LIVERPOOL INVESTMENT LETTER

September 2020

Cardiff Business School
Ysgol Busnes Caerdydd

Julian Hodge Institute of Applied Macroeconomics

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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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CAN THE ECONOMY SURVIVE A SECOND WAVE?

The main uncertainty currently besetting the government is how to prepare for a second wave of the coronavirus. Virologists of the alarmist school tell us it could be terrible, and we should prepare for more lockdowns, or even persist in much of the current lockdown. Plainly this virus is so new and so little about it is known that we cannot know for sure if they are right. But we can look at the facts and see what they tell us. As it happens, we already have data on 28 countries' second waves. Why look in the crystal ball when you can read the book?

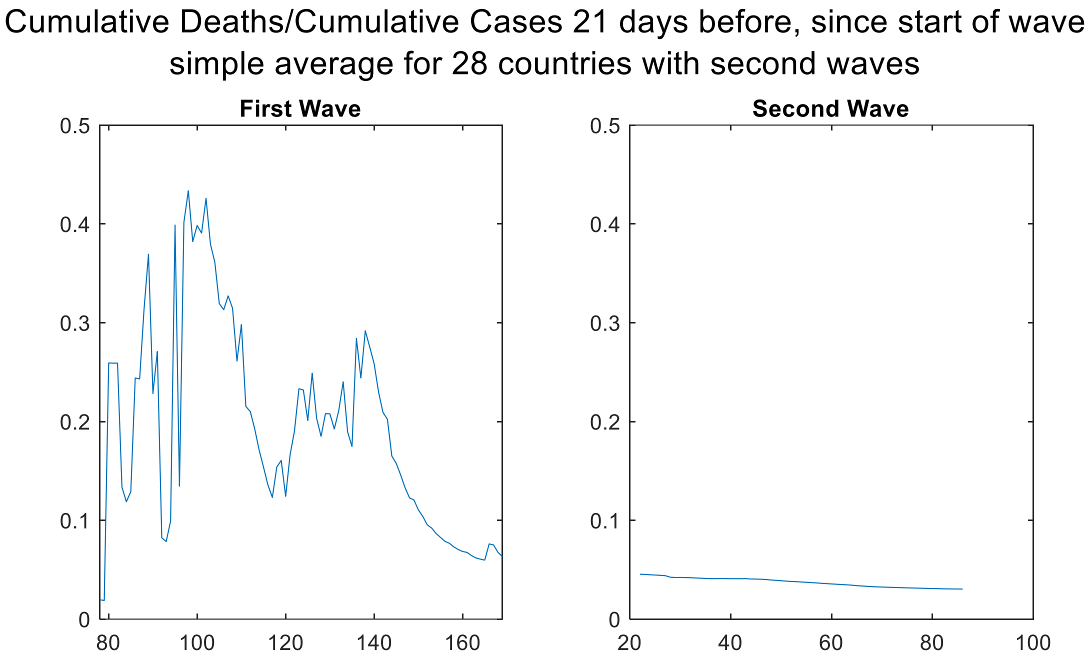
In these second waves, the same virus has attacked the same population, having already completed a first attack. Evolutionary biology tells us that two main things could have changed between the two waves. First, all organisms come in numerous copies or mutations, from which natural selection weeds out the least fit to survive; hence the surviving virus mutations in the second wave will exclude those that died in the first, whether by killing their host or by being killed by their host recovering from a nasty bout of covid-19 which produced killer antibodies. Second, the population being attacked in the second wave should have more immunity than the one attacked in the first, since it will include at least some who survived from the first wave, while it will no longer sadly include those who did not. So in sum it is likely that the virus has 'weakened' and the population has 'strengthened'.

Our 28 countries divide into two groups: 12 with a big second wave relative to the first, and 16 with a small one. The first includes the US, Japan and Vietnam; the second Germany, Netherlands and Singapore. What distinguishes the second group is that it had a longer first wave, and seems to have had a good localised test-trace-isolate system operating second time around, if not also in the first wave. What all 28 countries have in common is a rapidly falling death rate per reported case. This supports the idea of a weaker virus meeting a stronger population. It could also be due to better treatment, but this had already occurred by the end of the first wave, where the cumulative death rate came down impressively to 10% from a peak of 40%; the fall in the second wave has however been proportionately much bigger, to about 3%. This can be clearly seen in the following chart, showing the average cumulative death rate for all 28 countries in each wave.

Table 1: Summary of Forecast

	2017	2018	2019	2020	2021	2022	2023
GDP Growth[1]	1.8	1.3	1.4	-6.6	6.2	2.9	3.1
Inflation CPI	2.6	2.4	1.8	1.7	2.0	2.0	2.0
Wage Growth	2.8	3.0	3.5	3.0	3.2	3.1	3.3
Unemployment (%)[2]	4.4	4.2	4.1	7.2	5.6	3.5	2.8
Exchange Rate[3]	77.4	78.6	78.1	78.9	77.9	77.7	77.6
3 Month Interest Rate	0.4	0.7	0.8	0.4	1.9	4.5	5.0
5 Year Interest Rate	0.6	1.0	0.6	0.4	2.6	5.0	5.0
Current Balance (£bn)	-68.3	-82.9	-83.8	-64.3	-54.1	-45.5	-40.3
PSBR (£bn)	53.7	39.3	43.2	239.1	101.9	51.0	7.6

[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)



If we use this data to estimate the underlying causes at work, my colleague David Meenagh and I estimate[1] much larger government and social reaction responses for the small second wave group than for the other, confirming that they had better localised strategies for 'whack-a-mole'. The small group also exhibit more general immunity and more overall penetration into the population, confirming that you get a smaller second wave the bigger and longer the first wave because there is more resistance in the population.

These results should cheer our embattled UK government which now appears to be getting local test-and-trace right — the emphasis is on 'local': another (general) lockdown must be avoided. But the fact that the UK had a long and large first wave is now a source of strength because there must both be wide immunity across the population and there must have been a huge destruction of the most damaging virus mutations. The evidence we now have points to the UK being close to the small second wave group of countries, and so well able to avoid a second lockdown.

The main point of this excursion into virus prediction is to reach a forecast for the economy over the rest of this year, when the fabled second wave may hit. Our forecast suggests it will be an anti-climax. There is no reason to prevent a continuation of the current 'so far, so V', to quote the Bank's chief economist, Andy Haldane. In all the hullabaloo over the second quarter's 20% fall, a few small voices noted that it all occurred in April, with both May and June recouping about half the fall — implying a total fall of about 10% over the course of the three months. This 10% should be recouped in the third and fourth quarters, to restore GDP to pre-Covid levels by year end. The UK Composite purchasing managers flash index from IHS Markit for August, at the strong-growth level of 60.3, supports this view. Meanwhile the world economy has it seems from the firm's JPMorgan global index fought back to 2% above its year-ago level of GDP. China is at the head of the pack, but the rest of the pack is not far behind. The voices of gloom say the labour market and rising unemployment will stop the rebound. But employment lags output and demand, so that as the rebound occurs, it will pull employment up with it, just as the enforced fall in GDP and demand pulled it down.

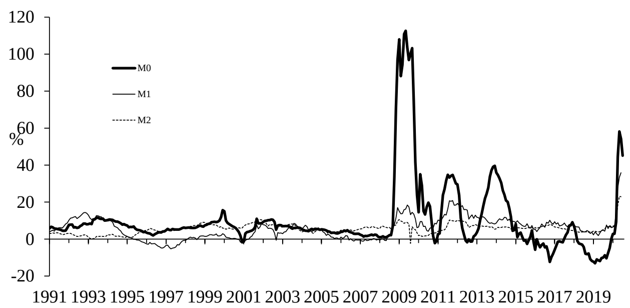
A last word on policy. The government has done well so far, with robust support of the economy from both fiscal and monetary policy. Let us give praise where praise is due. A faltering response would have been all too easy, as we are now seeing in the US with Congress and the President at loggerheads; but falter it did not.

A huge challenge lies ahead, as I have argued before in the Telegraph[2]. There needs to be a continuation of bold fiscal support as we move into the post-Covid post-Brexit world. Taxes must be held down and reformed or cut and infrastructure rebuilt to boost Britain's supply-side. Demand must be supported to allow the supply-side response to unfold; and also to allow monetary policy to retreat from the massive money-printing splurge we have had, with its threat of inflation rebirth. These policies will be resisted by the conventional thinking of mostly Remainer economists in the civil service and left-leaning think tanks; the government should not listen to their advice, remembering that the majority privately long for nothing more than its failure and the return of Labour as now reconstituted. The truth is that having shown it can afford to deal with Covid, this government can well afford to spend the smaller amounts needed to support the future of the economy.

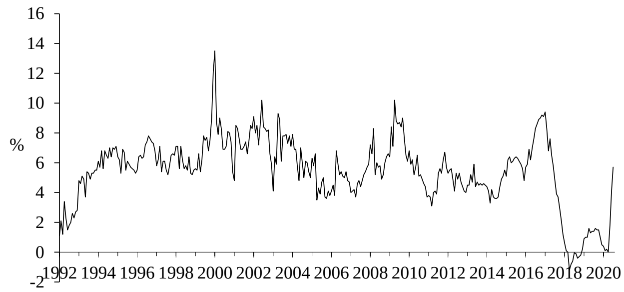
[1] http://carbsecon.com/wp/E2020_4_Online_Appendix.pdf

[2] https://www.telegraph.co.uk/politics/2020/07/24/remarkably-v-shaped-recovery-economy-will-look-surprisingly/

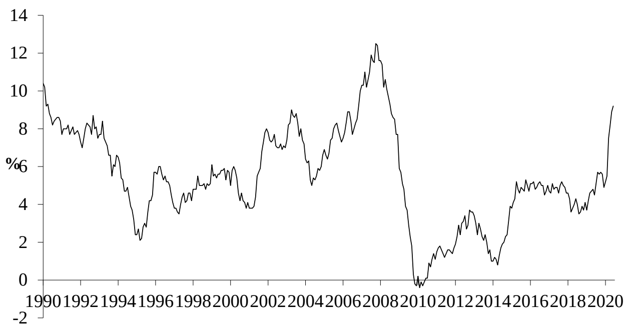
U.S.: Growth in Monetary Aggregates (Yr - on - Yr)



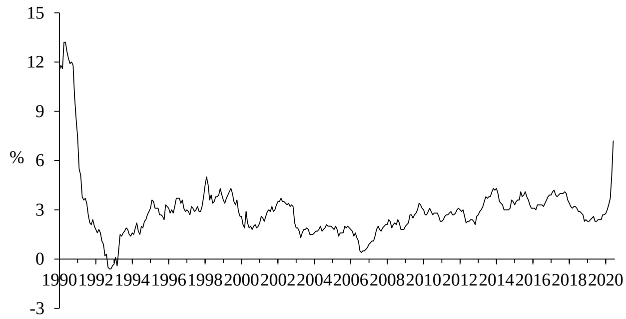
UK: Notes and Coins in Circulation Growth



Eurozone M3 Growth



Japan: Growth of M2+CD's



FOCUS ON JAPAN

Francesco Perugini

Coronavirus Crisis Hit Japan's Economy While Prime Minister Resigns

As expected, Japan's economy suffered its biggest contraction on record in the April–June quarter amid the pandemic. The economy contracted 7.8% q-o-q in the second quarter of 2020, year-on-year real GDP was down 9.9%, a bit more than the 9.5% contraction in the US, but still less than the 15.0% collapse in the Eurozone. However, Japan did worse than neighbouring South Korea and Taiwan, as both countries managed to control the virus without extensive lockdowns, allowing their economies to function more normally.

The government said the April–June period marked the third consecutive quarter of negative economic growth. The last time the country reported a GDP contraction for three consecutive quarters was when Japan was struck by the Great East Japan Earthquake, tsunami and the Fukushima nuclear disaster. That contraction lasted from the last quarter of 2010 through the second quarter of 2011. Yasutoshi Nishimura, the minister in charge of economic revitalization, said the record decline was brought about by the pandemic. "In April and May, economic activities were brought to a halt artificially under the state of emergency," he said at a news conference on Aug. 17. "As a result, the GDP figures were extremely grim. Data on other countries' GDP are similar to Japan or worse."

The sharp drop in the second quarter is attributed to a decrease of 10.9% y-o-y in personal consumption, which account for 6.1 percentage points (y-o-y) of the decline in GDP. It was the largest-ever drop on record, surpassing the previous record in the April–June period of 2014, when the consumption tax was hiked to 8%. Personal consumption, which accounts for more than half of the GDP, was significantly disrupted after people were asked to stay home and businesses, including restaurants and leisure facilities, were asked to close in a bid to stem the spread of the virus. Business investment was surprisingly strong, however, and contributed just 0.6 percentage points to the overall decline in output. Businesses apparently became more cautious because the pandemic triggered economic uncertainty. Meanwhile, exports saw a 5.7% decline from the same quarter of the previous year, as sales of Japanese cars and other products sharply dropped amid a global economic downturn.

Along with some of the 34 economists surveyed by the Japan Center for Economic Research, a non-profit private research institute, we forecast Japan's economy to have a strong rebound in the July–September period, given the gradual resumption of economic activity after the end of the virus emergency. Indeed, personal consumption has been on a recovery track since the state of emergency was lifted at the end of last May. Spending by households of two or more people grew 13% in June from May on a seasonally adjusted basis, according to a survey by the internal affairs ministry. A special relief pay-out of ¥100,000 by the government apparently helped. However, spending on trips and at restaurants has not rebounded. Although the government aims to prop up the tourism industry through a travel campaign it launched last month, it is unclear if it can generate the desired results as coronavirus cases now surge nationwide. As a result, some economists are less optimistic about the recovery of the Japanese economy in the fall or later. "The economy may keep getting better and then worsen again until a vaccine or drugs to cure the disease become available," one of the 34 surveyed economists said. Some of them believe it will take at least a few years for the economy to bounce back to its pre-pandemic level. "We can't say the situation of Japan's economy is better than others. In the long run, deterioration in the employment and income circumstances and (weak) corporate earnings will significantly weigh on the economy", said Taro Saito, executive research fellow at the NLI Research Institute.

The economic consequences have also raised criticism on the government accused to appropriately handle countermeasures against the spread of the novel coronavirus. Prime Minister Shinzo Abe has deployed massive fiscal stimulus and financial measures to cushion the blow from the pandemic. It is important to put top priority on dealing with the crisis and take every possible measure toward that end. In an extraordinary Diet session to be convened in autumn, the focus of the debate is expected to be on measures to improve the medical system and testing, as well as prospects for vaccine supplies and additional economic stimulus measures. Local governments are calling on the central government to issue legally binding requests to suspend business operations, and for the systematization of financial assistance in the form of cooperation money for businesses that comply with the requests. It is hoped that these issues will be discussed from various angles.

However, there is another big issue that Japan must deal with, and this is the resignation of Shinzo Abe as Prime Minister for health reasons. At the end of last month, the longest-serving Japanese prime minister in history, has resigned, citing health reasons. "Even though there is one year to go in my tenure and there are challenges to be met, I have decided to stand down as prime minister", said Abe at a press conference in Tokyo on 28th of August, adding that he would like to apologize to the people of Japan for being unable to fulfil his duties during the coronavirus pandemic. Attention has now shifted to who will replace Abe and how his successor will put the economy back on the growth path and accelerate the structural reforms needed for so long.

MARKET DEVELOPMENTS

With a general V-shaped recovery on track around the world, and fiscal policy expansionary, with central banks poised to tighten once recovery has solidified, rising interest rates will set back bond prices, while growth will support equities.

Table 1: Market Developments

	Market Levels		Prediction for Aug/Sep 2021	
	Aug 5	Sep 4	Previous Letter	Current View
Share Indices				
UK (FT 100)	6027	5799	7377	7974
US (S&P 500)	3349	3427	3453	4188
Germany (DAX 30)	12592	12843	18699	21473
Japan (Tokyo New)	1550	1617	1909	1992
Bond Yields (government)				
UK	0.12	0.25	2.00	2.50
US	0.53	0.72	2.80	2.80
Germany	–0.52	–0.47	–0.20	–0.20
Japan	0.01	0.04	0.00	0.00
UK Index Linked	–2.37	–2.19	1.00	1.00
Exchange Rates				
UK ($ per £)	1.31	1.32	1.32	1.32
UK (trade weighted)	78.10	78.93	78.2	78.0
US (trade weighted)	104.47	103.30	102.5	102.5
Euro per $	0.84	0.85	0.85	0.85
Euro per £	1.11	1.12	1.12	1.12
Japan (Yen per $)	105.53	106.33	112.5	112.5
Short Term Interest Rates				
UK	0.83	0.83	1.70	2.00
US	0.27	0.24	1.80	1.80
Euro	–0.48	–0.47	–0.30	–0.30
Japan	–0.50	0.50	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	2.5	2.0	33.00		41.10
US	1.99	2.3	2.0	17.90	0.06	24.25
Germany	3.30	1.7	1.5	64.00	–0.22	70.28
Japan	1.90	0.7	0.5	22.00	–5.74	19.36
UK indexed[2]	–2.31		2.0	8.00		7.81
Hong Kong[3]	2.60	4.0	2.0	–25.00	0.06	–16.34
Malaysia	3.30	2.0	2.0	21.00	0.06	28.36
Singapore	3.50	1.0	2.0	–1.00	0.06	5.56
India	1.40	5.0	2.0	–1.00	0.06	7.46
Korea	1.10	0.8	2.0	–36.00	0.06	–32.04
Indonesia	2.20	3.0	2.0	8.00	0.06	15.26
Taiwan	2.80	1.0	2.0	4.00	0.06	9.86
Thailand	3.20	1.5	2.0	10.00	0.06	16.76

Bonds: Contribution to £ yield of: –

	Redemption Yield	Changing Nominal Rates	Currency	Total
UK	0.25	–22.48		–22.23
US	0.72	–20.77	0.06	–19.99
Germany	–0.47	–2.68	–0.22	–3.37
Japan	0.04	0.36	–5.74	–5.35

Deposits: Contribution to £ yield of:

	Deposit Yield	Currency	Total
UK	0.83		0.83
US	0.24	0.06	0.30
Euro	–0.47	–0.22	–0.69
Japan	0.50	–5.74	–5.24

[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(%)

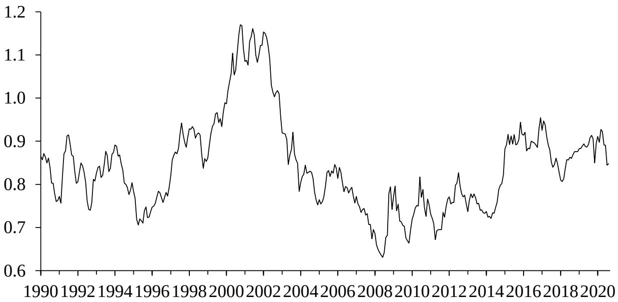
	Sterling Based Investor		Dollar Based Investor		Euro Based Investor	
	August Letter	Current View	August Letter	Current View	August Letter	Current View
UK Deposits (Cash)	5	5	5	5	1	1
US Deposits	-	-	-	-	-	-
Euro Deposits	-	-	-	-	-	-
Japanese Deposits	-	-	-	-	-	-
UK Bonds	-	-	-	-	-	-
US Bonds	-	-	-	-	-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

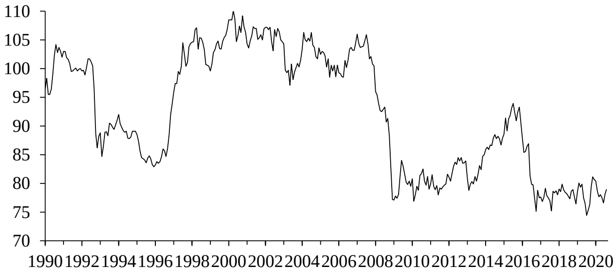
US : Trade Weighted Index
(Bank of England 1990 = 100)

UK: Dollars Per Pound Sterling

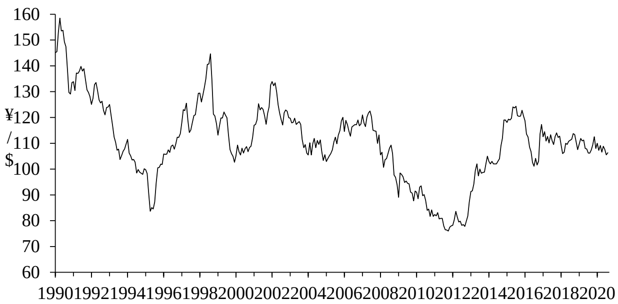
Euro per US dollar



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



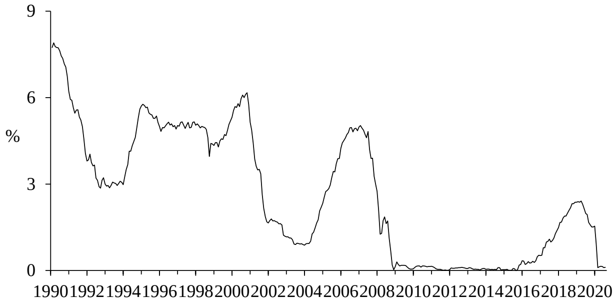
Japan : Yen Per U.S. Dollar



GOVERNMENT BOND MARKETS

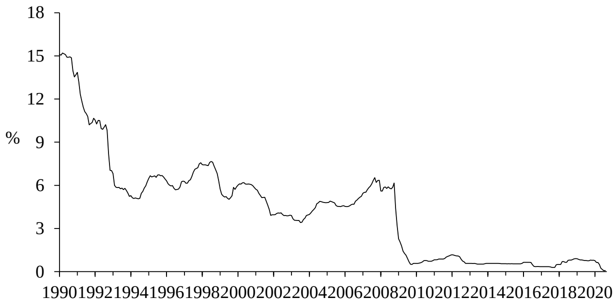
U.S.: Yield on Long-Term Government Bonds

U.S. : 3-Month Treasury Bill

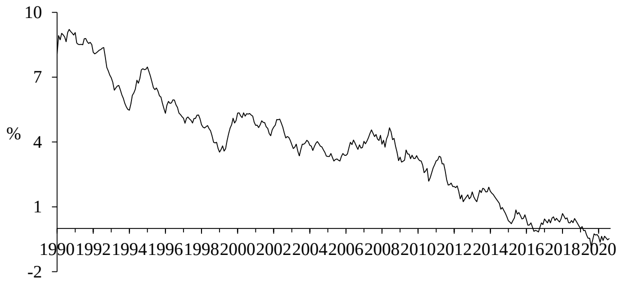


U.K.: Yield on Long-Term Government Bonds

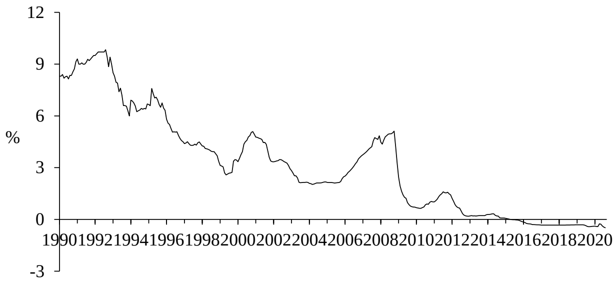
U.K. : 3-Month Certificate LIBOR Rate



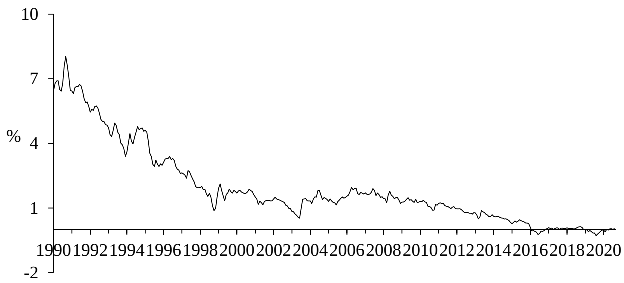
Germany: Yield on Public Authority Bonds



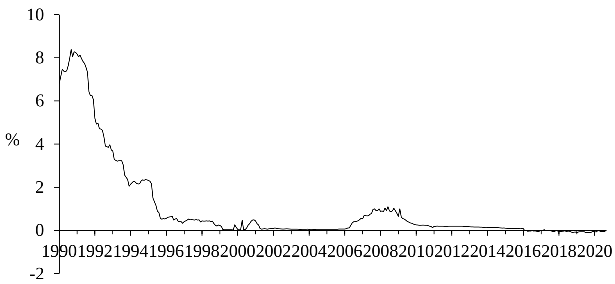
Germany : 3-Month Interbank Deposit Rate



Japan: Yield on Long-Term Government Bonds

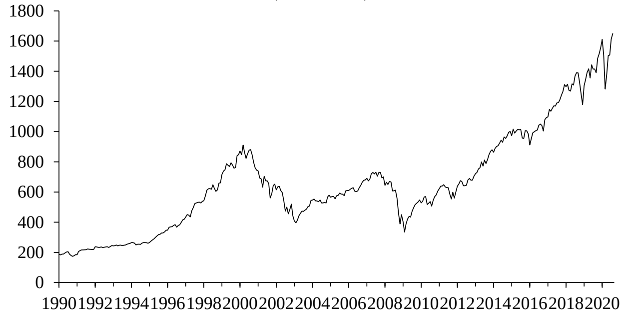


Japan : 3-Month Money Market Rate

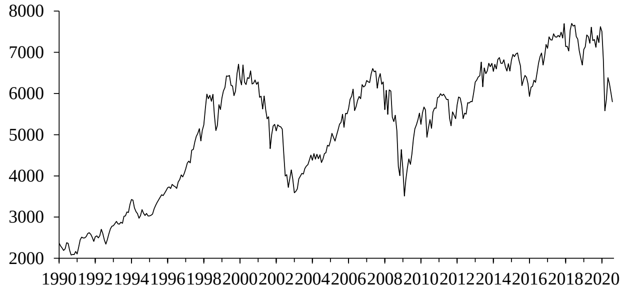


MAJOR EQUITY MARKETS

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

The Indian economy is in the middle of restructuring its economy. She is using the Covid-19 pandemic to restructure its economy and hopes to achieve a respectable share of GDP coming from military-industrial complex and privatization of state owned companies and banks. Political leadership is preparing the country to bear the pain for the next two years in the name of sovereignty and national integrity. Its investment in satellite based surveillance and building physical infrastructure at its borders with its neighbours is bearing desired results.

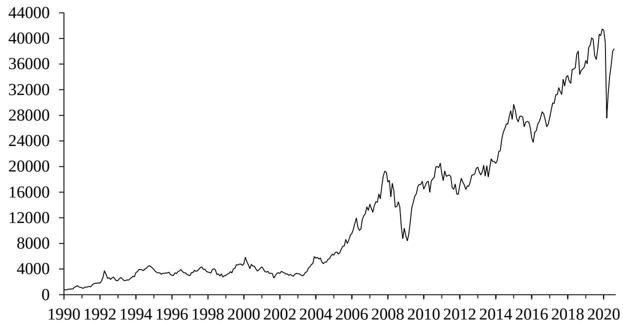
To incentivize the domestic manufacturing sector, India has blocked competition from abroad. Despite most sectors permitting 100% foreign investment, the government has tweaked the rules to create barriers for entry and raised import duties on a large number of products. Defence Ministry released a list of 101 items which can only be produced by Indian defence manufacturers. The government expects the orders from the three services — Army, Navy and Air Force — to be a cumulative Rs 4 trillion (~$55billion) in the next five to seven years to be taken up by the Indian private sector. This year, railways announced plans to let the private sector run 151 trains by the year 2023. Only Indian-owned companies are likely to be eligible. There is also the Production Linked Incentive Scheme (PLI) to encourage large-scale electronics manufacturing in India. It starts with the premise that the domestic electronics hardware manufacturing sector faces the lack of a level-playing field against competing nations.

India's economy shrank by a record 23.9% in the Q2 of 2020, quarter-on-quarter — the biggest blow the coronavirus pandemic has dealt to a major economy so far — as a nationwide lockdown and fear of the fast-spreading pandemic strangled spending. India's lockdown, beginning in late March, was among the strictest in the world, shutting down virtually every nonessential part of the economy. Yet it managed only to delay the virus's spread, which continued to crush economic activity after the lockdown began easing in May just as outbreaks started to hit India's densely populated cities.

India has more than 4 million confirmed infections and remarkable low 70,000 deaths from the virus so far. With more than 80,000 new cases a day — more than any other country in the world — India has surpassed Brazil and, eventually the U.S., to lead the world in total reported cases as we identified in the last month's Letter.

Notwithstanding that India is posting a higher and higher number of confirmed Covid-19 cases, the federal government has decided to open the economy from September 21st onwards except schools and colleges, inter-state trains and social functions having more than 100 people. Probably, the government feels that it is the right time for people to get back to work and the nation will acquire herd immunity as we go along. Comparatively, low numbers of deaths per million of population suggest that the nation has acquired some level of herd immunity already.

India: BSE Sensitive



Taking note of these external unexpected shocks to the economy, we have revised our forecast for India in the coming years. We expect GDP to shrink 6% in the current financial year and be able to grow only 5% in 2021 and 5.5% in 2022. Monsoon had been kind to India and the current year's southwest monsoon was ~6% higher than the long period average. Demand for white goods, agriculture implements and broadband service are booming. This is going to ensure that vast number of people living in villages are able to manage their livelihood.

Commercial vehicle movement on national highways recovered to near 90% of pre-covid levels in July 2020. Goods traffic on roads and trains is limping back to pre-Covid 19 level. But the trend growth in consumption will be lower because consumers are more cautious because of the uncertainty and risk. Mobility data from Google show that despite the end of most of the country's lockdown measures and New Delhi's efforts to revive confidence, activity around retail recreational locations in India remains 40% below the level seen before the coronavirus started to spread early this year.

India's retail inflation rose to 6.15% in July from 6.09% in June. Inflationary pressures, on the other hand, are expected to remain high in the near-term on the back of persistence of supply chain disruptions. Expectations of a bumper harvest and weak aggregate demand, however, should ease inflation in the latter part of the fiscal, supported by a favourable base.

The RBI has hinted that allowing the rupee to strengthen could help India deal with imported inflation. The rupee has been gaining strength over the past few weeks and, unlike before, RBI has let it appreciate. The Rupee has appreciated

3.6% this fiscal year despite RBI's dollar purchases. Foreign exchange reserves are near a record at $540 billion, up $108 billion from a year earlier.

India had reported its latest trade numbers, and for the second successive month, India's goods exports were within touching distance of their pre-covid levels. In July 2020, exports fell 10.2% to $23.6 billion which was 10% lower than the last year. Imports plunged 28.4% on-year to $28.4 billion in the month of July. Due to muted domestic demand and consequently low imports, the trade deficit in July 2020 was $4.8 billion, compared to a trade surplus of $0.8 billion in June.

India triggered the latest clash with China on their Himalayan border by executing a stealth night-time operation to claim strategic outposts offering a clear view of troop movements in disputed territory with China. Thousands of soldiers climbed up mountain peaks for about six hours to claim the vantage points along the south bank of Pangong Tso — a glacial lake roughly the size of Singapore. The action was taken to counter what India saw as an intrusion by Chinese forces.

While India denied that troops crossed the Line of Control, the move will prevent China from easily monitoring an Indian road that is crucial for transporting supplies, soldiers and heavy artillery to forward posts along the disputed border.

Both India and China have moved thousands of troops, tanks, artillery guns and fighter jets close to the border since their standoff began in May. But India's move in the last week of August escalated the conflict. The Indian military move along the border is defensive but has elements of deterrence. India is now waiting to see how China reacts, including any moves to counter the deployment that could result in hostilities.

Within China, the appetite for more aggressive moves appears to be growing. A joint survey launched by the Communist Party-run Global Times and the China Institutes of Contemporary International Relations, a research group affiliated with the Ministry of State Security, found more than 70% of the nearly 2,000 people surveyed believed India was being too hostile against China. Nearly 90% supported the government in retaliating strongly against Indian provocations. The latest skirmishes underscore the growing risks of a Himalayan military conflict. It seems that India and China are likely to avoid a direct confrontation in 2020 until the US Presidential elections are out of the way.

India's Defence Minister Mr. Rajnath Singh met his Chinese counterpart Mr Wei Fenghe in Moscow in the first week of August in a meeting of Shanghai Cooperation Organization (SCO). In the presence of the Chinese Defence Minister he said, "Peaceful, stable and secure region of SCO member states, which is home to over 40% of the global population, demands a climate of trust and cooperation, non-aggression, respect for international rules and norms, sensitivity to each other's interest and peaceful resolution of differences." India maintains that action was to prevent China to "unilaterally alter the status quo" at the Line of Actual Control (LAC).

According to Global Times, an English-language Chinese newspaper under the People's Daily, China is an immovable neighbour and much stronger than India. In the meantime, it will never manage to get one more inch of land at China-India border areas.

The conflict has prompted economic ties to deteriorate, with India limiting Chinese investments, tightening scrutiny on visas and moving to keep Huawei Technologies Co. out of 5G networks. India has banned 118 Chinese apps including Tencent Holdings Ltd.'s wildly-popular game PUBG Mobile Lite and payments service Alipay, following up on its June ban of several applications including ByteDance Ltd.'s viral short-video service TikTok.

	18–19	**19–20**	**20–21**	**21–22**	**22–23**
GDP (%p.a.)	6.8	4.2	-6.0	5.0	5.5
WPI (%p.a.)	3.9	3.6	5.5	5.0	5.0
Current A/c(US$ bill.)	-70.0	-20.0	0.6	2.0	-10.0
Rs./$(nom.)	79.5	73.0	75.0	76.0	77.0

China

The Chinese economy recovered strongly in 2020 Q2 after the collapse in the previous quarter. GDP growth was 12.3% quarter-on-quarter in 2020 Q2 after a 6.8% fall in the previous three months. China's official non-manufacturing purchasing managers index rose to 55.2 in August from 54.2 a month earlier, mainly driven by the service sector. This is the sixth consecutive month that the index topped the 50 mark that separates expansion from contraction. The manufacturing index, a gauge of China's factory activity, slipped marginally to 51.0 in August, from 51.1 in the previous month, but this too remained in expansionary territory for a sixth straight month.

However, consumption remains in negative territory, defying expectations for a return to pre-coronavirus levels. Retail sales fell 1.1% from a year earlier. Retail sales have recorded negative growth every month this year. Consumer demand couldn't recover because people were told to be careful. Even after the resumption of business at restaurants and retail stores across the country, which began in April, the economic activity is far away from the pre-Covid 19 level. The economic recovery is in a precarious position, being hurt by rising tensions between Washington and Beijing and as another wave of local infections returns in the winter.

China's consumer price index (CPI) rose 2.7% from a year earlier in July, up from a 2.5% gain in June but the producer price index fell 2.4% year on year in July. Inflation is expected to fall as food prices cool down and shrinking household demand hammers down prices of goods and services.

China's dollar-denominated exports rose 7.2% from a year ago in July, while dollar-denominated imports fell 1.4% in the same period. Exports got boosted due to demand for medical supplies.

China posted a trade surplus of $62.3 billion compared to trade surplus of $46.4 billion in June.

Despite the coronavirus pandemic hitting global demand, exports from China have held up as exports in medical supplies jumped in the first half of the year. China's export machine has shown that its resilience lies not only in the country's low-cost, skilled labour and efficient infrastructure but also in a state-controlled banking system that has been offering small and large businesses extra loans to cope with the pandemic.

The Chinese yuan's recent rally is likely to be sustained due to persistent dollar softness and continued capital inflows. The yuan touched a near 16-month peak around 6.81 against the U.S. dollar in the last week of August and stands about 2% stronger for the year so far. China's currency has climbed more than 5% from this year's low in May. The rebound in the yuan has been helped by optimism over the trade deal with the U.S.

The intensifying skirmishes in the South China sea, at its southern border with India and with U.S.-China rivalry have cast a cloud over Beijing's economic outlook despite better-than-expected export data in recent months. How long the resilience in outbound shipments can continue amid a hostile business environment for Chinese companies in many developed Western countries remains an open question. In recent weeks, Chinese leader Xi Jinping and other senior officials have talked up the importance of relying more on the domestic market as its relationship with many Western economies sour.

In order to deal with a hostile business environment abroad, President Xi has proposed the concept of a "systematic deep-level reform" at a meeting of the party's central committee for deepening overall reform. The new policy is "a strategic decision made in accordance with changes in China's development stage, environment and conditions," he said. He has also given a slogan to push long-term growth of the economy which roughly translates to 'dual circulation'. The 'dual circulation' slogan is an attempt to have it both ways: for China to gain more control over its long-term growth without losing its role as a central hub in the global economy.

Pushing consumers to drive more growth has been a core policy for over a decade now and had been showing some success, with consumption comprising an average 64% of gross domestic product in 2016–2019, up from 54% in the previous five years. According to Prof Eswar Prasad of Cornell University, 'dual circulation' casts them in a framework that mixes domestic dynamism with greater resiliency against external shocks, "It ties in to nationalistic aspirations of becoming less reliant on external sources for demand, technology, and financing."

The goal of 'dual circulation' is to make China far less dependent on foreign firms, technology and markets, though doing so won't be easy, especially at a time when entrepreneurs are unwilling to expand and households are cutting back on spending. Detailed policies will be fleshed out in an October meeting of the ruling Communist party's 370 or so top officials, known as a plenum, when they gather to discuss an economic blueprint for the next five years starting in 2021. Behind the inward-looking pivot is a realization in Beijing that fraught relations with much of the developed world are here to stay. China has restricted artificial intelligence-related exports, in retaliation against U.S. pressure on Chinese technology companies. In order to become self-reliant in technology, China has poured large sums of money in domestic research and university based labs. China's State Council issued a new directive pledging tax cuts and other financial support for domestic chip makers and software providers. President Xi has made it imperative to make the state sector bigger, stronger and better.

A March survey by UBS Group of Japanese, Korean and Taiwanese companies that produce in China and sell to the rest of the world found that 85% had already relocated or intended to shift some capacity out of China.

A Chinese diplomatic offensive to improve ties with Europe and counter U.S. influence has failed to yield clear gains so far. Chinese Foreign Minister Mr. Wang visited Europe since the start of the coronavirus pandemic, after the U.S. Secretary of State, Mike Pompeo, urged Europe to confront China both politically and economically.

During Mr. Wang's visit, the EU published two opinion pieces describing China as a new empire and criticizing its lopsided economic relation with Europe, saying Chinese firms enjoying better access to European markets than vice versa. According to Josep Borrell, European Union Minister for Foreign Affairs, "Our relationship is excessively asymmetric for the current level of Chinese development. And that must be corrected. … If we don't do it now, in a few years it will be too late. Chinese products will continue to move up the value chain and our economic and technological dependence will increase".

	18	19	20	21	22
GDP (%p.a.)	6.6	6.1	2.0	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 is experiencing the second wave of Covid-19. In the last week of August, the Covid-19 cases had been rising for nearly two weeks. The country is adopting Level Three social-distancing — the highest of a three-tier system created in June; a level of intervention the South Korean government has never used. It would bar any gathering above 10 people, the suspension of professional sports and the closure of movie theatres, wedding halls and gyms. Companies would be instructed to tell all but essential staff to work from home. Some 56% of South Koreans view enacting the tightest restrictions as a "necessary measure" to thwart the virus.

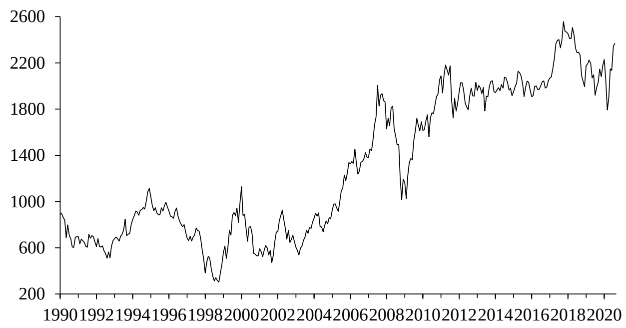
The Bank of Korea expects the economy to shrink 1.3% in 2020. GDP could contract more than 2% in 2020, but we continue to maintain our forecast as the country is well prepared to handle the situation. GDP has posted two consecutive quarters of negative growth, with the second quarter posting a negative 2.7% year-on-year decline.

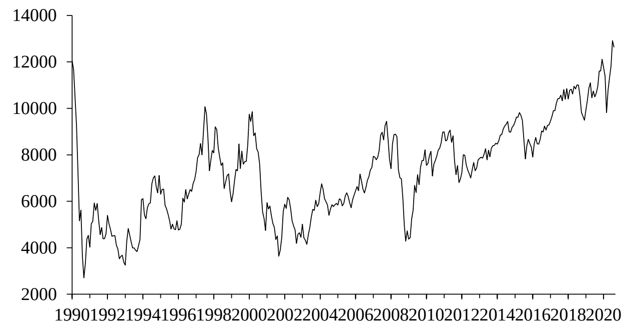
The South Korean government Intends to approach the parliament for about 7.5 trillion won ($6.3 billion) in the second week of September, its fourth extra budget to fight a resurgence of the coronavirus. The new funds will be used to aid more vulnerable sectors of society including low-income workers and some self-employed people.

South Korea's headline inflation gained 0.7% in August from a year earlier after the prior month's 0.3% rise. The Bank of Korea forecast inflation to stay put year.

Korea's exports in August posted $39.6 billion, a 9.9% year-on-year decline from $44 billion in 2019, according to the Ministry of Trade, Industry and Energy. From July, the country has seen a slight turnaround as exports posted only a single-digit decline for the month. Yet, Korea's export growth rate stands at a negative 16.1%, the lowest in 56 years since posting a 24% drop during the fourth quarter of 1963, according to the Bank of Korea.

Exports were down 9.9% on year and imports declined 16% from a year earlier in August, leaving a trade surplus of $4.1 billion. The rekindling of tensions between the U.S. and China poses a bigger threat to South Korean exports than Covid-19. Tightening U.S. curbs on Huawei Technologies Co. in particular threatens to disrupt semiconductor sales to China by South Korean companies.





The won has appreciated against the US dollar only but remained stable against other currencies.

	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	60.0	38.0	40.0	40.0
Won/$(nom.)	1130	1200	1230	1260	1260

Taiwan

In the second quarter of 2020 Taiwan posted negative quarterly GDP growth. Officially Taiwan has lowered its forecast for the country's economic growth in 2020 to 1.56%. COVID-19 has affected global demand this year, dragging down raw material prices and hurting old economy industries, and tourism income and service sector gains were also falling because of border controls imposed to contain the spread of the virus. But the local electronics sector has benefited from solid demand for emerging technologies such as 5G applications and high performance computing (HPC) devices as well as gadgets for online learning and remote work.

The COVID-19 scare has left consumers more reluctant to go out and spend money, but the government's stimulus measures are expected to boost consumption the rest of this year. Due to a plunge in crude oil prices, Taiwan's consumer price index is expected to fall in 2020.

In the first seven months of this year, Taiwan's exports rose 0.5% from a year earlier to US$186.2 billion, but imports fell 1.3% year-on-year to US$159.5 billion, with the trade surplus at US$26.7 billion, up US$3.1 billion from a year earlier.

The changing political scenario in the world is changing political priorities in the island country.

Taiwanese President Tsai Ing-wen said she wants to start talks on a free-trade pact with the U.S., part of a broad effort to deepen her island democracy's partnership with Washington and resist pressure from Beijing. The US is a major trading partner and key arms supplier for Taiwan.

U.S. Trade Representative, Robert Lighthizer, has so far blocked the idea, due to his objections to what he considers Taiwan's protectionist policies that curtail imports of American beef and pork to Taiwan.

India, who has been hesitant to acknowledge the warming relationship with Taiwan is all set to change when Delhi and Taipei celebrate 25 years of their partnership. Mutual efforts resulted in a range of bilateral agreements covering agriculture, investment, customs cooperation, civil aviation, industrial cooperation, among others. Notably, with $7bn bilateral trade and over $350mn worth of investments in India, Taiwan's Foxconn is reported to consider $1bn worth of investments to expand Apple iPhones assembling from India.

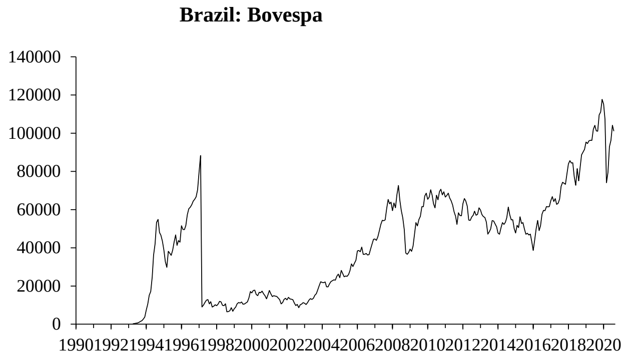
	18	19	20	21	22
GDP (%p.a.)	2.6	2.0	0.6	2.4	2.2
Inflation (%p.a.)	1.2	1.0	-1.0	1.0	1.0
Current A/c(US$ bill.)	68.0	70.0	71.0	70.0	60.0
NT$/$(nom.)	29.8	31.0	29.5	30.5	31.0

Brazil

Brazil's economy is officially in a recession due to the coronavirus crisis, which has so far killed more than 120,000 Brazilians and pushed millions into unemployment. Brazil has the world's third highest reported death toll after the US and India and many state governors have been extremely cautious in re-opening businesses.

The Brazilian economy shrunk in the second quarter by 9.7% quarter-on-quarter as anti-coronavirus lockdown measures crashed activity in almost every sector. Compared with the same period last year the decline was 11.4%. The magnitude of the slump in activity across the economy in the second quarter was huge: Industry fell 12.3%, services 9.7%, fixed investment 15.4%, household consumption 12.5% and government spending 8.8%. Household consumption accounts for two-thirds of all economic activity in Brazil. Only agriculture expanded in the quarter by 0.4%.

The economy is likely to shrink 5.5% this year and grow about 2% in 2021. The government remains optimistic and



hopes that contraction in GDP this year would be only 4.7%, which would still be the largest annual fall since records began in 1900. Brazil's central bank expects growth of 4% or more in 2021.

The government would extend an emergency cash handout programme until December, although the value would be reduced from the $100 currently available to Brazil's poorest to $50. President Bolsenaro would present to Congress an administrative reform package in an effort to cut state costs. The government dole outs have kept extreme poverty at bay in Brazil.

Producer price inflation in July jumped to 3.2%, driven by increasing food costs and the price of oil and biofuels products.

In the first seven months of the year, the total value of Brazil's trade with the rest of the world was $240.7 billion, compared with $266.4 billion in the same period last year. The accumulated January–August trade surplus of $36.6 billion was up from a $32.2 billion surplus in the same period last year due to more than expected fall in imports.

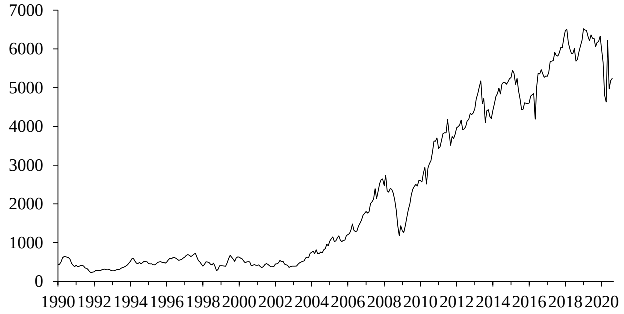
Brazil's Economy Minister Paulo Guedes is worried about a growing fiscal deficit. A growing deficit may lead to a depreciation of the real. The real is hovering between 4.80 to 5.50 per dollar range. It touched the all-time low at 5.97 per dollar in May. Brazil's real is expected to appreciate further, supported by higher U.S. dollar inflows. It may appreciate to 5 per U.S. dollar by the end of the year. That would mean an annual loss of almost 20%, its weakest year since 2015. The finance minister's commitment to fiscal rectitude has isolated him from the president, the cabinet and Congress, which appear to be edging towards more spending to stimulate the economy post-coronavirus.

	18	19	20	21	22
GDP (%p.a.)	1.1	0.8	-5.5	2.0	2.5
Inflation (%p.a.)	3.8	4.3	1.0	1.0	2.0
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

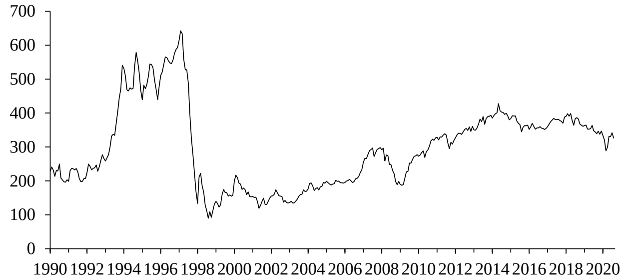
Other Emerging Markets

Hong Kong: FT-Actuaries

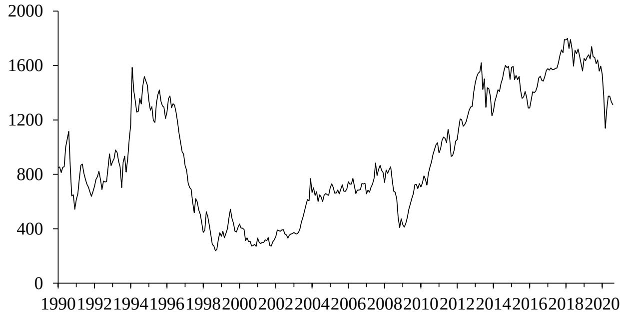
Indonesia: Jakarta Composite



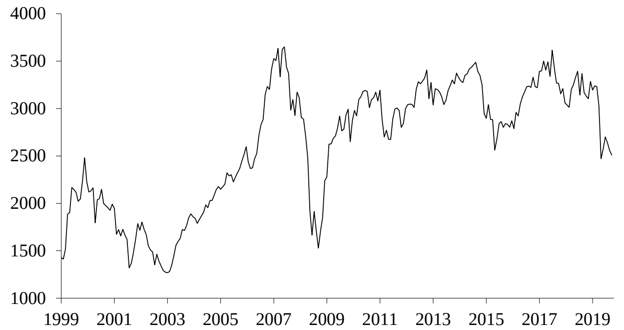
Malaysia: FT-Actuaries (US$ Index)



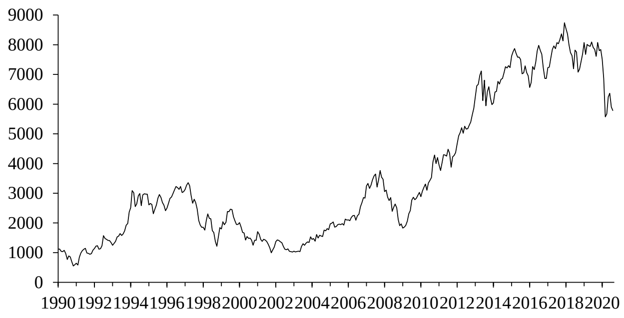
Thailand: Composite Index



Singapore: Straits Times Index

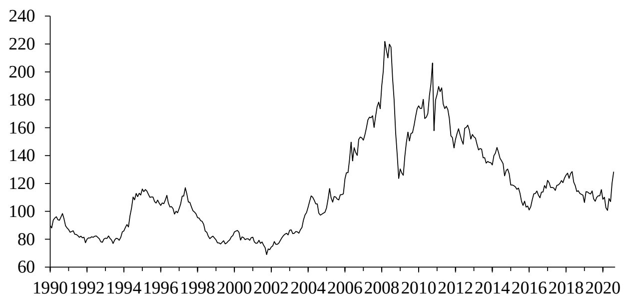


Philippines: Manila Composite

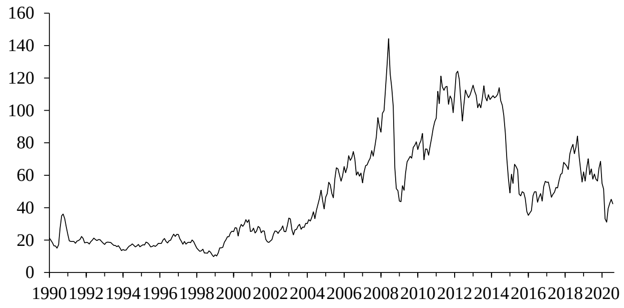


COMMODITY MARKETS

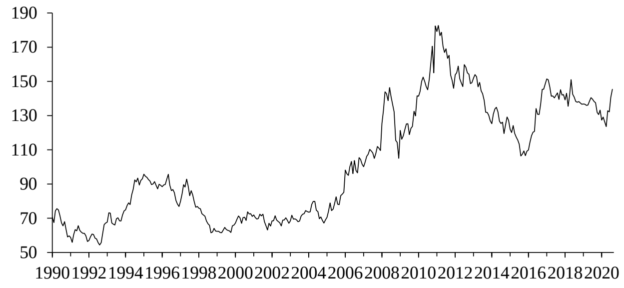
Commodity Price Index (Dollar)
(Economist, 2015 = 100)



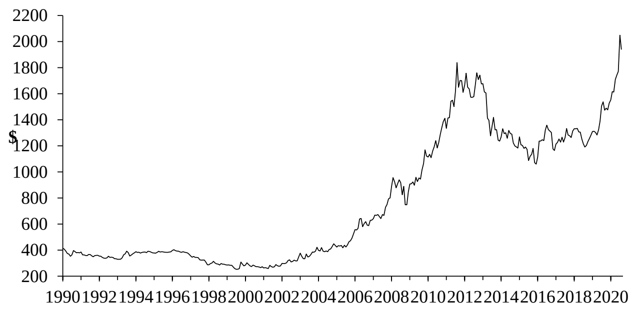
Oil Price: North Sea Brent (in Dollars)



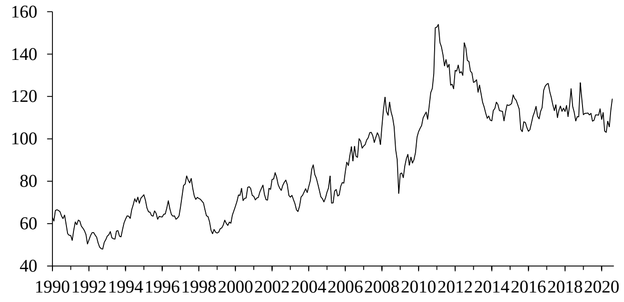
Commodity Price Index (Sterling)
(Economist, 2015 = 100)



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	2.4	1.0	0.7	78.6	76.9	-1.4	3.3	-1.0
2019	1.8	0.6	0.8	78.1	75.9	-0.9	2.5	-1.1
2020	1.7	0.4	0.4	78.9	77.0	-1.8	2.2	-1.2
2021	2.0	2.6	1.9	77.9	76.3	-1.0	2.8	1.0
2022	2.0	5.0	4.5	77.7	76.6	2.2	2.8	3.0
2023	2.0	5.0	5.0	77.6	76.8	2.9	2.7	3.0
2019:1	1.8	0.9	0.9	78.8	77.4	-0.5	2.4	-0.9
2019:2	2.0	0.7	0.8	78.4	76.0	-0.5	3.0	-1.1
2019:3	1.8	0.4	0.8	75.8	72.7	-1.4	3.0	-1.4
2019:4	1.4	0.5	0.8	79.5	77.7	-1.3	1.7	-1.2
2020:1	1.7	0.4	0.7	79.2	77.5	-1.4	2.2	-1.4
2020:2	1.5	0.3	0.4	79.0	76.9	-1.8	1.8	-1.6
2020:3	1.7	0.3	0.3	78.7	76.8	-1.8	2.2	-1.7
2020:4	1.8	0.5	0.3	78.6	76.8	-2.4	2.4	-1.5
2021:1	2.0	1.8	1.5	77.6	76.0	-1.1	2.7	-0.2
2021:2	2.0	2.0	1.7	78.2	76.5	-1.1	2.8	0.0
2021:3	2.0	2.5	2.0	78.0	76.5	-1.2	2.8	0.5
2021:4	2.1	4.0	2.5	77.7	76.3	-0.5	3.0	2.0

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	4.2	1.1	142.8
2019	275.0	3.5	4.1	1.1	145.3
2020	283.3	3.0	7.2	2.3	147.2
2021	292.3	3.2	5.6	1.7	148.9
2022	301.4	3.1	3.5	1.0	150.5
2023	311.3	3.3	2.8	0.7	152.4
2019:1	273.4	3.4	3.9	1.0	144.9
2019:2	273.5	4.0	4.0	1.1	144.4
2019:3	275.5	3.7	4.2	1.2	146.0
2019:4	277.6	2.7	4.3	1.2	145.9
2020:1	280.8	2.7	4.4	1.2	146.4
2020:2	282.0	3.1	9.4	3.1	146.7
2020:3	283.8	3.0	7.8	2.5	147.8
2020:4	286.7	3.3	7.3	2.4	148.0
2021:1	289.4	3.1	6.6	2.1	147.9
2021:2	290.8	3.1	5.8	1.8	148.3
2021:3	292.9	3.2	5.3	1.6	149.6
2021:4	296.1	3.3	4.7	1.4	149.8

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	792330.9	445721.1	307723.0	201029.6	-41308.9	120833.9
2019	167.8	803514.4	450773.6	292071.6	205398.3	-40522.1	104207.0
2020	156.8	750778.9	422139.3	240438.5	206633.2	-38602.0	79830.1
2021	166.0	794785.5	447070.2	256907.5	207875.4	-32873.3	84194.3
2022	170.7	817684.4	453552.8	270703.1	209119.3	-29141.1	86549.7
2023	176.0	842924.6	460358.0	287932.7	210372.2	-26815.4	88922.9
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	-6.6		-6.3	-15.3	0.6		-4.1
2021/20	6.2		6.1	8.3	0.6		6.1
2022/21	2.9		1.4	5.4	0.6		2.7
2023/22	3.1		1.5	6.4	0.6		3.0
2019:1	167.5	200481.1	112289.5	83278.3	52683.0	-18452.8	29316.9
2019:2	167.1	200009.6	112720.4	81082.1	50775.9	-13738.5	30830.3
2019:3	168.3	201443.7	113162.0	72473.6	51076.1	-12057.3	23210.7
2019:4	168.4	201579.9	112601.6	55237.5	50863.3	3726.5	20849.0
2020:1	164.9	197481.6	111026.5	70478.2	52999.1	-16221.6	20800.6
2020:2	145.3	173993.2	99094.4	48913.3	51084.8	-6531.1	18568.2
2020:3	151.8	181697.2	101536.5	58727.3	51380.8	-10262.3	19685.1
2020:4	165.1	197607.0	110482.0	62319.7	51168.6	-5587.1	20776.2
2021:1	165.8	198469.1	112273.3	69471.6	53317.1	-15598.6	20994.3
2021:2	165.9	198582.2	111099.5	62447.0	51391.3	-5280.0	21075.6
2021:3	166.0	198749.7	111236.0	64731.7	51690.8	-7856.1	21052.7
2021:4	166.2	198984.5	112461.4	60257.2	51476.2	-4138.6	21071.7

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	2092.5	39.3	22.4	-82.9
2019	2.0	2127.5	43.2	24.0	-83.8
2020	12.4	2030.1	239.1	25.0	-64.3
2021	4.7	2203.2	101.9	27.4	-54.1
2022	2.2	2316.3	51.0	31.0	-45.5
2023	0.4	2436.6	7.6	33.8	-40.3
2019:1	-2.8	520.1	-14.7	6.1	-34.5
2019:2	4.5	532.3	23.8	6.0	-27.3
2019:3	1.8	531.3	9.4	6.0	-15.6
2019:4	4.0	536.5	21.3	6.0	-6.3
2020:1	-2.1	527.5	-11.2	6.0	-29.6
2020:2	28.6	467.1	133.6	6.1	-12.2
2020:3	14.3	487.2	69.9	6.2	-11.1
2020:4	8.0	534.4	42.6	6.3	-11.4
2021:1	-1.3	541.4	-7.0	6.3	-29.2
2021:2	8.0	541.9	43.2	6.5	-10.3
2021:3	3.6	544.7	19.6	6.7	-6.0
2021:4	8.3	549.2	45.4	7.0	-8.5

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	6.0	2.5
U.K.	1.8	1.4	1.4	–6.4	6.0	2.9
Japan	2.2	0.3	1.0	–6.0	2.3	1.0
Germany	2.5	1.5	0.5	–6.5	5.8	2.0
France	2.4	1.7	1.3	–8.1	2.1	2.0
Italy	1.7	0.8	0.2	–9.9	6.4	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	1.7	2.0	2.0
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	–1.4	–0.9	–1.8	–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	0.4	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	–1.1	–1.2	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	0.6	0.4	2.6	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	75.9	77.0	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