world will be helped to recover too by this developed world revival.

Table 1: Summary of Forecast

	2017	2018	2019	2020	2021	2022	2023
GDP Growth[1]	1.8	1.4	1.4	-6.4	6.0	2.7	3.0
Inflation CPI	2.6	2.5	1.8	1.7	2.1	2.1	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	77.9	78.3	78.1	77.9	77.7
3 Month Interest Rate	0.4	0.7	0.8	0.6	1.9	4.5	5.0
5 Year Interest Rate	0.6	1.0	0.8	0.9	3.0	5.0	5.0
Current Balance (£bn)	-68.3	-81.3	-93.8	-42.8	-31.5	-22.4	-16.6
PSBR (£bn)	53.7	40.8	43.3	89.9	8.9	4.6	0.3

[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 world economy that will be reviving will change shape in key ways. For some time at least, until people regain confidence — e.g. with a vaccine — there will be social distancing which imposes quite large costs on activities that need physical proximity — such as offices, education and hospitality. But confidence will return, much as traffic gathers speed again on motorways after a nasty accident. People will gradually become confident as the death toll falls that they will not catch a fatal virus in their daily round.

A more difficult problem will be border policies, with countries imposing checks and quarantines. Travel will be badly hindered for some time. Again, in time people will return to old habits. But this will only happen once governments feel that a virus recurrence will not occur — maybe well into next year.

If this is the world ahead — and I know some have become so gloomy that they will deride us as far too optimistic — then there are important decisions to be taken for future policies that will ensure this recovery is helped and not plunged back into recession.

The first thing to note is that the bailout will have to continue, since the troubles into which the government-imposed lockdown has thrust so many businesses will only gradually get better in this scenario. As the scenario grinds on towards autumn, more and more will run out of cash, especially those last in the unlocking process, like the hospitality and travel sector.

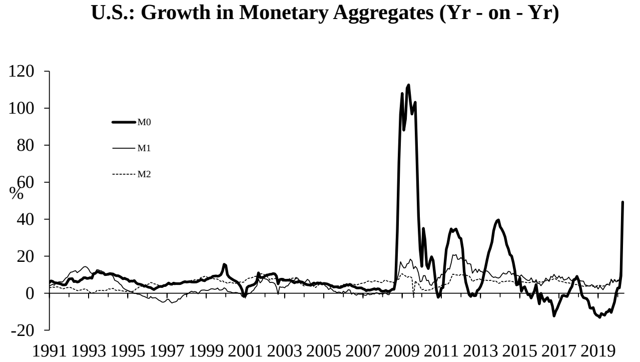
Luckily for the government, it can carry on with the bailout by relying on the twin pillars of monetary sovereignty, government borrowing and central bank money creation. As I have explained before, the taxpayer cost of the bailout can be tightly contained by the very low interest rates currently operative on government debt — https://www.telegraph.co.uk/politics/2020/04/28/treasury-penny-pinching-threatens-wreck-coronavirus-bailout/. It turns out that the Bank of England is buying government debt in the markets about as fast as it is being issued — and this is keeping rates close to zero — https://www.thetimes.co.uk/article/the-day-the-financial-world-stood-still-xkgqwq3d7.

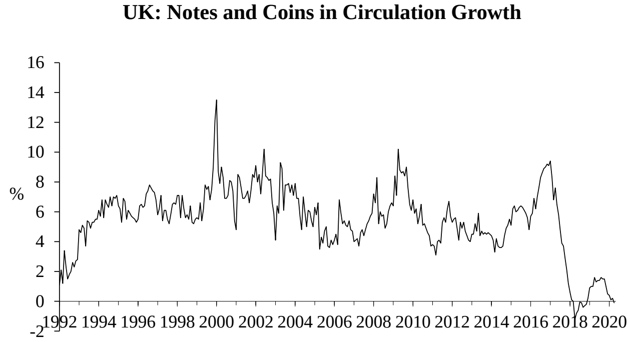
Unfortunately, this emerging picture also implies that what we have been seeing in the government debt market is a false market, since the government has effectively been borrowing from itself. The true market will reveal itself as the Bank sells this debt on to the market and so to the private sector. As it does so, interest rates will rise, raising the future cost to the taxpayer. So it will be tempting for the government to keep this debt on the Bank's balance sheet, keeping rates low indefinitely.

But as the recovery proceeds and confidence starts to return, the huge quantity of money currently being printed will threaten pretty serious inflation. The Bank will then need to sell off its debt holdings, take money out of circulation, and push interest rates up to fight inflation. The implication will be that the government debts will carry higher interest, raising the future taxpayer cost. But this process will take time and interest rates should stay low for some time as the Bank sells off its holdings gradually, with the world economy continuing to struggle with recession. So it is likely the interest cost to the taxpayer will stay fairly low. Also importantly with interest rates at least off the floor, monetary policy will be back in business, able to lower and raise rates again to stabilise the economy; and still keeping inflation under control.

What now are the government's options? It will be vital that we leave the EU on time in December so that it has proper options. If we do not, and remain in the EU for a further year, we risk being sucked into the EU's own looming financial crisis from the coronavirus effects on Southern Europe's public finances; we will also delay, perhaps fatally, our ability to strike free trade deals with key non-EU countries like the US, and dynamic Asia Pacific countries. We will have to contribute to the EU's new budget, which is under heavy strain, without a voice at the EU table. Apart from all this, we would remain under EU control of our regulations and most of our policy areas, including state aid and so our bailout programme.

But provided we really do leave on time, if necessary under WTO rules, we have the options to pursue new policies to boost our competitiveness post-Brexit. We will still have the fiscal firepower to spend more on infrastructure and also cut key taxes to spur growth, while taking a long view on the revenues from that growth. We are talking here about a whole new supply-side agenda to stimulate the economy and especially the Northern economy with its reliance on competitiveness in high value-added manufacturing and trade. This agenda should be evaluated under new fiscal rules that estimate the long-run effects on the government's balance sheet; in effect we have been forced by the virus crisis to dump our previous rules, so it is opportune to use this new long term balance sheet approach as we move into the post-Brexit world.


U.S.: Growth in Monetary Aggregates (Yr - on - Yr)
M0
M1
M2
%
120
100
80
60
40
20
0
-20
1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019


UK: Notes and Coins in Circulation Growth
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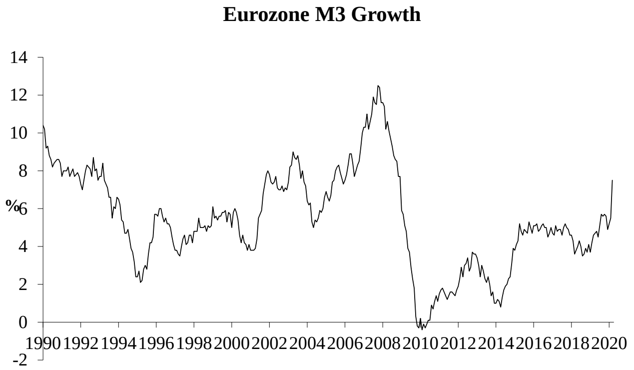
-2
1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020


Eurozone M3 Growth
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12
10
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6
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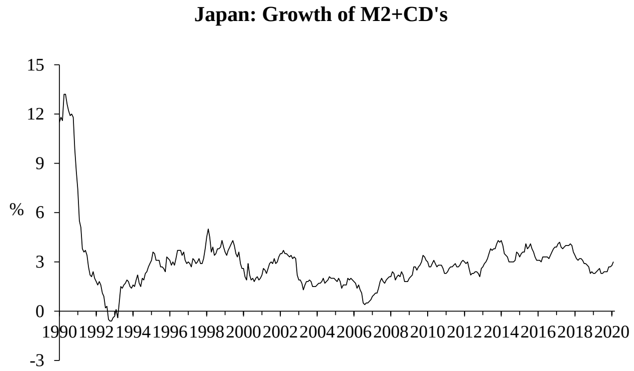
-2
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020


Japan: Growth of M2+CD's
%
15
12
9
6
3
0
-3
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020

FOCUS ON JAPAN

Francesco Perugini

Japan's economy faces deep recession

Despite early exposure, high population density (over 6,100 persons/sq km in Tokyo, 2.4 times higher than New York City), large percentage of high-risk individuals over 65 years of age (about 26%, compared with 15% in the USA), and little social distancing measures, Japan has so far reported low infection and low death from COVID-19 compared to other countries (see the Table and the end of this section). According to some medical researchers at Yale University in Connecticut (US), there is a number of theories to explain the low number of COVID-19 cases in Japan. The report says that Japanese culture is inherently suited for social distancing, and face mask use prevents viral spread, but it might be also that Japanese people have reduced susceptibility and are more resistant to the COVID-19 due to innate and physiological characteristics that differ from other populations. It might also be related to mandatory childhood vaccines against tuberculosis which might confer protection against COVID-19 (the report is available at https://www.embopress.org/doi/pdf/10.15252/emmm.202012481).

Despite the low number of cases, over the last few days there has been a noticeable rise, particularly in big cities. Most of all, there are worries that Japan's low testing regime has undercounted many coronavirus cases, and fears that the medical system may be strained caring for them. Japan has carried out 1.3 coronavirus tests per 1,000 people, compared with 12 in South Korea and 18 in the US, according to recent figures compiled by Our World in Data. "Japan should have acted faster, locked down and contained in a shorter period of time," said Kenji Shibuya, director of the Institute of Population Health at King's College, London. "If this situation continues, for a longer period of time, than that under the lockdown, then not just health care but the economy will suffer more", he said.

The government of Prime minister Shinzo Abe reacted to the world pandemic by imposing the state of emergency on April 7 for 7 prefectures out of 47: Tokyo, Osaka, Kyoto, Aichi and Hokkaido. The state of emergency was expanded nationwide later until the Golden Week holidays end on May 6. Abe told the Liberal Democratic Party's secretary-general, Toshihiro Nikai, that he plans to extend the measure beyond that date. "The current situation is very severe. I think it's difficult to return on May 7 to the normal life we used to have," Abe told reporters at a recent press conference. "We must be prepared for a battle that goes on", Abe said.

The state of emergency gives local governors greater power to tell people to stay at home and ask school and businesses to close, but it does not mandate penalties in most cases for non-compliance, relying instead on social pressure and respect for authority. The state of emergency is different from the lockdown that has been put in place in other parts of the world. Japan's state of emergency declaration does not, for example, empower prefecture police to legally enforce the closure of public and private facilities or set up roadblocks to inspect vehicles going in and out of the prefectures affected by the declaration. Nor can the governors legally proclaim curfews. There is a chance people loitering in public places could find themselves stopped by police and asked what they are doing. But they won't receive fines for not staying indoors. It is not clear whether Abe's government can legally enforce a hard lockdown. Some observers argue that Japan's Constitution would need to be amended to impose and enforce a lockdown; others instead believe that there is certainly no need to revise Japan's Constitution to create legal authority to enforce a lockdown.

The point is that from the start of the pandemic, Abe's government has been criticised for being too offhand in its response and erratic in its decision-making. Japan's first major misstep occurred in early February, when the Diamond Princess cruise ship was quarantined in Yokohama. At least 23 passengers were allowed to disembark and go home without being tested, and around 90 government employees returned directly to their Tokyo offices after visiting the stricken vessel. More than 700 cases were eventually linked to the cruise ship in total. Weeks later, Abe then ordered schools to remain closed until the end of the spring break in April, a sudden decision that caught both teachers and parents by surprise, leaving them little time to plan and prepare. Then came the lack of decisiveness on the Tokyo Olympics. Abe reluctantly announced in late March that the games would be postponed in 2020, but only after countries began to pull out and the government was accused of dragging its feet. Even when Abe has tried to send the right message, the tone has been poor. This was perhaps best symbolised by the mocking reaction to his well-intentioned "stay home" Twitter post, which portrayed him drinking tea and patting his dog. Observers believe that Abe seems to be bowing to pressure from the Keidanren, a major corporate lobby group and donor to his party, out of fear the economy could descend into an even deeper recession than the -5.2% reduction in economic growth projected by the IMF.

To counteract the upcoming recession Abe announced an unprecedented ¥108 trillion stimulus package, equivalent to about a fifth of Japan's annual GDP, to pay for coronavirus measures and protect businesses and jobs. It includes ¥300,000 cash handouts for some hard-hit households. However, extending the emergency declaration for the coronavirus by a month could cause consumer spending to fall nearly ¥2.5 trillion and would double the ranks of the jobless to 778,000, according to Nomura Research Institute.

Ryutaro Kono, chief economist at BNP Paribas Securities (Japan) Ltd., has projected that the state of emergency would lower real GDP by 1.6% in fiscal 2020, while the planned extension would push GDP growth down to a negative 6.3% for the year ending March 2021. As noted by several economists, the coronavirus outbreak could hardly have come at a worse time for Japan. The Japanese economy had already started to slow down from late 2018, and the impact of trade tensions between China and the US was further exacerbated by a consumption tax rate hike in October 2019. "I think the coronavirus has given a final blow to the economy," Jun Saito, senior research fellow at the Japan Center for Economic Research in Tokyo said, reiterating his view that Japan is headed for a "very steep recession."

Coronavirus COVID-19 - Reported Cases and Deaths by Country

Country	**Total Cases**	**Total Deaths**	**Total Recovered**	**Active Cases**	**Serious Critical**	**TotCases/1M pop**	**Deaths/1M pop**	**Total Tests**	**Tests /1M pop**
World	3,415,237	239,823	1,087,190	2,088,224	51,312	438	31		
Europe	1,410,896	137,563	524,063	749,270	17,987				
USA	1,131,492	65,776	161,563	904,153	16,481	3,418	199	6,699,878	20,241
Asia	536,099	19,030	276,703	240,366	5,625				
Spain	242,988	24,824	142,450	75,714	2,500	5,197	531	1,528,833	32,699
Italy	207,428	28,236	78,249	100,943	1,578	3,431	467	2,053,425	33,962
South America	190,321	9,486	63,915	116,920	9,816				
UK	177,454	27,510	N/A	149,600	1,559	2,614	405	1,023,824	15,082
France	167,346	24,594	50,212	92,540	3,878	2,564	377	1,100,228	16,856
Germany	164,077	6,736	129,000	28,341	2,189	1,958	80	2,547,052	30,400
Russia	124,054	1,222	15,013	107,819	2,300	850	8	3,900,000	26,724
China	82,875	4,633	77,685	557	37	58	3		
Japan	**14,305**	**455**	**2,975**	**10,875**	**328**	**113**	**4**	**174,150**	**1,377**

MARKET DEVELOPMENTS

As the world economy recovers from lockdown, equity markets will recover their balance. Just as in the UK inflation will rise worldwide with the massive money/credit creation from the virus. This will finally push up yields on bonds, with central banks forced to tighten money.

Table 1: Market Developments

	Market Levels Apr 6	May 5	Prediction for Apr/May 2021 Previous Letter	Current View
Share Indices				
UK (FT 100)	5582	5849	6280	6581
US (S&P 500)	2664	2868	2570	2768
Germany (DAX 30)	10075	10729	14629	15579
Japan (Tokyo New)	1376	1431	1675	1742
Bond Yields (government)				
UK	0.66	0.22	2.30	2.30
US	0.75	0.67	2.80	2.80
Germany	–0.36	–0.55	–0.20	–0.20
Japan	0.01	–0.03	–0.00	–0.00
UK Index Linked	–2.07	–2.18	1.00	1.00
Exchange Rates				
UK ($ per £)	1.23	1.25	1.32	1.32
UK (trade weighted)	77.67	78.03	79.4	79.4
US (trade weighted)	107.79	108.06	102.5	102.5
Euro per $	0.93	0.92	0.85	0.85
Euro per £	1.14	1.15	1.12	1.12
Japan (Yen per $)	109.13	106.61	112.5	112.5
Short Term Interest Rates				
UK	0.83	0.82	1.80	1.80
US	1.09	0.55	1.80	1.80
Euro	–0.40	–0.33	–0.50	–0.50
Japan	0.00	–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	0.5	2.0	10.00		16.10
US	1.99	0.5	2.1	–6.10	–5.98	–7.49
Germany	3.30	0.5	1.7	43.00	2.35	50.85
Japan	1.90	–0.5	1.2	21.00	–11.84	11.76
UK indexed[2]	–2.07		2.0	8.00		7.82
Hong Kong[3]	2.60	3.0	2.1	–41.00	–5.98	–39.28
Malaysia	3.30	2.0	2.1	15.00	–5.98	16.42
Singapore	3.50	1.0	2.1	–7.00	–5.98	–6.38
India	1.40	4.0	2.1	–17.00	–5.98	–15.48
Korea	1.10	1.0	2.1	–40.00	–5.98	–41.78
Indonesia	2.20	3.0	2.1	2.00	–5.98	3.32
Taiwan	2.80	2.0	2.1	8.00	–5.98	8.92
Thailand	3.20	1.5	2.1	4.00	–5.98	4.82

Bonds: Contribution to £ yield of: –

	Redemption Yield	Changing Nominal Rates	Currency	Total
UK	0.22	–20.85		–20.64
US	0.67	–21.30	–5.98	–26.61
Germany	–0.55	–3.54	2.35	–1.75
Japan	–0.03	–0.26	–11.84	–12.13

Deposits: Contribution to £ yield of:

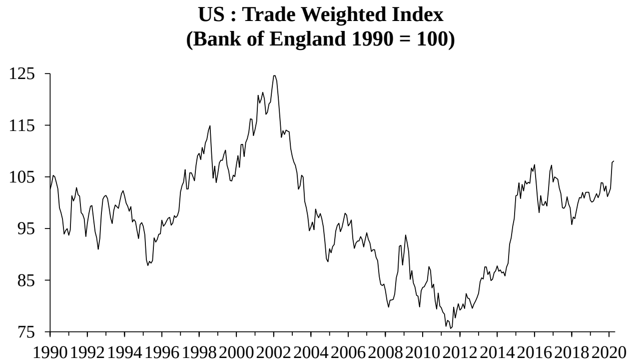
	Deposit Yield	Currency	Total
UK	0.82		0.82
US	0.55	–5.98	–5.43
Euro	–0.33	2.35	2.02
Japan	–0.05	–11.84	–11.89

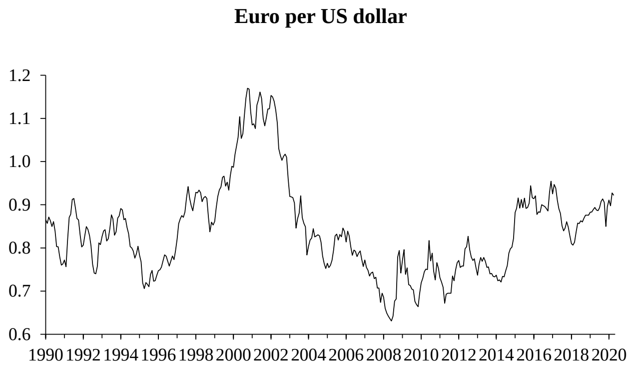
[1] Yields in terms of €s or $s can be computed by adjusting the £-based yields for the expected currency change.
[2] UK index linked bonds All Stocks
[3] Output based on China.

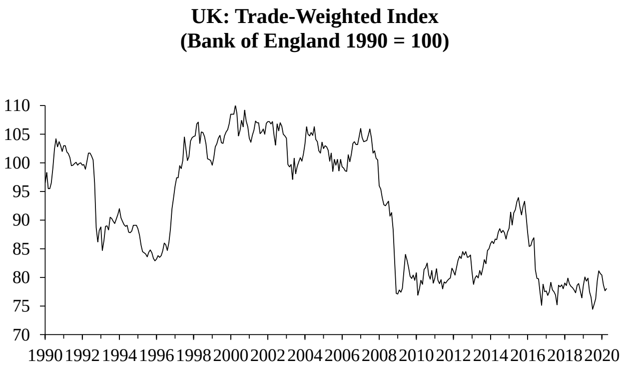
Table 3: Portfolio(%)

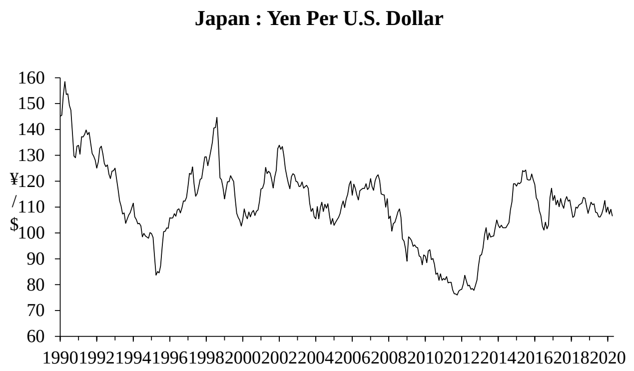
	Sterling Based Investor		Dollar Based Investor		Euro Based Investor	
	April Letter	Current View	April Letter	Current View	April Letter	Current View
UK Deposits (Cash)	5	5	5	5	1	1
US Deposits	-	-	-	-	-	-
Euro Deposits	-	-	-	-	-	-
Japanese Deposits	-	-	-	-	-	-
UK Bonds	-	-	-	-	-	-
US Bonds	-	-	-	-	-	-
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



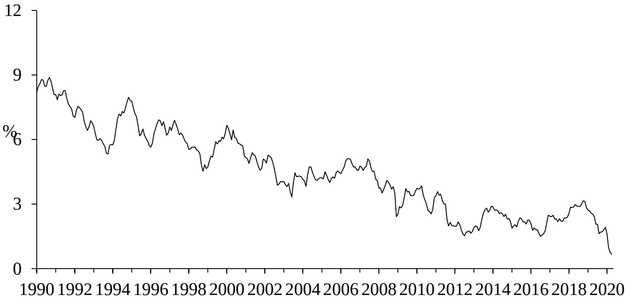




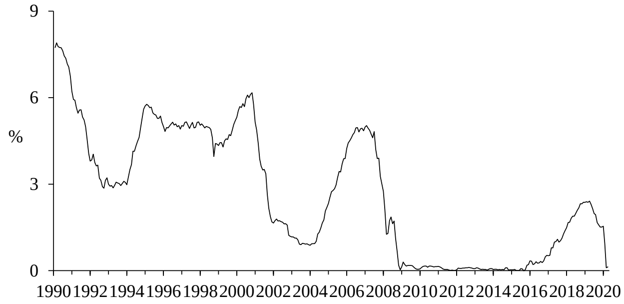


GOVERNMENT BOND MARKETS

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

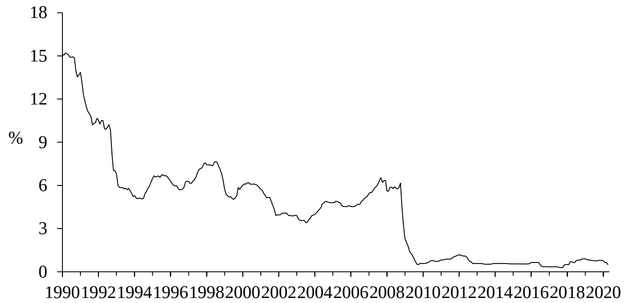


U.S. : 3-Month Treasury Bill

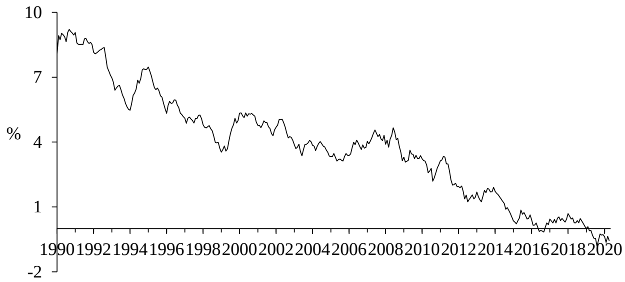


U.K.: Yield on Long-Term Government Bonds

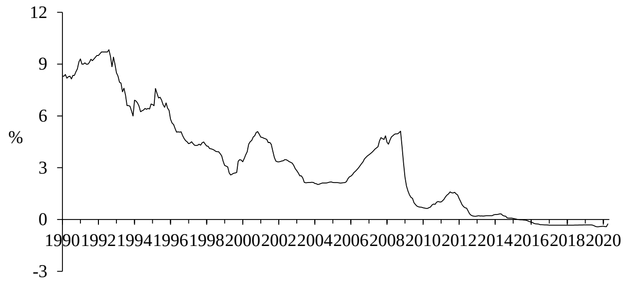
U.K. : 3-Month Certificate LIBOR Rate



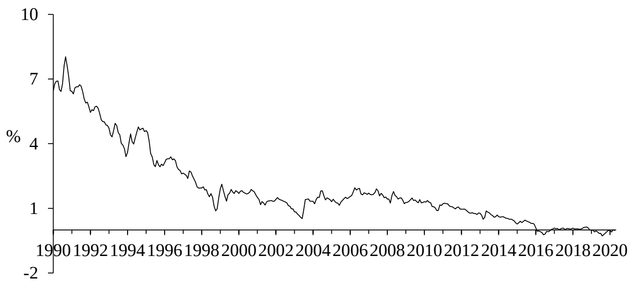
Germany: Yield on Public Authority Bonds



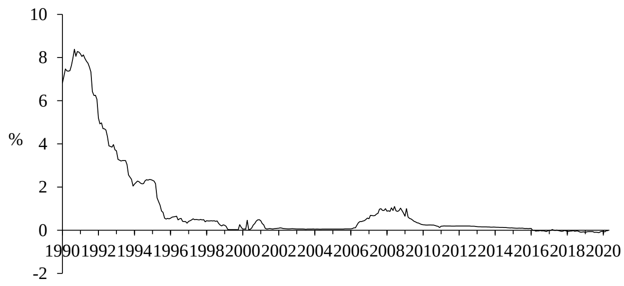
Germany : 3-Month Interbank Deposit Rate



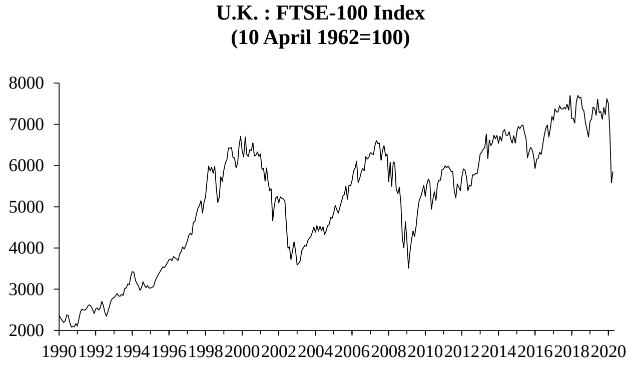
Japan: Yield on Long-Term Government Bonds

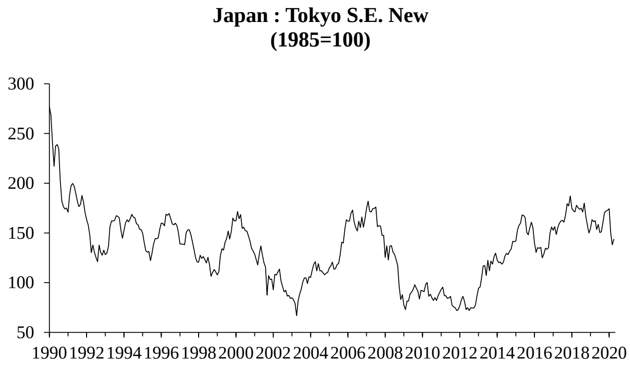


Japan : 3-Month Money Market Rate



MAJOR EQUITY MARKETS





EMERGING MARKETS

Anupam Rastogi

Covid 19 is going to stalk mankind until a vaccine is found. Economies all over the world are struggling to cope with it. Even after a vaccine is found, it will take a few years for the economies to reach pre-2020 economic activity. Economies will be running at considerably less than 100% of capacity for a while — which is another way of saying that they will be in an enduring reduction in economic activity all over the world. To cap it all, energy markets are in turmoil. Its impact on energy importing countries such as India and China should be positive. But that was when economic activities were normal.

Under new normal where supply chains across the world are disrupted, disputes are likely to increase as corporates take advantage of the current situation and break contracts and distressed assets are increasing and continue to increase as behavioural pattern of consumers changes.

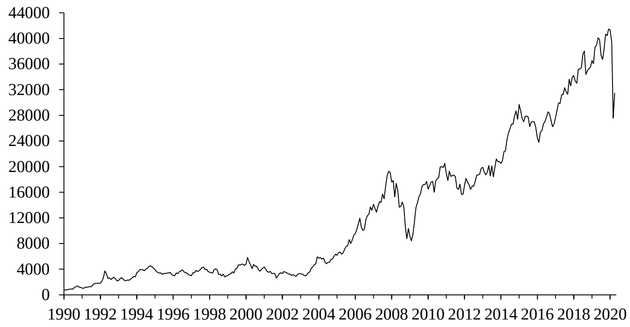
The economic contraction created by governmental efforts to contain the coronavirus is mincing inflation. But, both "cost-push" and "demand-pull" inflation are round the corner. Though there is no demand-pull inflation at present — it remains a possibility in a post-quarantine or post-vaccine world. Cost-push inflation is with us. Interrupted supply chains make it more expensive to get goods to consumers, meaning that costs have to be passed on in higher prices. How the whole dynamics will work out depends on the actions of fiscal and monetary authorities. The five emerging economies are following different paths as they are being governed by their mixed experiences with debt and inflation.

India

A looming global recession and an unprecedented drop in domestic economic activity owing to a 40-day nationwide lockdown has altered India's growth outlook. Initial signs are already visible in high-frequency macro indicators like monthly merchandise trade, auto sales, fuel sales and power generation. First quarter of 2020 GDP is expected to witness a significant lockdown-induced contraction. With lockdown extending to Mid-May, second quarter GDP will see contraction as well. The Nikkei India Manufacturing Purchasing Managers' Index (PMI) registered 51.8 in March and 27.4 in April. However, the rural sector is likely to save India's GDP from contracting in the current fiscal year. Fortunately for India, the Southwest monsoon is expected to be normal which shall provide impetus to the rural economy in the coming year as rural demand and supply is expected to be normal.

Retail inflation continued to ease in March on lower food and fuel prices and a fall in demand for non-essential items amid a nationwide lockdown, to combat the coronavirus pandemic. CPI based inflation stood at 5.91% in March compared with 6.58% in February. The drop was led by continued easing in vegetable prices. The Reserve Bank of India expects retail inflation to fall below its targeted 4% in the first half of 2020–21. Inflation could recede even further, but the government has decided not to pass low crude oil prices to consumer and even raise taxes on petrol and diesel further, to raise revenue for the provincial and central government.

India: BSE Sensitive



India's current account deficit could end in a surplus in the current fiscal year 2020—21. Crude oil prices below $20 a barrel will help the rupee get some cushion from volatile portfolio flows during the year.

The general contraction in economic activity throughout the world, as a fall-out of the coronavirus pandemic, is expected to impact India's exports and imports. Exports are expected to contract by 16% to $265 billion and imports are expected to fall by 25% to $350 billion.

The government is mulling fiscal incentive and capital subsidy for reviving and restarting old active pharmaceutical ingredient units in a bid to make India an alternative hub for bulk drugs at a time when China faces quality as well as trust issues. The government is also looking to chart strategies to turn the country into a major exporter of medical textiles, furniture, electronics, and toys, among other products, in the next six months. It has been considering whether to build API production capacity for the 58 APIs, on which India is significantly dependent on China.

The Indian stock market is holding up for the time being as it is hoping against hope to have a V shaped recovery. At best, it is likely to be a long haul, as the impact of coronavirus plays out in rest of the fiscal year ending in March 2021.

	18–19	19–20	20–21	21–22	22–23
GDP (%p.a.)	6.8	5.0	0.0	6.5	6.5
WPI (%p.a.)	3.9	3.6	3.8	4.5	5.0
Current A/c(US$ bill.)	-70.0	-22.0	0.0	-35.0	-35.0
Rs./$(nom.)	79.5	73.0	78.0	79.0	80.0

China

China's GDP contracted 6.8% in the first quarter of 2020 from a year ago as the coronavirus outbreak seriously impacted the world's second largest economy. The coronavirus pandemic has dragged China's economy into its worst three-month period in decades — and the road toward recovery will likely be long. For the year 2020, GDP may not shrink but it may not grow either. China's three major engines for growth — consumer spending, exports and fixed asset investment — all crackled as large swaths of the country were placed on lockdown in late January and early February to contain the spread of the virus. Retail spending dropped 19% last quarter, while exports plunged more than 13%. Fixed asset investment declined 16%.

China is in for a drawn-out recovery now. The traffic snarls in Beijing show that large businesses are getting back to work, shops, cinemas and restaurants are still largely empty. The demand is missing, both at home and abroad. China's economic restart is running into headwinds as many trading partners went into lockdowns. China's official index of manufacturing purchasing managers slipped to 50.8 in April. That is down from 52.0 in March. China has refrained from announcing its GDP target for 2020 which is generally announced in the National People's Congress meeting held in early March. This year, the meeting has been postponed to an unspecified date due to the coronavirus.

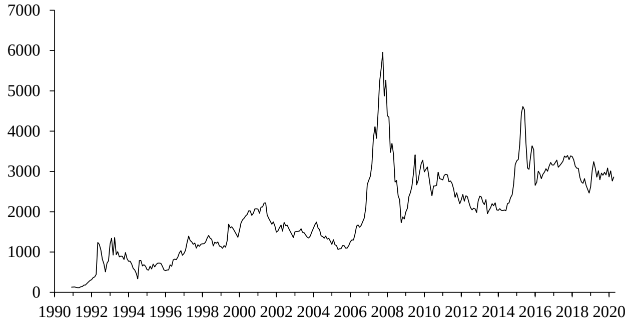
China's consumer inflation slowed to the weakest pace as food and oil prices moderated and shutdowns to beat the coronavirus kept demand depressed. The consumer price index rose 4.3% in March from a year earlier. China reopened for business in March, following strict closures to stop the spread of the coronavirus, and supply constraints on some foodstuffs eased while global oil prices plummeted.

In the first three months of the year, China's global exports fell 11.4% in Chinese currency terms from a year earlier to 3.3 trillion yuan ($470 billion). Imports declined 0.7% to 3.2 trillion yuan ($455 billion).

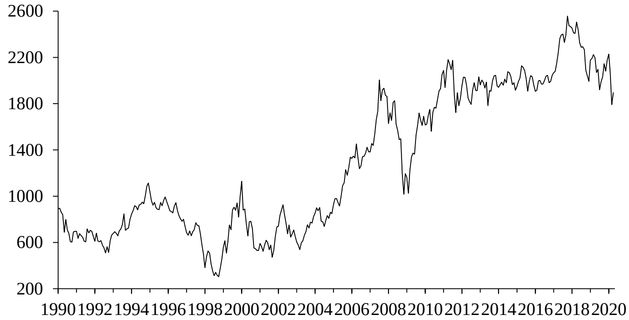
The Chinese Yuan slumped 0.7% against the dollar after US President Donald Trump threatened new tariffs on Beijing as a retaliatory measure for the coronavirus. In offshore trade, it touched a one-month low of 7.13 per dollar. The currency devaluation will be a boon to the Chinese economy. It makes Chinese industry more competitive, as it can then price its products in a more efficient manner compared to rivals like Vietnam and Malaysia, where some of the manufacturing has fled.

China has begun piloting its new digital currency in four major cities, becoming the first nation to do so. The nation has reportedly begun trials in four cities, including Shenzhen, Suzhou, Chengdu as well as Xiangfan, and areas that will host some of the events for the 2022 Beijing Winter Olympics. The digital currency — known as the e-RMB — would be used for paying the April-month salaries to some government employees and public servants. The digital

China: SSE Composite Index



Korea: Composite Index



currency will be used to subsidise transport in Suzhou, but in Xiangfan the trial primarily focused on food and retail.

The PBOC will be the sole issuer of the digital yuan, initially offering the digital money to commercial banks and other operators. The public would be able to convert money in their bank accounts to the digital version and make deposits via electronic wallets. Reportedly, the technology allows the digital currency to be exchanged without an internet connection, and that it can be used to make contactless payments.

A fresh threat of U.S.-China tariff escalation is coming on top of the coronavirus. The Trump administration is trying hard to paint China as the villain of the pandemic. In an interview, President Donald Trump accused China's response to the coronavirus as being focused on a desire to see him lose the election in November. Beijing has publicly denied the assertion, but it does suggest that the next few months will be tense ones for the relationship and the yuan.

	18	**19**	**20**	**21**	**22**
GDP (%p.a.)	6.6	6.1	0.0	5.5	5.5
Inflation (%p.a.)	2.2	2.3	2.0	2.0	1.8
Trade Balance(US$ bill.)	50.0	40.0	20.0	40.0	40.0
Rmb/$(nom.)	6.8	7.1	7.3	7.2	7.2

South Korea

South Korea's ruling party won a landslide victory in national assembly elections in April. This is an endorsement of President Moon Jae-in's response to the coronavirus pandemic. Moon's left-leaning Democratic Party won 180 seats in the 300-seat assembly — the biggest majority in the national assembly by any party since South Korea's transition to democracy in 1987. The conservative opposition United Future party and its smaller sister party won 103 seats. The country continued to record a low number of new infections. The country has a total of 10,613 cases and 229 deaths.

South Korea saw its GDP contract 1.4% in the first quarter of 2020 from the previous quarter at the end of 2019. The pandemic had knocked industrial output, domestic spending and jobs. The Q1 2020 figure was the sharpest quarter-on-quarter contraction since the fourth quarter of 2008, when, amid the global financial crisis, the economy fell 3.3%. For the year 2020, we expect the economy to shrink only 1%. The IMF expects the South Korean economy to contract -1.2% this year.

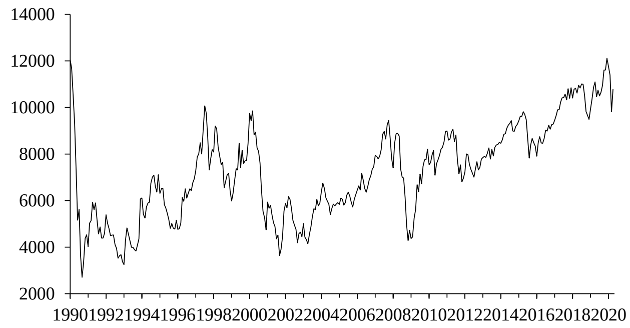
Consumer spending declined 6.4% from the prior quarter in the first quarter of 2020. The composite consumer sentiment index (CCSI) stood at 70.8 in April, down 7.6 points from the previous month. Domestic demand is unlikely to recover much in the Q2 and Q3 quarters as people continue to practice social distancing. Even general investment is likely to fall because of the mounting uncertainty. The government announced a third rescue package meant to protect business from failing. In all, the government has spent or announced plans to spend 135 trillion Korean won ($110 billion USD), or around 7% of its GDP.

The BOK cut rates by 50 basis points in March — the largest policy easing since the global financial crisis. The bank will next review its policy on May 28. The collapse in oil prices should provide further support to Korean real interest rates by supporting real GDP growth (both of which are intimately related). As a major oil-importing economy, the fall in global oil prices is a gift to Korea. The country imported 84mn barrels of crude oil in March meaning that with Brent crude oil prices halving since then, it should see its annual oil import bill fall by roughly USD20–30bn, equating to as much as 2% of GDP.

Korea's debt ratio has fallen over recent years, coming in at just 37% of GDP in 2019. This suggests that once economic recovery takes place, the BOK will face few fiscal restraints preventing rate hikes. As fundamental drivers return to the forefront, we should see the won steadily appreciate as several factors point to a widening real interest rate advantage versus the U.S. dollar.

Exports dived 24.3% year-on-year in April, the worst contraction since May 2009. South Korea's export numbers, one of the first full-month data sets on trade, paint a grim picture of world commerce amid widespread lockdowns. Hobbled by coronavirus, its two biggest trading partners, the United States and China saw their economies contract sharply in the first quarter, suggesting a painfully slow path to recovery for global trade. Imports slid 15.9% from a year earlier. The trade balance swung to a deficit of $946 million. The won is likely to remain stable at the current rate.

Taiwan: Weighted TAIEX Price Index



	18	19	20	21	22
GDP (%p.a.)	2.7	1.8	-1.0	2.0	2.2
Inflation (%p.a.)	1.5	0.4	-0.5	0.2	1.2
Current A/c(US$ bill.)	86.0	80.0	68.0	70.0	70.0
Won/$(nom.)	1130	1200	1230	1260	1260

Taiwan

Taiwan has managed well in the current crisis. Taiwan has not gone into total lockdown to contain the spread of the virus, as early measures prevented a rapid spread of the coronavirus. The positive impact of closing its border to China and imposing early quarantine measures and contact tracing has prevented the loss of life and protected the economy. It has reported 429 infections and six deaths in the first week of May.

The economic impact of the outbreak is almost non-existent, so far, due to Taiwan's better virus prevention measures. The export-dependent economy has kept expanding due to the ongoing shift of the supply chain out of China and strong semiconductor orders. Gross domestic product grew 1.54% in the first quarter. Although with the global economy in recession, it is unclear how long that can last.

Private consumption fell 0.97% in the quarter, the first decline since 2009. Taiwan will likely fall into recession with full-year growth declining 1%. The International Monetary Fund expects Taiwan's economy to shrink 4.0% in 2020. We expect Taiwan's GDP to weaken in 2Q and 3Q of 2020, as the escalation of Covid-19 in the rest of the world is likely to weigh on its exports, with spillover implications to domestic demand. Surging demand for its technology-intensive chips, including from 5G network deployment, big data processing, analytics, and artificial intelligence, will drive investment growth and economic activity, as technology related investment picks up. Taiwan is to provide NT$1.05 trillion in two phases of an economic relief package to give emergency aid to businesses and individuals hit by the pandemic.

In the first quarter, inflation was 0.55%, and the core inflation was 0.44%. The wholesale prices declined 7.32% annually in March, following a 4.47% fall in the preceding month.

Taiwan's exports for March declined 0.6% from a year earlier to US$28.3 billion due to the impact of the COVID-19 coronavirus pandemic on the global supply chain. The imports in March totalled US$25.5 billion, up 0.5% from a year earlier, leaving the country with a trade surplus of US$2.8 billion. Taiwanese dollar strengthened against U.S. dollar and is maintaining 29.9 level.

	18	**19**	**20**	**21**	**22**
GDP (%p.a.)	2.6	2.0	-1.0	2.0	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	30.0	30.5	31.0

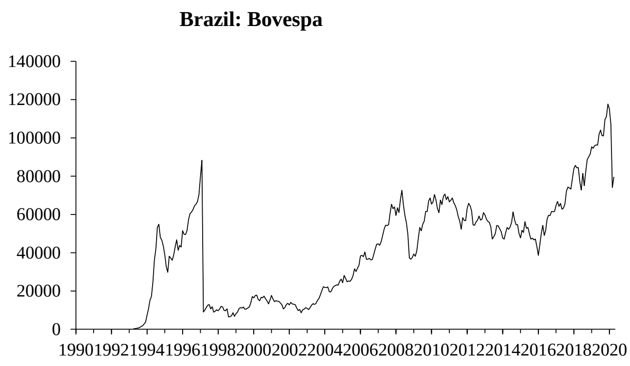
Brazil

President Bolsonaro has called the coronavirus a "little flu'' and said that athletes such as himself were immune. His apparent unwillingness to grasp the severity of the pandemic is cause for concern for international organisations such as WHO and the World Bank. The neighbouring countries have become fearful that Brazil would remain a tinder box of the coronavirus until it is contained.

There is a wide spread feeling among people there that the coronavirus is a rich man's disease, that only those who travel catch it. Moreover, they think it only impacts the elderly. Poor people dependent on daily wages, have a choice between getting the coronavirus and dying of hunger. They prefer not to die of hunger and continue to go to work. The virus spread in hinterland is a cause of concern to provincial governments and they are trying to contain the virus with various measures.

Under the leadership of free-market-minded Economy Minister, Paulo Guedes, the federal government's response to the coronavirus has been largely limited to ensuring the availability of credit for firms and income for the unemployed. There is fiscal backing for hospitals, and the central bank has acted as a lender of last resort. But the minister remains adamant to support businesses by giving them any fiscal relief or investment incentives.

The economy may shrink as much as 5.5% compared to earlier forecast of 1% contraction previously. This would be the biggest annual fall in GDP in at least half a century. The World Bank estimates that the economy will shrink 5% this



year due to the direct and indirect economic impact of the coronavirus pandemic. As the economy faces three major shocks: weak global demand, low oil prices and the economic disruption from domestic virus-containment measures; private consumption will reduce and labour productivity will get impacted. Unemployment is all set to rise. Hence, we expect a stagnant economy in 2021.

Inflation is expected to slow to 2.5% this year, much below the central bank's official goal of 4.0%, giving it ample room to cut interest rates. Despite a notable increase in the cost of food and drinks, the impact of virus is deflationary so far.

As the federal government is less than enthusiastic about providing aid to businesses, there are chances that it may lead to more permanent economic damage and weaken recovery prospects.

The currency real has taken the brunt of economic uncertainty as it sank to a new low of 6 reais per dollar before recovering to on 5.6 per dollar now.

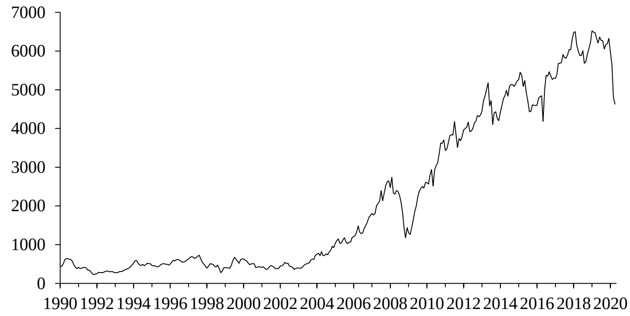
As of now, Brazil is in a disarray. The federal government, quarrelling with state governors and infectious-disease experts does not bode well for the economy. A fall of ~44% YTD captures the uncertainty and risks being faced by the economy.

	18	**19**	**20**	**21**	**22**
GDP (%p.a.)	1.1	0.8	-5.5	0.0	2.5
Inflation (%p.a.)	3.8	4.3	2.5	2.0	3.0
Current A/c(US$ bill.)	-14.6	-36.0	-40.0	-40.0	-36.0
Real/$(nom.)	3.8	4.2	5.5	5.7	5.8

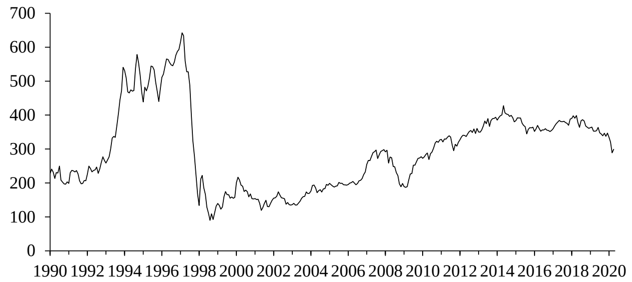
Other Emerging Markets

Hong Kong: FT-Actuaries

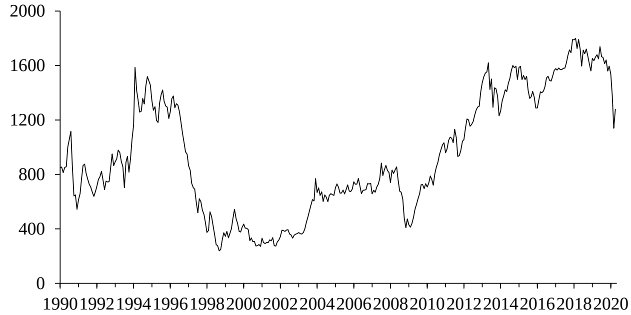
Indonesia: Jakarta Composite



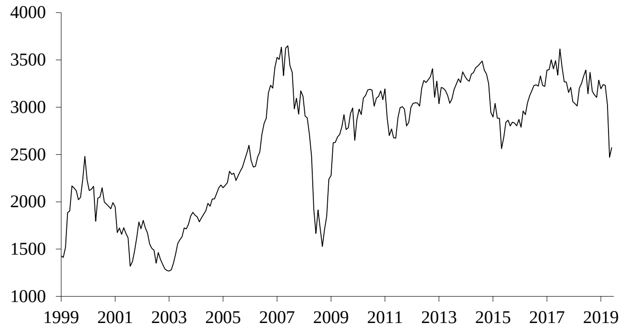
Malaysia: FT-Actuaries (US$ Index)



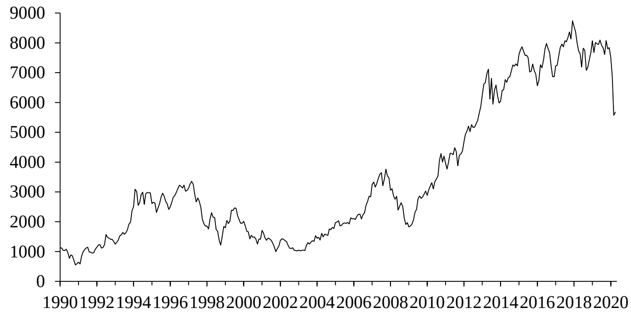
Thailand: Composite Index



Singapore: Straits Times Index

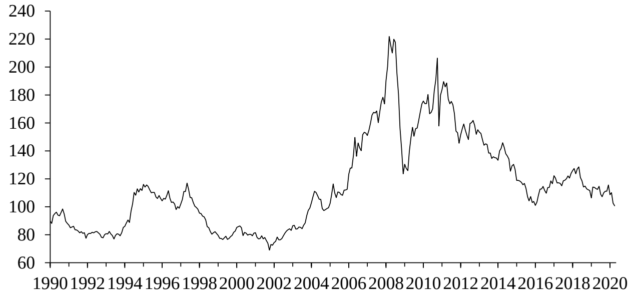


Philippines: Manila Composite

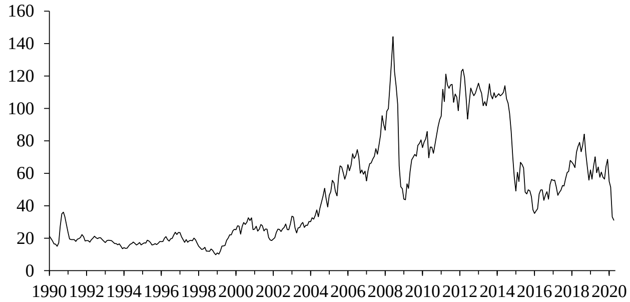


COMMODITY MARKETS

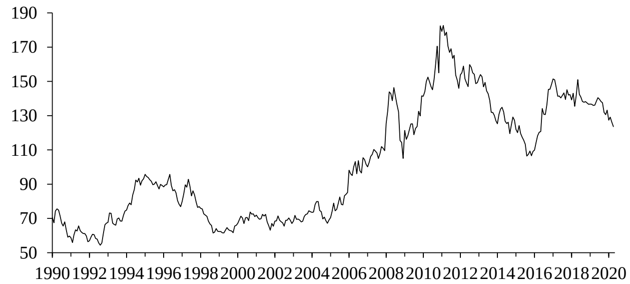
Commodity Price Index (Dollar)
(Economist, 2015 = 100)



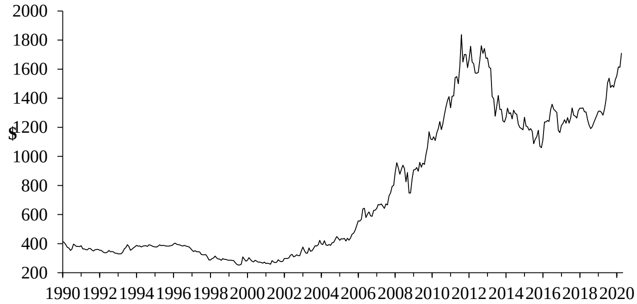
Oil Price: North Sea Brent (in Dollars)



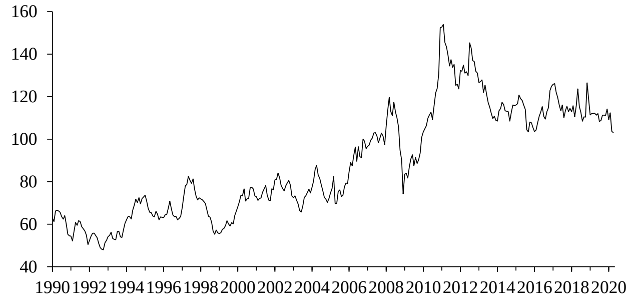
Commodity Price Index (Sterling)
(Economist, 2015 = 100)



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	2.5	1.0	0.7	78.6	76.9	-1.3	3.3	-1.0
2019	1.8	0.8	0.8	77.9	75.4	-0.9	2.5	-0.9
2020	1.7	0.9	0.6	78.3	76.0	-1.7	2.2	-1.0
2021	2.1	3.0	1.9	78.1	76.3	-1.0	2.8	1.0
2022	2.1	5.0	4.5	77.9	76.6	2.2	2.8	3.0
2023	2.0	5.0	5.0	77.7	76.8	2.9	2.7	3.0
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	77.9	75.5	-1.3	1.9	-0.8
2020:1	1.8	1.0	0.7	77.8	75.5	-1.3	2.4	-0.8
2020:2	1.5	0.5	0.3	78.8	76.3	-1.9	1.8	-1.4
2020:3	1.7	1.0	0.5	78.5	76.2	-1.6	2.2	-1.0
2020:4	1.8	1.2	0.8	78.2	76.1	-1.9	2.4	-0.8
2021:1	2.1	1.8	1.5	77.6	76.0	-1.1	2.9	-0.2
2021:2	2.0	3.0	1.7	78.6	76.5	-1.1	2.8	1.0
2021:3	2.1	3.0	2.0	78.3	76.5	-1.2	2.7	1.0
2021:4	2.1	4.2	2.5	77.9	76.3	-0.5	2.8	2.2

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	3.1	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
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

1 Whole Economy
2 Average Earnings\
3 Wholly unemployed excluding school leavers as a 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	167.8	803532.0	449022.2	304728.8	205398.3	-62992.2	92625.1
2020	157.1	752296.3	421831.1	242700.1	206623.8	-38566.7	80292.0
2021	166.3	796499.5	445807.6	259902.5	207875.1	-32871.7	84214.0
2022	170.8	817788.6	452277.2	271676.1	209119.9	-29139.7	86144.9
2023	175.9	842463.0	459061.5	288464.6	210372.4	-26816.4	88619.1
2018/17	1.4		1.0	2.3	0.2		-4.6
2019/18	1.4		0.7	-0.5	2.2		-12.4
2020/19	-6.4		-6.0	-19.8	0.6		-4.3
2021/20	6.0		5.8	7.6	0.6		5.9
2022/21	2.7		1.5	4.6	0.6		2.4
2023/22	3.0		1.5	6.2	0.6		2.9
2019:1	167.5	200581.1	111589.5	83278.3	52683.0	-28452.8	18516.9
2019:2	167.1	200109.6	112220.4	81082.1	50775.9	-13738.5	30230.3
2019:3	168.2	201343.7	113062.0	72473.6	51076.1	-12057.3	23210.7
2019:4	168.3	201497.5	112150.2	67894.7	50863.3	-8743.5	20667.2
2020:1	160.6	192311.9	108240.7	67988.1	52991.4	-16195.0	20713.3
2020:2	148.6	177965.4	99579.7	52806.3	51083.1	-6522.5	18981.2
2020:3	154.1	184471.5	103527.2	59658.8	51380.8	-10262.1	19833.2
2020:4	165.0	197547.5	110483.5	62246.8	51168.6	-5587.1	20764.3
2021:1	165.5	198201.1	111013.4	70457.3	53316.8	-15597.0	20989.4
2021:2	165.9	198658.6	111096.8	62414.7	51391.3	-5280.0	20964.2
2021:3	166.0	198782.0	111236.0	64708.1	51690.8	-7856.1	20996.8
2021:4	167.8	200857.8	112461.4	62322.3	51476.2	-4138.6	21263.5

[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	2114.2	43.3	25.3	-93.8
2020	4.6	2047.9	89.9	26.0	-42.8
2021	0.4	2206.1	8.9	33.8	-31.5
2022	0.2	2318.1	4.6	42.4	-22.4
2023	0.0	2436.9	0.3	44.0	-16.6
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	3.9	537.3	21.1	6.4	-17.9
2020:1	-3.5	513.4	-18.0	6.3	-8.6
2020:2	11.1	476.6	53.0	5.9	-11.9
2020:3	7.1	495.2	35.3	6.2	-10.9
2020:4	3.9	535.1	21.0	6.6	-11.3
2021:1	-3.6	541.0	-19.5	7.3	-7.4
2021:2	3.2	542.0	17.3	7.6	-9.8
2021:3	-1.3	545.9	-6.9	7.9	-5.9
2021:4	3.3	555.5	18.4	8.5	-8.3

[1] GDP at market prices (Financial Year)

WORLD FORECAST DETAIL

Growth Of Real GNP

	2017	2018	2019	2020	2021	2022
U.S.A.	2.2	2.9	2.3	–6.5	1.9	2.0
U.K.	1.8	1.4	1.4	–6.4	6.0	2.7
Japan	2.2	0.3	1.0	–7.9	0.8	1.0
Germany	2.5	1.5	0.5	–4.5	1.1	1.2
France	2.4	1.7	1.3	–7.0	1.3	1.4
Italy	1.7	0.8	0.2	–7.4	0.5	0.6

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	2.5	1.8	1.7	2.1	2.1
Japan	0.5	1.0	0.6	0.7	0.5	0.5
Germany	1.5	1.8	1.4	1.4	1.5	1.7
France	1.0	1.9	1.2	1.2	1.3	1.5
Italy	1.2	1.2	0.7	0.9	1.0	1.3

Real Short-Term Interest Rates

	2017	2018	2019	2020	2021	2022
U.S.A.	–1.5	0.1	0.1	–0.3	0.0	0.0
U.K.	–1.7	–1.3	–0.9	–1.7	–1.0	2.2
Japan	–1.0	–0.7	–0.8	–0.5	–0.4	–0.4
Germany	–2.1	–1.7	–1.8	–1.9	–2.0	–2.0
France	–2.2	–1.5	–1.7	–1.7	–1.8	–1.9
Italy	–1.5	–1.0	–1.4	–1.4	–1.6	–1.7

Nominal Short-Term Interest Rates

	2017	2018	2019	2020	2021	2022
U.S.A.	0.9	1.9	2.1	1.7	2.0	2.0
U.K.	0.4	0.7	0.8	0.6	1.9	4.5
Japan	0.0	–0.1	–0.1	0.0	0.1	0.1
Germany	–0.3	–0.3	–0.4	–0.4	–0.3	–0.1
France	–0.3	–0.3	–0.5	–0.4	–0.3	–0.1
Italy	–0.3	–0.3	–0.5	–0.4	–0.3	–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.	–1.5	–1.0	–0.9	–1.0	1.0	3.0
Japan	–0.6	–0.5	–0.6	–0.6	–0.5	–0.4
Germany	–1.3	–1.1	–1.9	–2.1	–1.9	–1.7
France	–0.6	–0.5	–1.2	–1.5	–1.4	–1.3
Italy	1.1	1.6	0.9	0.1	0.1	0.2

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	0.8	0.9	3.0	5.0
Japan	0.1	0.1	–0.1	–0.1	0.0	0.1
Germany	0.3	0.4	–0.3	–0.4	–0.2	0.0
France	0.8	0.8	0.2	0.0	0.1	0.2
Italy	2.1	2.6	2.1	1.3	1.4	1.5

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	75.4	76.0	76.3	76.6
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	10.96	104.31	106.53	105.84	104.43
U.K.	1.29	1.34	1.28	1.26	1.28	1.30
Japan	112.10	110.40	109.02	108.90	109.50	109.30
Eurozone	0.89	0.85	0.89	0.92	0.91	0.90

[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