LIVERPOOL INVESTMENT LETTER

May 2023

Julian Hodge Institute of Applied Macroeconomics

LIVERPOOL RESEARCH GROUP IN MACROECONOMICS

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

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

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The contradiction at the heart of government policy is that it aims to prioritise growth in order to support the economy's ability to raise living standards and support public services, but by raising tax rates to levels that damage entrepreneurial incentives to innovate it is killing long term growth and even precipitating insolvency. Raising these taxes will improve the finances a lot in the short term however, and it should use this improvement to cut marginal income tax rates and remedy this problem.	
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THIS CONFUSION AT THE HEART OF GOVERNMENT POLICY IS HARMING THE ECONOMY

The Chancellor, Jeremy Hunt, joined the Prime Minister, Rishi Sunak, in addressing the business community about the government's eagerness to strengthen business prospects. Mr. Hunt is reported as saying he wants to lower business tax rates but can only do so when higher growth produces sufficient tax revenue for him to be able to 'afford it'.

This statement perfectly illustrates the muddle at the heart of this government's fiscal, i.e. tax, policies. For the whole point of keeping marginal tax rates low is to stimulate the growth the economy needs to pay its way. By going ahead and raising corporation tax to 25% against universal business opposition and numerous economists' warnings, the government has damaged the very growth it needs to keep its public accounts in long term order. Meanwhile a bad tax situation is being further worsened by driving up marginal income tax rates by not indexing the tax thresholds. Ironically, our projections of the public finances on these baseline assumptions imply that the public debt ratio is likely to rise unsustainably over the next decade, triggering the very fiscal crisis the government so fervently wants to avoid.

Yes, Mr. Hunt seeks to mask the tax rise by pointing to the 100% investment expensing; and it is true this reduces the damage. But only partially because raising productivity via innovation does not get expensed; and it is the rise in productivity that is key to growth. Productivity growth raises output growth and also raises the investment needed to support it. So the tax system should be penalising entrepreneurs' incentives to innovate as little as possible.

Messrs Hunt and Sunak want to be seen as the fiscally cautious pair rectifying the 'market chaos' of the Truss government. Yet for all that government's failures of presentation and implementation, it was quite right on its central thesis that policies should be centrally aimed at growth and any short term deficits resulting should be financed by borrowing. As we struggle with the current government's policy contradictions, that point is becoming crystal clear.

Nor is there any economic case for these excessive tax rates. We are told periodically they are necessary to bring down inflation; they are not. Inflation is clearly forecast to fall on the back of the reversal of commodity prices now working its way through to the consumer's prices, together with the huge tightening we have seen in monetary conditions here and all over the world.

Then we are told they are necessary to maintain our credit default status in world money markets. They are not, as can be seen from the rates charged to insure HM government's credit risk, which are nugatory, similar to Germany's and less than Australia's, two solidly sober public borrowers. The irony is that the high tax rates damaging growth really do potentially threaten our long term reputation — as is shown by our latest debt projections below. What they show is that with the tax rises that have gone ahead — Table 2 — the public debt/GDP ratio, after falling initially, rises dangerously into the mid-2030s, back over 100%, whereas in a variant where they had not happened — Table 1 — it would fall steadily to around 50%. So solvency is better served by keeping tax rates down, and is in fact threatened by current high tax policies.

Table 1: Summary of Forecast

	2019	2020	2021	2022	2023	2024	2025
GDP Growth[1]	1.4	-11.0	7.5	4.2	-0.4	2.0	2.0
Inflation CPI	1.7	1.0	2.5	9.1	6.4	3.2	2.0
Wage Growth	3.5	1.6	5.8	6.0	6.4	3.4	3.0
Survey Unemployment	3.8	4.5	4.5	3.6	3.5	2.8	2.8
Exchange Rate[2]	78.3	78.2	81.5	79.4	78.1	77.4	76.8
3 Month Interest Rate	0.8	0.2	0.1	1.8	4.4	4.0	3.0
5 Year Interest Rate	0.6	0.1	0.4	2.3	4.3	4.0	3.0
Current Balance (£bn)	-63.3	-67.5	-34.3	-93.9	-24.2	-14.7	1.5
PSBR (£bn)	64.3	312.7	122.3	150.5	125.9	59.4	2.8

[1]Expenditure estimate at factor cost
[2]Sterling effective exchange rate, Bank of England Index (2005 = 100)

No one is saying that lowering tax rates alone will solve our growth problems. Much else needs to be done right, and that does include education and training, infrastructure spending, better public services and better regulation. But efforts on these things are in train; and yes, we can do better on them. But to have high taxes pulling in the opposite direction is a serious negative for growth. We should get rid of this negative.

We will be told again that 'the fiscal rules' do not permit it, that there is 'no fiscal space'. Yet such talk misses the central point about government solvency: that it is based on long term prospects not on arbitrary short run targets for debt or deficits. On that basis we should worry most about the long term growth that ultimately underpins our solvency. Over three centuries Britain has never defaulted on its debts, in spite of the debt/GDP ratio going above 200% on two occasions. As the markets clearly show, it is not going to default now. Nor will it in the future, unless growth collapses.

So this government needs to find a way to save face and do the necessary u-turn on its current devastating policy of high marginal tax rates. Business and the electorate will all be quite happy to spare its blushes, as it finally reasserts common sense.

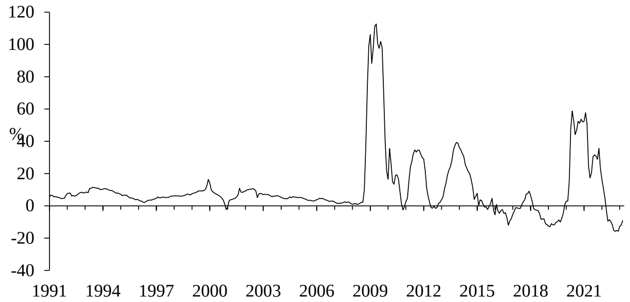
Table 1: Public Finances Variant Forecast if No Tax Rises

	Nom PSBR[1] (£bn)	Nom GDP (£bn)	REDL Spend[2] (£bn)	Pension Spend[3] (£bn)	Welfare Spend[4] (£bn)	Other Non-debt[5] (£bn)	Total Non-debt[6] (£bn)	PSBR /GDP %[1]	Spend /GDP %	Nom Debt (£bn)	Debt Interest[7] (£bn)	Debt /GDP %	Gross Taxes[8] (£bn)	Tax Rate %
2019/20	64.3	2316.4	320.8	41.0	227.0	254.5	843.3	2.8	36.4	1835.2	49.6	79.2	828.6	35.8
2020/21	312.7	2068.0	434.5	41.9	245.4	342.9	1064.7	15.6	51.5	2147.9	41.0	103.9	793.0	38.3
2021/22	122.3	2412.6	413.8	42.8	244.3	266.6	967.5	5.2	40.1	2270.2	72.5	94.1	917.7	38.0
2022/23	152.0	2695.1	415.5	46.3	259.9	335.6	1057.3	5.6	39.2	2422.2	114.7	89.9	1020.0	37.8
2023/24	125.9	2831.6	424.7	49.1	291.3	351.9	1117.1	4.4	39.5	2548.1	114.2	90.0	1105.4	39.0
2024/25	123.8	2982.6	447.4	50.6	306.9	376.9	1181.9	4.1	39.6	2671.8	113.6	89.6	1171.7	39.3
2025/26	109.9	3133.2	470.0	51.7	322.4	396.0	1240.0	3.5	39.6	2781.7	111.9	88.8	1242.0	39.6
2026/27	82.5	3258.5	488.8	52.7	335.3	411.8	1288.5	2.5	39.5	2864.3	110.5	87.9	1316.5	40.4
2027/28	52.7	3388.9	508.3	53.7	348.7	428.3	1339.0	1.6	39.5	2917.0	109.2	86.1	1395.5	41.2
2028/29	20.5	3524.4	528.7	54.8	362.6	445.4	1391.5	0.6	39.5	2937.5	108.2	83.3	1479.2	42.0
2029/30	-14.7	3665.4	549.8	55.9	377.1	463.2	1446.1	-0.4	39.5	2922.8	107.2	79.7	1568.0	42.8
2030/31	-53	3812.0	571.8	57.0	392.2	481.8	1502.8	-1.4	39.4	2869.7	106.2	75.3	1662.0	43.6
2031/32	-94.8	3964.5	594.7	58.2	407.9	501.0	1561.8	-2.4	39.4	2774.9	105.2	70.0	1761.8	44.4
2032/33	-140.3	4123.1	618.5	59.3	424.2	521.1	1623.1	-3.4	39.4	2634.6	104.1	63.9	1867.5	45.3
2033/34	-189.9	4288.0	643.2	60.5	441.2	541.9	1686.8	-4.4	39.3	2444.8	102.8	57.0	1979.5	46.2
2034/35	-243.8	4459.5	668.9	61.7	458.8	563.6	1753.1	-5.5	39.3	2200.9	101.4	49.4	2098.3	47.1

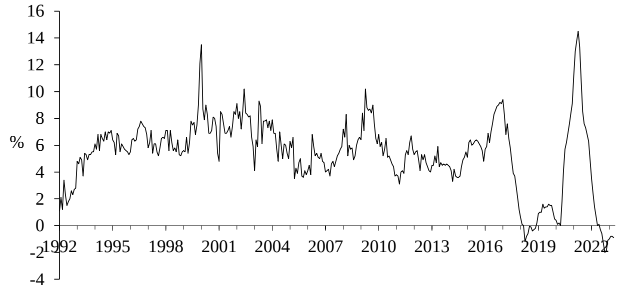
Table 2: Public Finances Baseline Forecast with Actual Tax Rises

	Nom PSBR[1] (£bn)	Nom GDP (£bn)	REDL Spend[2] (£bn)	Pension Spend[3] (£bn)	Welfare Spend[4] (£bn)	Other Non-debt[5] (£bn)	Total Non-debt[6] (£bn)	PSBR /GDP %[1]	Spend /GDP %	Nom Debt (£bn)	Debt Interest[7] (£bn)	Debt /GDP %	Gross Taxes[8] (£bn)	Tax Rate %
2019/20	64.3	2316.4	320.8	41.0	227.0	254.5	843.3	2.8	36.4	1835.2	49.6	79.2	828.6	35.8
2020/21	312.7	2068.0	434.5	41.9	245.4	342.9	1064.7	15.6	51.5	2147.9	41.0	103.9	793.0	38.3
2021/22	122.3	2412.6	413.8	42.8	244.3	266.6	967.5	5.2	40.1	2270.2	72.5	94.1	917.7	38.0
2022/23	152.0	2695.1	415.5	46.3	259.9	335.6	1057.3	5.6	39.2	2422.2	114.7	89.9	1020.0	37.8
2023/24	45.9	2831.6	424.7	49.1	291.3	351.9	1117.1	1.6	39.5	2468.1	114.2	87.2	1185.4	41.9
2024/25	38.8	2982.6	447.4	50.6	306.9	376.9	1181.9	1.3	39.6	2506.9	113.4	84.1	1256.5	42.1
2025/26	19.6	3133.2	470.0	51.7	322.4	396.0	1240.0	0.6	39.6	2526.5	111.5	80.6	1331.9	42.5
2026/27	39.8	3195.9	488.8	52.7	335.3	411.8	1288.5	1.2	40.3	2566.2	109.7	80.3	1358.5	42.5
2027/28	61.4	3259.8	508.3	53.7	348.7	428.3	1339.0	1.9	41.1	2627.7	108.1	80.6	1385.7	42.5
2028/29	84.7	3325.0	528.7	54.8	362.6	445.4	1391.5	2.5	41.9	2712.4	106.6	81.6	1413.4	42.5
2029/30	109.8	3391.5	549.8	55.9	377.1	463.2	1446.1	3.2	42.6	2822.2	105.3	83.2	1441.7	42.5
2030/31	136.6	3459.3	571.8	57.0	392.2	481.8	1502.8	3.9	43.4	2958.8	104.3	85.5	1470.5	42.5
2031/32	165.4	3528.5	594.7	58.2	407.9	501.0	1561.8	4.7	44.3	3124.3	103.5	88.5	1499.9	42.5
2032/33	196.2	3599.1	618.5	59.3	424.2	521.1	1623.1	5.5	45.1	3320.5	103.0	92.3	1529.9	42.5
2033/34	229.2	3671.0	643.2	60.5	441.2	541.9	1686.8	6.2	45.9	3549.7	102.9	96.7	1560.5	42.5
2034/35	264.4	3744.5	668.9	61.7	458.8	563.6	1753.1	7.1	46.8	3814.2	103.1	101.9	1591.7	42.5

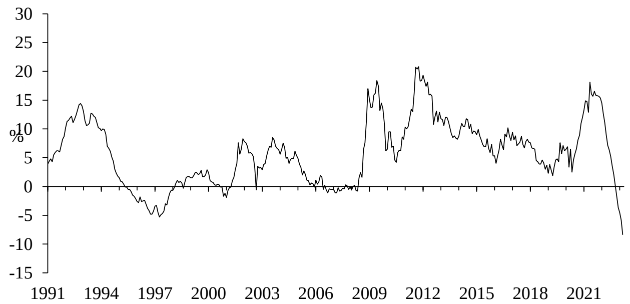
U.S.: Growth in M0 (Yr - on - Yr)



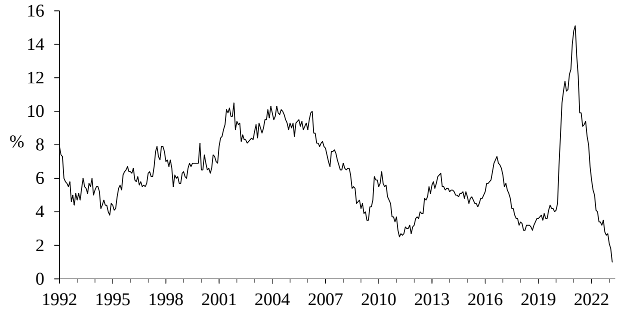
UK: Notes and Coins in Circulation Growth



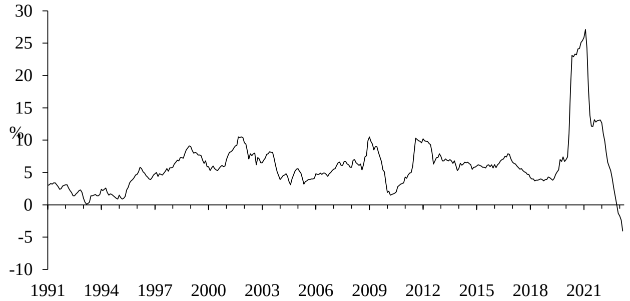
U.S.: Growth in M1 (Yr - on - Yr)



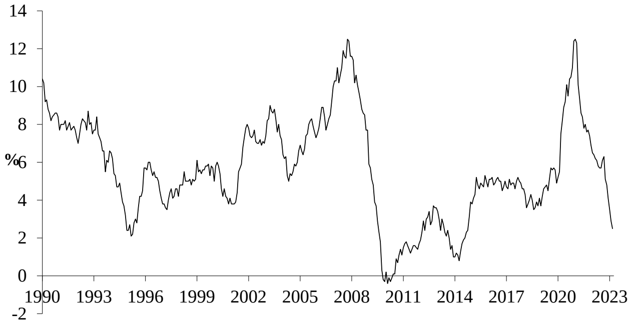
UK: M4 Growth



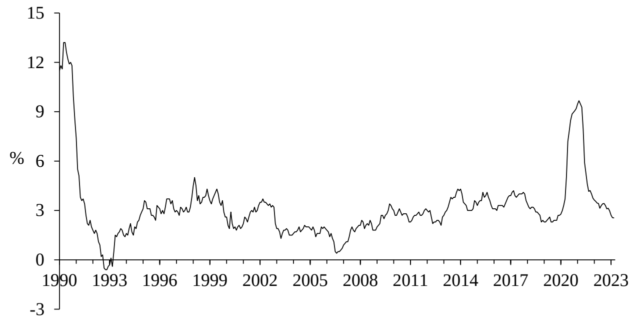
U.S.: Growth in M2 (Yr - on - Yr)



Eurozone M3 Growth



Japan: Growth of M2+CD's



FOCUS ON JAPAN

Francesco Perugini

Japan's Wages Decline

Japan's consumer spending unexpectedly fell in March at the fastest rate in a year, while real wages marked a twelfth month of decline on persistent inflation, highlighting the challenges facing the economy in mounting a strong post-COVID revival.

Latest data show a drop in household spending by 1.9% in March from a year earlier, while economists' median forecast was for a 0.4% rise, following a 1.6% gain in February. It marked the biggest decline since March 2022's 2.3%, when Japan was still trying to curb the spread of coronavirus. On a seasonally adjusted, month-on-month basis, spending decreased 0.8%, a second month of decline after being down 2.4% in February. For the full fiscal year 2022 that ended in March, household spending rose 0.7%, slowing from a 1.6% expansion in fiscal 2021.

Official data also showed Japanese real wages falling 2.9% in March year-on-year marking the full year of declines that started in April 2022 on decades-high consumer inflation. Despite the boon from eased COVID-19 restrictions on domestic shoppers and international travellers, accelerating prices have put a lid on Japan's consumption-led recovery from the pandemic. Nominal cash earnings gained 0.8% from the previous year, below analysts' expectations and far from the 3% flagged by policymakers as necessary for supporting inflation. "Rising prices, while somewhat moderated by the government's energy subsidy programs, have put downward pressure on consumption by shaving households' real purchasing power," said Masato Koike, economist at Sompo Institute Plus.

Another month's wage figure adds to new Bank of Japan (BOJ) Governor Kazuo Ueda's argument for maintaining easy policy for now. Falling real wages also point to declining spending power for voters as speculation continues that Prime Minister Fumio Kishida is mulling the possibility of an early election. Clarifying the importance of pay for the central bank, the BOJ added a reference to wages in its policy guidance at the April meeting, Ueda's first at the helm. The governor said at a news briefing after the meeting that not only prices, but employment, corporate earnings and wages must also increase to achieve the central bank's 2% inflation target in a stable way. "Due to price hikes, this year's Shunto negotiations [the annual wage negotiations between enterprise unions and the employers in Japan] have produced wage increases considerably higher than expected, but if the increase ends here, it won't result in sustainable price stability," Ueda said at a recent press conference.

The BOJ seems to be relatively optimistic about wage increases this fiscal year. In its most recent quarterly report, the bank said that the result of the wage talks to date suggest sizable gains in both small and large businesses as well as for part-time workers, citing figures from Japanese labour union Rengo. The pay rises come after Prime Minister Fumio Kishida called on the business community to increase wages to mitigate the financial burden on households hit by soaring prices of everything from food to gasoline. Indeed, Prime Minister Kishida is himself continuing to keep an eye on wage momentum. The prime minister attended Rengo's May Day convention and said that in particular he wants to improve incomes for the younger generation.

A recent government survey shows that a total of 62.1% of companies have raised, or plan to raise, base pay in fiscal 2023, up sharply from 38.7% in the previous year as they seek to secure talent and match rising prices. The trend was notable particularly in the non-manufacturing sector, with 56.0% saying they have or will raise wages, expanding from 28.8% the year before, the survey said. In the manufacturing sector, the figure was at 69.8%, up from 52.0%. Moreover, when asked the reasons for raising wages, including base pay and bonuses, 80.4% said they seek "to enhance the motivation of the employees, improve their labour conditions and prevent them from leaving jobs". Some 64% said they did so "to respond to rises in commodity prices".

Still, Japan's wages are the lowest among the Group of Seven industrialized nations, according to data compiled by the OECD. The average wage in Japan rose some 6% in 2021 from 1990 to $39,711, creating a sharp contrast with the US, which saw increases of roughly 50% during the same 1990-2021 period, the data showed.

However, experts say Japan's wages have also suffered because it lags in another metric: its productivity rate. The country's output, measured by how much workers add to a country's GDP per hour, is lower than the OECD average, and "probably the biggest reason" for flat wages, said Shintaro Yamaguchi, an economics professor at the University of Tokyo. "Generally, wages and productivity growth go hand-in-hand together," said Müge Adalet McGowan, senior economist for the Japan desk at the OECD. "When there's productivity growth, firms perform better and [when] they do better, they can offer higher wages". She said Japan's aging population was an additional issue because an older labour force tends to equate to lower productivity and wages. The way people are working is also changing. In 2021, nearly 40% of Japan's total workforce was employed part-time or worked irregular hours, up from roughly 20% in 1990, according to McGowan. "As the share of these non-regular workers has gone up, of course the average wages also stay low, because they make less," she said.

MARKET DEVELOPMENTS

Bank rate has now been raised to 4.5%. It will probably go no higher as inflation is set to fall sharply now and further rises would create a recession. Longer term it will probably settle a bit lower, around 4%. However, this is largely discounted in long term rates. Equities continue to offer best value.

Table 1: Market Developments

	Market Levels		Prediction for May/Jun 2024	
	Apr 7	**May 12**	**Previous Letter**	**Current View**
Share Indices				
UK (FT 100)	7742	7755	8020	7917
US (S&P 500)	4105	4123	4236	4419
Germany (DAX 30)	15598	15914	18749	20242
Japan (Tokyo New)	1965	2096	2533	2870
Bond Yields (government				
UK	3.43	3.78	4.00	4.00
US	3.41	3.46	3.50	3.40
Germany	2.18	2.23	2.20	2.20
Japan	0.46	0.39	0.50	0.50
UK Index Linked	0.27	0.66	1.00	1.00
Exchange Rates				
UK ($ per £)	1.24	1.25	1.20	1.20
UK (trade weighted)	79.45	80.01	77.9	77.3
US (trade weighted)	107.47	106.94	113.2	113.2
Euro per $	0.92	0.92	0.98	0.98
Euro per £	1.14	1.15	1.18	1.18
Japan (Yen per $)	131.79	135.31	140.0	140.0
Short Term Interest Rates				
UK	4.44	4.68	4.00	4.00
US	5.20	5.32	4.30	4.30
Euro	3.08	3.32	3.00	3.00
Japan	–0.03	–0.03	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	2.10	1.1	3.0	–2.00		4.20
US	2.00	1.2	3.0	3.00	3.78	12.98
Germany	2.10	1.2	3.0	23.00	–2.43	26.87
Japan	1.90	1.1	1.8	34.00	0.44	39.24
UK indexed[2]	0.66		3.0	16.00		19.66
Hong Kong[3]	2.60	3.0	3.0	–39.00	3.78	–26.62
Malaysia	3.30	5.4	3.0	51.00	3.78	66.48
Singapore	3.50	3.0	3.0	15.00	3.78	28.22
India	1.40	6.5	3.0	10.00	3.78	24.68
Korea	1.10	0.0	3.0	–48.00	3.78	–40.12
Indonesia	2.20	4.5	3.0	19.00	3.78	32.48
Taiwan	2.80	3.0	3.0	20.00	3.78	32.58
Thailand	3.20	2.5	3.0	16.00	3.78	28.48

Bonds: Contribution to £ yield of:

	Redemption Yield	Changing Nominal Rates	Currency	Total
UK	3.78	–2.18		1.60
US	3.46	0.63	3.78	7.87
Germany	2.23	0.26	–2.43	0.05
Japan	0.39	–1.14	0.44	–0.32

Deposits: Contribution to £ yield of:

	Deposit Yield	Currency	Total
UK	4.68		4.68
US	5.32	3.78	9.10
Euro	3.32	–2.43	0.89
Japan	–0.03	0.44	0.41

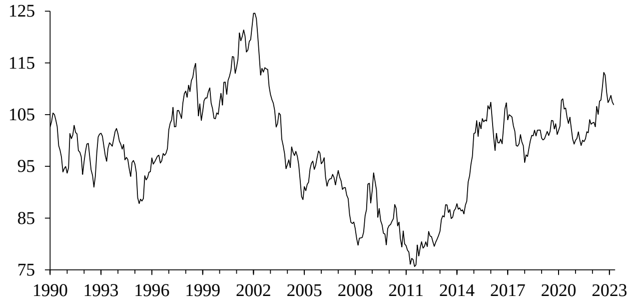
[1] Yields in terms of €s or $s can be computed by adjusting the £-based yields for the expected currency change.
[2] UK index linked bonds All Stocks
[3] Output based on China.

Table 3: Portfolio(%)

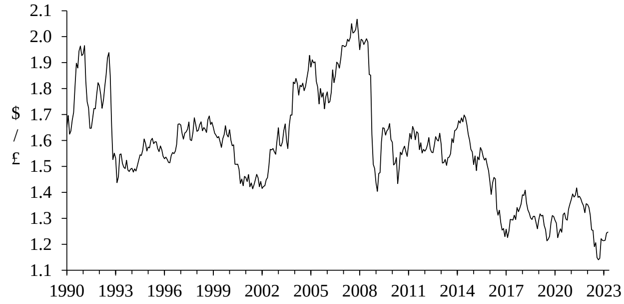
	Sterling Based Investor		Dollar Based Investor		Euro Based Investor	
	April Letter	Current View	April Letter	Current View	April Letter	Current View
UK Deposits (Cash)	5	5	5	5	1	1
US Deposits	-	-	-	-	-	-
Euro Deposits	-	-	-	-	-	-
Japanese Deposits	-	-	-	-	-	-
UK Bonds	-	-	-	-	-	-
US Bonds	-	-	-	-	-	-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

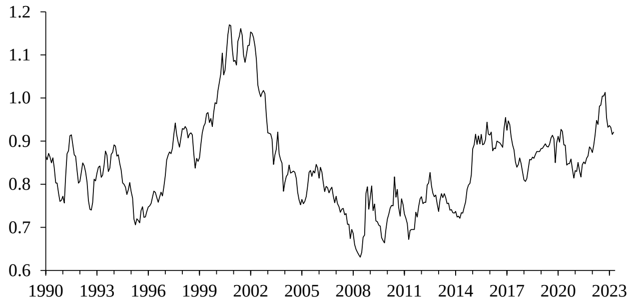
US : Trade Weighted Index
(Bank of England 1990 = 100)



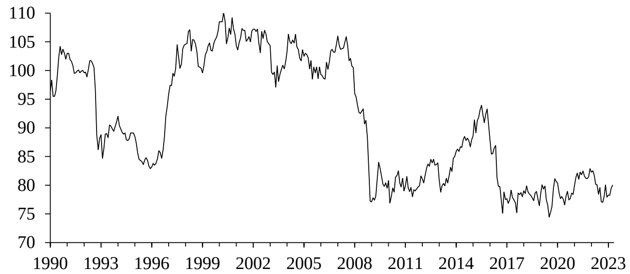
UK: Dollars Per Pound Sterling



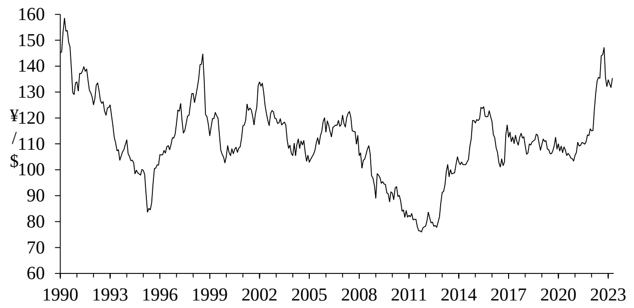
Euro per US dollar



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



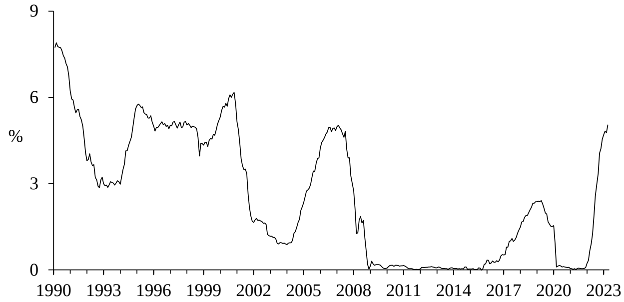
Japan : Yen Per U.S. Dollar



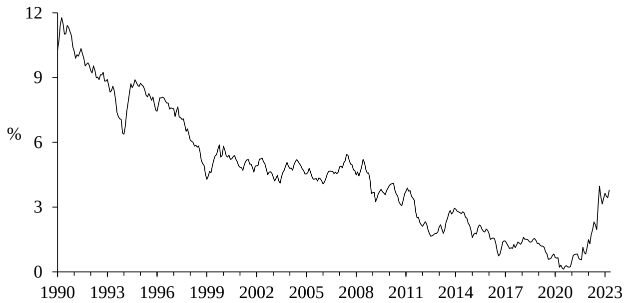
GOVERNMENT BOND MARKETS

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

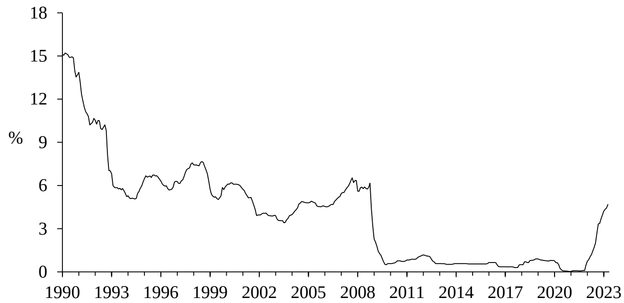
U.S. : 3-Month Treasury Bill



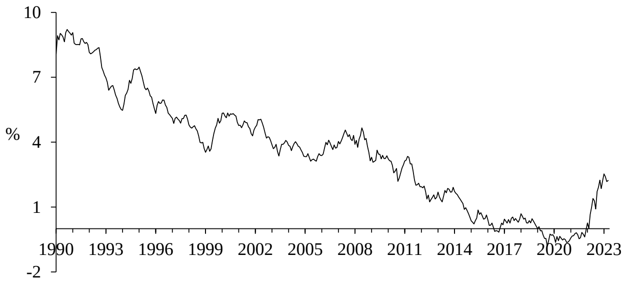
U.K.: Yield on Long-Term Government Bonds



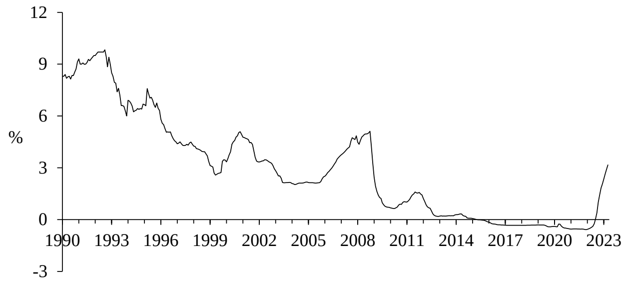
U.K. : 3-Month Certificate LIBOR Rate



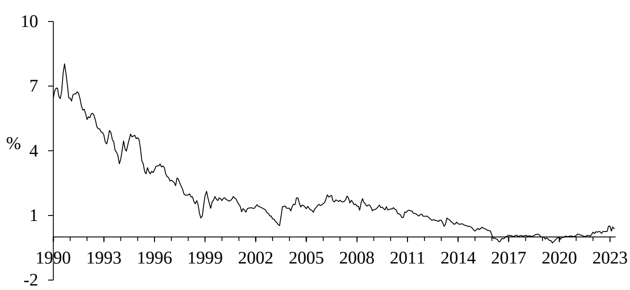
Germany: Yield on Public Authority Bonds



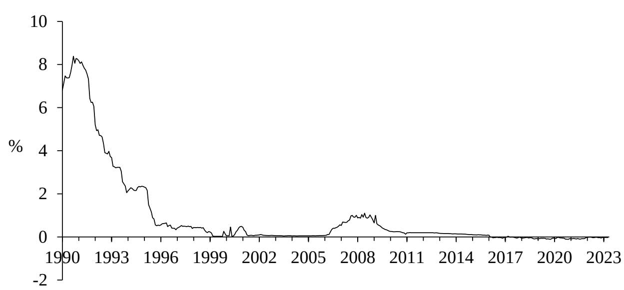
Germany : 3-Month Interbank Deposit Rate



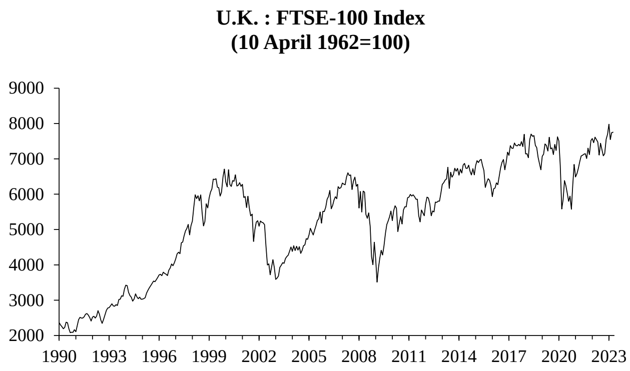
Japan: Yield on Long-Term Government Bonds

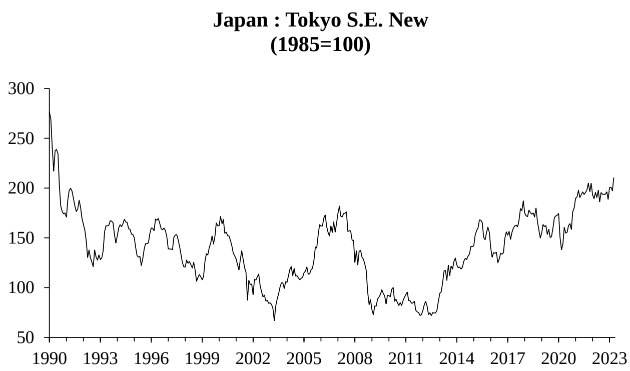


Japan : 3-Month Money Market Rate



MAJOR EQUITY MARKETS





EMERGING MARKETS

Anupam Rastogi

India

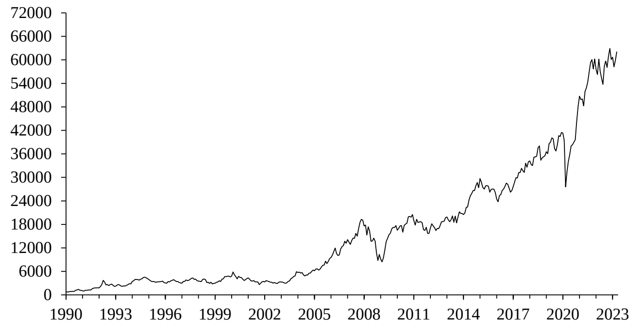
Indians are very optimistic about their future. Even the news that India may be the most populous country in the world is seen with the prism of optimism. The naysayers on rising unemployment are met with new jobs and other statistics suggesting the creation of employment in the economy. Most critics agree that the centralized digital national identity card — called Aadhaar, which is publicly owned, internet penetration and spending on infrastructure provide a solid foundation for economic growth and acceleration in the coming decades.

We maintain our GDP growth forecast of 6.5% for fiscal years 2023–24 and 2024–25. Most multilateral agencies have kept their growth forecast marginally lower than 6.5% for 2023. The International Monetary Fund (IMF) has predicted that India will be the world's fastest-growing economy, despite facing significant challenges such as financial turbulence, inflationary pressures, the impact of the Russia-Ukraine conflict, and the ongoing effects of the Covid-19 pandemic. IMF Managing Director Kristalina Georgieva said that the IMF eagerly anticipates India's continued success, as evidenced by its growth projections, demonstrating its unyielding strength and resilience.

The S&P Global India Manufacturing Purchasing Managers' Index (PMI) rose to 57.2 in April from 56.4 in March. Manufacturing activity grew the fastest in the last four months in April, driven by healthy factory orders, milder price pressures, better global sales, and improved supply chains. The seasonally adjusted S&P Global India Services PMI Business Activity Index surged from 57.8 in March to 62 in April, its fastest expansion in output since mid-2010. Anecdotal evidence linked the upturn in services to a pick-up in new business growth and favourable market conditions. The most substantial increase in output was seen in finance and insurance.

A sales boom at the turn of the fiscal year boosted goods and services tax (GST) collections by central and state governments in April to a record ₹1.87 trillion, a 12% jump over receipts in the same month a year earlier. April revenue receipts relate to transactions during March, the closing month of FY23, where all organizations would have been keen to close the fiscal year on a high note. Many large states reported more than 20% growth over the same period last year, indicating broad-based revenue growth across states. The indirect tax boost has provided the central government with funds to spend on infrastructure. India's central government now spends almost 20% of its budget on capital investments. Between 2011 and 2020, that figure never passed 15%.

India: BSE Sensex



Retail inflation eased to a 15-month low of 5.66% in March, slipping below the upper threshold of the Reserve Bank of India's medium-term 4%+/- 2% target, primarily due to base effect and lower food prices, including cereals and milk.

India's central bank kept its policy rate unchanged in April as uncertainty over the global economic outlook grows. We expect the rates to be on hold in 2023 as inflation will remain decisively below the 6% mark, and rate cuts will come in the first quarter of 2024.

There was a considerable compression in the average trade deficit in Jan–Feb 2023 relative to the previous three months. We expect the FY2023 current account deficit at $80 billion (-2.3% of GDP), which is manageable compared to the 3.5% of GDP feared in mid-2022.

India's services exports have helped to reduce the current account deficit. While software exports dominate India's services exports, "other business services" exports have grown strongly. This category includes legal services; accounting, auditing, book-keeping, and tax consultancy services; management consulting, managerial and public relations services; and advertising, market research, and public opinion polling services.

The Indian rupee is showing strong signs of recovery following significant stability in the market combined with a dip in oil prices. We expect the rupee to remain around 82 to the U.S. dollar for the rest of 2023. The rupee has been relatively stable in 2023, despite the continued uncertainty surrounding capital outflows. The increase in the U.S. Fed rates, followed by consecutive hikes in the repo rate by the Indian central bank, has made some impact but seems to have stabilized by now.

	22–23	**23-24**	**24-25**	**25-26**	**26-27**
GDP (%p.a.)	7.0	6.5	6.5	6.0	6.2
WPI (%p.a.)	6.5	5.3	5.0	4.2	4.0
Current A/c(US$ bill.)	-100.0	-80.0	-80.0	-60.0	-40.0
Rs./$(nom.)	81.0	82.0	83.5	85.0	85.0

China

Serious doubts are emerging about economic growth after the abrupt lifting of Covid 19 restrictions in February 2023. The economy recorded rapid growth in the first quarter of 2023, showing signs of exhaustion. The main reason for pessimism among people is damaging news from their leaders that the world is conspiring to ensure that China remains a developing country. The banning of exports of strategic technology and diversification of the supply chain by most of its trading partners are being felt on factory floors. The economic growth is best seen as two recoveries: A struggling manufacturing one, with limited upside beyond the nation's shores, and a domestic scene dominated by consumer spending.

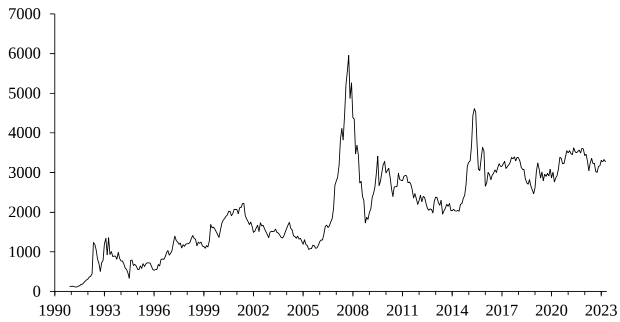
GDP growth was seen speeding up to 4% in the first quarter from a year earlier, from 2.9% in the previous three months. For 2023, our growth forecast is held at 5% — the same as what the government announced as the year's target. China saw its manufacturing activity cool off to 49.2 from the previous month's 51.9 reading, suggesting that the sector shrank over the past month. China's Communist Party has pledged to nurture the country's economic recovery after better-than-expected growth in the first quarter of the year, signalling optimism over the outlook for the economy while acknowledging problems such as local-government debt and youth joblessness. The Communist Party's top policy committee has acknowledged the "three pressures" on China's economy: shrinking demand, supply shocks, and downbeat growth expectations.

Consumer prices rose by just 0.7% in March compared with a year earlier. Factory gate prices fell for the sixth month in a row. Prices are stagnating or declining in China despite the People's Bank of China (PBOC) cutting interest rates and pumping cash into the financial system to bolster the economy. Uncertainty over the economy means Chinese households continue to stash money into savings rather than spending, and companies remain wary of making new investments. That's raising the spectre of a tailspin of falling prices and wages from which the economy may struggle to recover. The Chinese economy is running a disinflation process, which points to a bigger room for monetary policy easing to boost demand.

China's benchmark lending rates were kept unchanged. The one-year loan prime rate was steady at 3.65%, while the five-year LPR was unchanged at 4.3% by the PBOC. The bank reduced the reserve requirement ratio for most banks by 0.25 percentage points last month, freeing up an estimated 500 billion yuan in the financial system.

China logged a better-than-expected trade surplus in March, aided mainly by an unexpected export rebound on an improvement in overseas demand, while imports also contracted less than expected. Exports grew 14.8% from the prior year in March, recovering sharply after a 6.8% fall in the preceding month. Chinese imports also fell a less-than-expected 1.4% in March from the previous year's decline of 10.2%.

China: SSE Composite Index



Foreign direct investment into China dropped by almost half last year from a year earlier, hitting the lowest level in five years as Covid-19 lockdowns mauled its economy. Other gauges suggest the world's second-largest economy is struggling to attract corporate newcomers. Especially at risk are the investments that bring new arrivals to China with innovative ideas and cutting-edge technology, an important channel through which economies learn to be more productive and propel gains in living standards. Chinese police visited the Shanghai offices of Bain & Company. In the latest case of heightened scrutiny of foreign businesses in China, they questioned U.S. management consulting group employees as tensions between Beijing and Washington rise.

China's efforts to internationalise the Yuan face challenges due to a lack of trust and confidence in the currency. While Beijing's loan offers to develop countries for infrastructure projects helped boost the Yuan's visibility, it remains far behind the Euro and Dollar regarding global transactions. In addition, China's non-democratic behaviour and unreliable supply chains during the pandemic have hindered the currency's internationalisation efforts. Nevertheless, China continues to increase swap arrangements with its Belt and Road Initiative partners to promote the use of the Yuan.

China scored another major diplomatic coup after Brazilian leader Luiz Inacio Lula da Silva visited, pledging to build stronger ties in defiance of the U.S. He toured the US-sanctioned tech company Huawei, backed the creation of an alternative currency to replace the dollar in foreign trade and admonished the Biden administration for not doing enough to end the war in Ukraine. His visit was after the visit of French President Emmanuel Macron alongside European Commission President Ursula von der Leyen.

There is no change in its policy towards Taiwan. The People's Liberation Army held several military drills around Taiwan, marking some of the most notable exercises since former U.S. House Speaker Nancy Pelosi visited Taipei last year. This time, the provocation appeared to come from Taiwan President Tsai Ing-wen's recent meeting on U.S. soil with the current House speaker Kevin McCarthy. After the talks in California, he said, "Our bond is stronger now than at any time or point in my lifetime."

	22	23	24	25	26
GDP (%p.a.)	3.0	5.0	4.8	4.0	3.5
Inflation (%p.a.)	2.0	2.2	1.5	2.0	2.2
Trade Balance(US$ bill.)	420.0	255.0	150.0	100.0	50.0
Rmb/$(nom.)	6.8	7.0	7.2	7.3	7.4

South Korea

The immediate impact of slowing exports to China has impacted economic growth in the short term, but optimism over the medium time remains intact. It is believed that China plus one policy of large corporations worldwide will help South Korea in the medium term as the substitution of Chinese goods with those Korean goods is expected within a few quarters. We maintain our forecast of 1% growth in GDP for 2023.

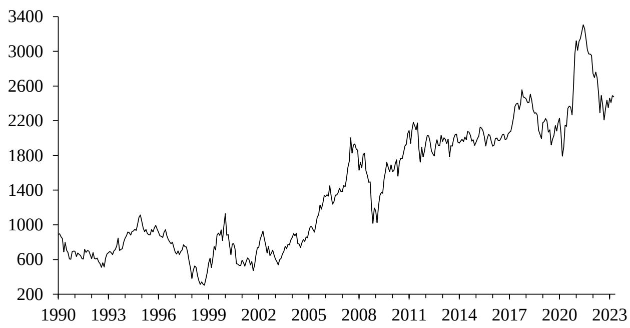
South Korea's trade-reliant economy averted a recession posting marginal growth in the first quarter, but the outlook remained clouded by weak exports due to a cooling global economy. The first quarter's gross domestic product (GDP) expanded by 0.3% over the previous three-month period. Private consumption grew by 0.5%, while capital investment dropped by 4%.

South Korea's inflation slowed for a third straight month in April, proving that price pressures are easing and creating room for a central bank pivot toward interest rate cuts. Consumer prices advanced 3.7% in April from the prior-year period as prices of petrochemical goods slid. But inflation continues to stay above the central bank's 2% target. The Central Bank is open to a higher terminal rate, but we expect the central bank to keep rates unchanged through at least the end of the second quarter. At the same time, Governor Rhee Chang-yong ruled out the possibility of an interest rate cut before inflation showed more unmistakable signs of easing. The Bank of Korea has hiked interest rates by 300 basis points since late 2021.

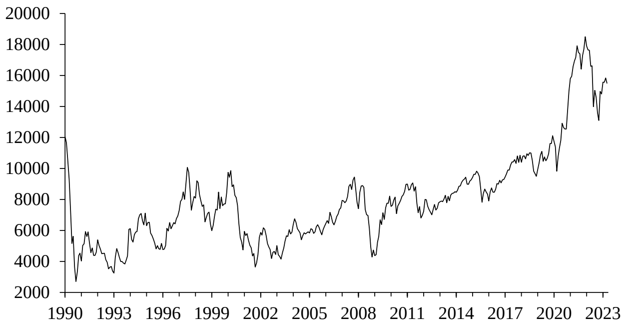
South Korea's total exports have declined for seven consecutive months while domestic firms suffer from a steep fall in exports of semiconductors. The country has also experienced a trade deficit for 14 months since March 2022. South Korea's exports have now dropped for seven straight months. It happened as the country's shipments to China continued dropping. The main reason for this is Samsung, the country's biggest company. Domestic imports in April were about $52.2 billion, down 13.3%. South Korea's trade balance shows the difference between the nation's imports and exports was $2.62 billion.

The won continued depreciating on the announcement of a set of weak economic numbers. The country's stock market is the best performer in Asia and one of the top indices in the world so far this year. The Kospi Composite Index has risen more than 11% since Jan. 1, fuelled by a rally in the shares of big technology companies such as Samsung

Korea: Composite Index



Taiwan: Weighted TAIEX Price Index



Electronics Co., etc. Another reason is based on the hope that Korea will emerge as a winner from shifts in global supply chains, particularly since the country has a strong relationship with the U.S. There is growing confidence that South Korea could finally be classified as a developed market by MSCI Inc. this year. An MSCI upgrade could trigger more than $44 billion in foreign inflows as investors who track developed markets indices add South Korean stocks to their holdings. The MSCI Korea index has outperformed the global benchmark this year.

The U.S. has agreed to give Seoul a greater voice in consultations on a potential American nuclear response to a North Korean attack in return for swearing off developing its nuclear weapons. President Biden and South Korean President Yoon Suk Yeol said following a summit at the White House in April. South Korea had a nuclear weapons development program decades ago but abandoned it under American pressure. In 1975, the country joined the Nuclear Nonproliferation Treaty, under which nations without nuclear weapons agreed never to develop or acquire them.

	22	23	24	25	26
GDP (%p.a.)	2.6	1.0	2.5	2.5	2.4
Inflation (%p.a.)	5.1	5.0	3.0	2.5	2.5
Current A/c(US$ bill.)	50.0	40.0	35.0	30.0	30.0
Won/$(nom.)	1450	1300	1300	1350	1400

Taiwan

The rebound of Chinese growth after opening the Chinese economy has collapsed exports and imports of Taiwan. Taiwan has suffered from negative GDP growth for two consecutive quarters, which means the economy entered a recession in the first quarter of 2023. The gross domestic product (GDP) shrank 3.02% from a year earlier in January–March, following a contraction of 0.41% in the previous quarter. It was worse than a fall of 1.25% predicted in a Reuters poll. GDP growth could turn positive in 2Q but mainly on a low-base effect, which could mask the economy's weakness. We expect GDP to shrink by 0.5% in 2023. Taiwan will take some time to adjust to changing supply chains worldwide. We do not think the government's investment policy to encourage Taiwanese manufacturers to invest in Taiwan will be effective in 2023 as the demand for semiconductor chips is too weak.

The consumer price index fell to 2.35% year-on-year in March from 2.43% in February, while the producer price index fell to 0.52% YoY in March from 3.97% in February. The steep fall in PPI was affected mainly by lower energy prices. The central bank may stay put in the second quarter and keep the policy rate at 1.875% to 1.75% until the U.S. Fed starts cutting the Fed rate. The central bank's primary concern is still to minimize capital outflows.

First-quarter exports dropped 19.2% from a year earlier in U.S. dollar terms due to high global inflation, the war in Ukraine, and generally weaker demand worldwide. It worked out to an 11% on-year drop in real exports of goods and services during the quarter, which officials attributed to "weak global demand and inventory adjustments" by overseas businesses. Exports to Mainland China fell deeper, by -35.0% YoY in March from -30.2% YoY a month ago. The migration of some Taiwanese factories is likely one of the causes of this significant fall. Imports experienced similar issues, as Taiwan's imports are mainly used for export-related manufacturing activities. Imports contracted 20.1% YoY in March after a contraction of 9.4% YoY in February. The significant contraction came from Saudi Arabia and South Korean imports, which shrank more than 30% YoY.

After years of trying to outmanoeuvre China in a game of global diplomatic recognition, Taiwan is finally shifting strategies. Last month, China convinced Honduras to break formal ties with Taiwan and recognize Beijing, a significant setback for the independently governed island. The diplomatic blow left Taiwan with over a dozen countries worldwide that recognize its sovereignty and convinced top Taiwanese policymakers that it can no longer financially match Beijing in its bid for global influence.

Asia-Pacific Economic Cooperation, a 21-member regional forum, holds its annual summit in November in San Francisco. President Biden has a unique opportunity to send a message to the international community by inviting the president of Taiwan, Tsai Ing-wen, to attend. China and Taiwan joined APEC in 1991, two years after its founding, but as a concession to Beijing, Taiwan joined as "Chinese Taipei," not an independent nation. Taiwan sends business leaders and a "special envoy" to the summit, but the president has been excluded. Inviting Ms. Tsai to the APEC summit would show the Biden administration's commitment to Taiwan.

	22	23	24	25	26
GDP (%p.a.)	2.5	-0.5	1.5	2.0	2.3
Inflation (%p.a.)	2.9	2.2	1.6	1.4	1.2
Current A/c(US$ bill.)	90.0	65.0	60.0	60.0	60.0
NT$/$(nom.)	32.0	30.5	30.0	30.5	30.5

Brazil

The relentless monetary tightening to break the back of inflationary expectations is showing encouraging signs. As the U.S. Fed signals the end of the monetary squeeze, the Central Bank of Brazil will have room to ease the monetary tightening without impacting the currency, inflation, and the flight of capital. The only variable it must deal with is the fiscal licentiousness of the Lula administration.

The Brazilian Central Bank's economic activity index contracted 0.04% in January. It was a result of the poor results of the services sector. Brazil retail sales fell in February as consumers reduced clothing, furniture, and household appliance purchases. Brazil's unemployment rate rose in the first quarter as agricultural and construction workers lost their jobs. However, we maintain our forecast of 1% and 2% GDP growth in 2023 and 2024, respectively.

The impact of tight monetary policy is being felt now. Inflation slowed more than expected and reached its lowest since late 2020 in the year to mid-April. The country's IPCA-15 inflation index eased to a 30-month low of 4.16% from 5.36% in the previous month. Brazil has an inflation target of 3.25% for this year compared to our forecast of 4% for the year.

Brazil's central bank has held the country's benchmark interest rate steady at 13.75% for five consecutive meetings. Growing debts and the government's inclination of profligacy have made investors wary. President Luiz Inacio Lula da Silva has been calling for lowering lending costs from their current six-year high of 13.75%. Still, the president of the Central Bank of Brazil Neto rejected his criticism by saying policymakers needed to ensure inflation expectations were within the official targets.

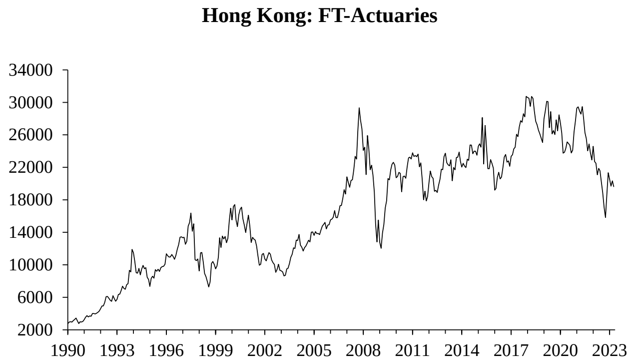
Brazil recorded a current-account surplus of $286 million in March from a deficit of $2.8 billion in February. The 12-

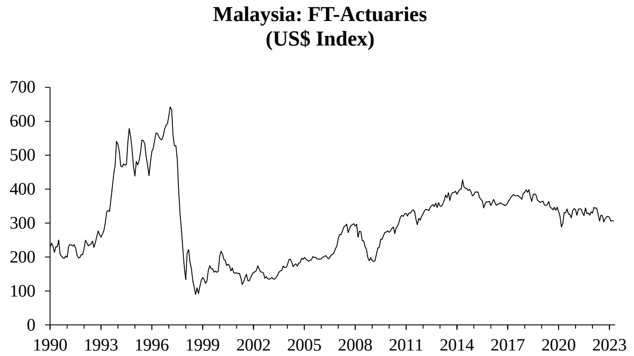
month current-account deficit reached $52.3 billion in March, 2.7% of GDP. Net foreign direct investment (FDI) reached $7.7 billion in March, up from $6.5 billion in February. Net FDI was $89.7 billion for the 12 months through March.

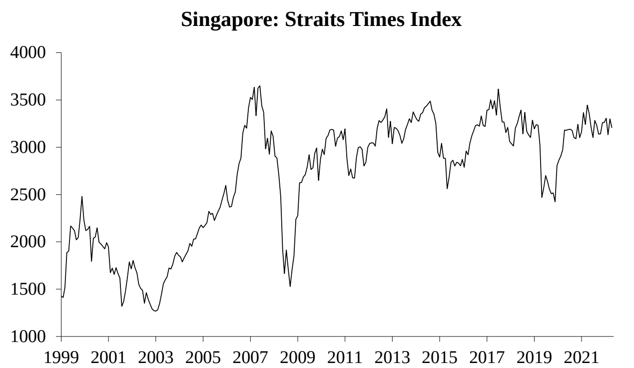
The Brazilian real is strengthening among emerging-market peers despite the outlook for lower interest rates. Investors are growing optimistic that a new fiscal framework proposal will succeed in shoring up public finances. Appetite for fixed-rate bonds has been increasing, a sign that investors expect interest rates to fall soon. The Brazilian real appreciated by 2.6% in mid-April. It depreciated 2% in the last two weeks. It was around the same level in April 2022. There is a high probability of it appreciating soon.

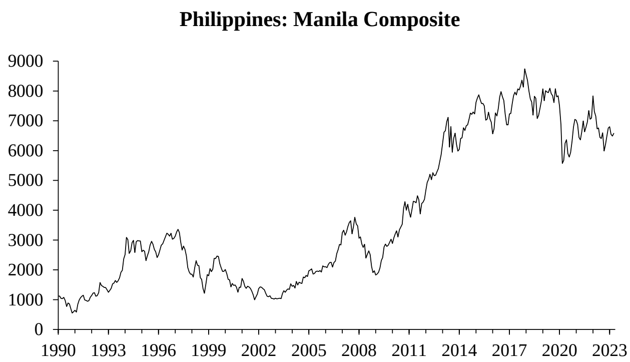
	22	**23**	**24**	**25**	**26**
GDP (%p.a.)	2.9	1.0	2.0	2.5	3.0
Inflation (%p.a.)	8.0	4.0	4.0	4.2	4.2
Current A/c(US$ bill.)	-10.0	-12.0	-20.0	-10.0	-10.0
Real/$(nom.)	5.2	5.0	5.2	5.2	5.2

Other Emerging Markets



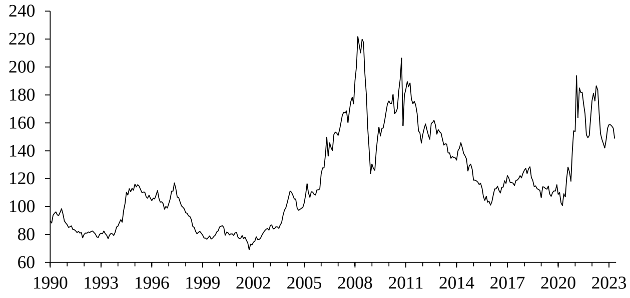




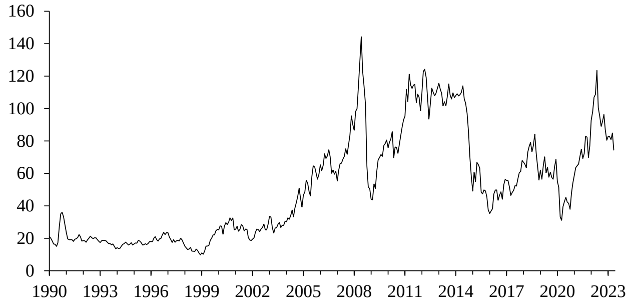


COMMODITY MARKETS

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

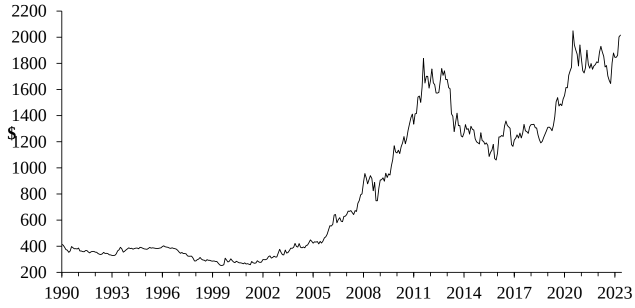


Oil Price: North Sea Brent (in Dollars)

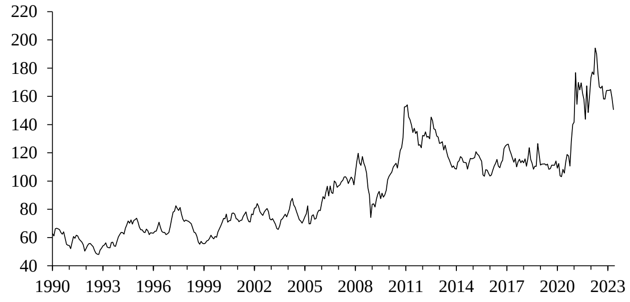


Commodity Price Index (Sterling)
(Economist, 2015 = 100)

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]
2020	1.0	0.1	0.2	78.2	72.9	-1.3	1.5	-1.4
2021	2.5	0.4	0.1	81.4	78.0	-6.4	4.1	-5.7
2022	9.1	2.3	1.8	79.7	81.8	-6.7	11.4	-6.2
2023	6.4	4.3	4.4	78.1	82.7	0.6	9.3	0.5
2024	3.2	4.0	4.0	77.4	84.2	1.6	4.6	1.6
2025	2.0	3.0	3.0	76.8	84.9	1.0	2.8	1.0
2022:1	6.2	1.4	0.8	82.3	81.9	-9.3	8.4	-8.7
2022:2	9.2	2.1	1.4	80.2	81.8	-8.0	11.5	-7.3
2022:3	10.1	2.8	2.0	78.2	81.7	-6.1	12.4	-5.3
2022:4	10.8	3.0	3.0	78.1	81.6	-3.4	13.9	-3.4
2023:1	10.3	4.0	4.2	78.0	81.1	-0.7	13.5	-0.7
2023:2	6.3	4.1	4.5	77.5	82.6	0.6	9.0	0.1
2023:3	5.0	4.5	4.5	77.9	83.7	1.1	8.4	1.1
2023:4	4.1	4.5	4.5	77.5	83.6	1.3	6.3	1.3
2024:1	3.5	4.0	4.0	77.9	83.5	1.2	5.5	1.2
2024:2	3.2	4.0	4.0	77.3	84.3	1.5	5.0	1.5
2024:3	3.0	4.0	4.0	77.3	84.5	1.8	4.0	1.8
2024:4	3.0	4.0	4.0	77.1	84.3	2.0	4.0	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)
2020	279.1	1.6	4.5	1.3	149.7
2021	295.0	5.9	4.5	1.3	154.8
2022	314.5	6.0	3.6	1.0	150.2
2023	327.5	5.4	3.5	0.9	150.7
2024	338.9	3.4	2.8	0.7	151.0
2025	338.9	3.0	2.8	0.7	152.6
2022:1	308.5	5.9	3.7	1.0	154.8
2022:2	307.5	6.2	3.8	1.1	149.0
2022:3	315.5	5.8	3.7	0.9	149.0
2022:4	317.2	6.3	3.7	0.9	147.8
2023:1	323.9	5.9	3.8	1.0	153.8
2023:2	321.0	5.6	3.6	1.0	149.2
2023:3	329.3	5.0	3.4	0.9	150.4
2023:4	329.9	5.1	3.2	0.9	149.4
2024:1	335.9	3.9	2.9	0.8	154.4
2024:2	331.3	3.7	2.8	0.7	150.0
2024:3	339.2	2.9	2.8	0.7	150.3
2024:4	339.8	3.1	2.8	0.7	149.5

1 Whole Economy
2 Average Earnings
3 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
2020	149.0	713432.6	427576.4	244157.8	199232.3	-33095.4	124438.5
2021	160.2	767344.3	453969.6	258155.2	224537.2	-36883.0	132434.5
2022	166.8	798577.4	473683.2	257528.5	228362.6	-23838.4	137158.1
2023	166.1	795317.2	475719.5	248799.5	225311.5	-18632.0	135881.3
2024	169.5	811597.0	489778.6	243503.8	232154.4	-15890.1	137949.7
2025	172.9	827988.2	505714.4	242189.8	239194.3	-18456.2	140654.2
2020/19	-11.0		-10.1	-16.2	-4.8		5.0
2021/20	7.5		6.2	-1.0	4.8		6.4
2022/21	4.2		4.3	-5.6	3.1		3.6
2023/22	-0.4		0.4	-1.5	3.0		-0.9
2024/23	2.0		3.0	9.9	3.0		1.5
2025/24	2.0		3.3	-16.2	-4.8		2.0
2022:1	167.2	200167.8	118589.6	68746.5	56345.5	-9205.1	34308.7
2022:2	167.4	200403.4	118225.6	62024.6	57458.7	-2866.9	34438.6
2022:3	165.2	197801.6	118034.3	62937.1	56975.0	-6092.0	34052.8
2022:4	167.2	200204.7	118833.7	63820.2	57583.3	-5674.5	34358.0
2023:1	165.8	198481.4	118824.7	69129.5	55701.1	-11222.9	33951.0
2023:2	166.4	199201.0	118812.9	60935.7	56116.4	-2756.3	33907.7
2023:3	166.3	199048.6	118801.0	59953.0	56538.3	-2249.7	33994.0
2023:4	165.9	198586.2	119280.9	58781.4	56955.7	-2403.2	34028.6
2024:1	167.7	200740.0	120213.3	67069.4	57389.5	-9638.5	34293.7
2024:2	169.4	202819.3	122254.5	59537.5	57819.9	-2462.3	34330.3
2024:3	170.2	203787.8	123116.9	58859.8	58254.1	-1824.2	34618.8
2024:4	170.6	204249.9	124193.9	58037.1	58690.9	-1965.1	34706.9

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	Current Account (£ bn)
2020	15.6	2068.0	312.7	-67.5
2021	5.2	2412.6	122.3	-34.3
2022	5.6	2695.1	152.0	-93.9
2023	1.6	2831.6	45.9	-24.2
2024	1.3	2982.6	38.8	-14.7
2025	0.6	3133.2	19.6	1.5
2022:1	0.0	633.6	-0.1	-50.5
2022:2	6.4	656.3	41.9	-28.2
2022:3	4.0	660.4	26.5	-12.7
2022:4	8.1	685.2	55.5	-2.5
2023:1	4.1	693.1	28.1	-9.6
2023:2	1.9	696.3	13.2	-9.8
2023:3	1.8	700.8	12.3	-3.3
2023:4	1.5	709.8	10.3	-1.5
2024:1	1.4	724.8	10.1	-7.3
2024:2	1.4	732.3	10.0	-8.6
2024:3	1.3	739.4	9.8	0.1
2024:4	1.3	753.1	9.5	1.1

1 GDP at market prices (Financial Year)

WORLD FORECAST DETAIL

Growth Of Real GNP

	2019	2020	2021	2022	2023	2024
U.S.A.	2.2	–2.8	5.9	2.1	0.7	1.2
U.K.	1.4	–11.0	7.5	4.2	–0.4	2.0
Japan	–0.4	–4.3	2.2	1.0	1.1	1.1
Germany	1.1	–3.7	2.6	1.9	–0.3	1.4
France	1.9	–7.9	6.8	2.5	0.3	0.6
Italy	0.5	–9.1	6.6	3.3	–0.1	0.3

Growth Of Consumer Prices

	2019	2020	2021	2022	2023	2024
U.S.A.	1.8	1.3	4.7	8.0	3.9	2.5
U.K.	1.7	1.0	2.5	9.1	6.4	3.2
Japan	0.5	0.0	–0.2	2.5	2.1	1.2
Germany	1.4	0.5	3.1	7.9	6.2	2.7
France	1.1	0.4	1.7	5.4	4.0	2.0
Italy	0.6	–0.1	1.9	7.6	5.0	2.4

Real Short-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	0.2	–4.6	–7.1	–1.7	2.4	2.0
U.K.	–0.7	–1.3	–6.4	–6.7	0.6	1.6
Japan	0.1	0.3	–2.4	–2.1	–1.1	–1.4
Germany	–0.9	–3.6	–8.5	–5.9	0.4	0.5
France	–0.8	–2.2	–6.0	–3.7	1.1	0.8
Italy	–0.3	–2.4	–8.2	–4.7	0.7	0.7

Nominal Short-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	1.5	0.1	0.1	2.2	4.9	4.0
U.K.	0.8	0.2	0.1	1.8	4.4	4.0
Japan	0.1	0.1	0.1	0.0	0.1	0.1
Germany	–0.4	–0.5	–0.6	0.3	3.1	2.8
France	–0.4	–0.5	–0.6	0.3	3.1	2.8
Italy	–0.4	–0.5	–0.6	0.3	3.1	2.8

Real Long-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	–2.2	–3.3	–2.1	1.3	1.5	1.2
U.K.	–0.4	–1.4	–5.7	–6.2	0.5	1.6
Japan	–1.1	–1.3	–1.7	–1.5	–1.1	–1.3
Germany	–4.3	–5.0	–4.4	–0.9	0.1	0.0
France	–2.6	–3.3	–2.9	–0.6	0.9	0.7
Italy	–2.0	–3.3	–2.6	0.3	2.3	2.2

Nominal Long-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	1.9	0.9	1.6	3.8	3.6	3.2
U.K.	0.6	0.1	0.4	2.3	4.3	4.0
Japan	0.0	0.0	0.1	0.2	0.5	0.5
Germany	–0.2	–0.6	–0.2	2.1	2.3	2.1
France	0.1	–0.3	0.2	1.8	2.9	2.7
Italy	1.4	0.5	1.2	3.0	4.4	4.2

Index Of Real Exchange Rate (2010=100)[1]

	2019	2020	2021	2022	2023	2024
U.S.A.	117.1	118.7	116.1	128.3	128.0	128.5
U.K.	99.5	99.6	106.5	111.8	111.6	113.7
Japan	77.0	77.8	71.0	59.9	59.2	59.3
Germany	96.0	97.1	97.9	95.0	95.1	95.4
France	93.9	94.7	94.0	89.6	89.5	89.0
Italy	95.0	95.4	95.1	91.6	91.3	89.9

[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)

	2019	2020	2021	2022	2023	2024
U.S.A.[1]	122.52	124.77	119.77	127.34	126.90	127.40
U.K.	1.28	1.29	1.37	1.22	1.21	1.24
Japan	109.10	106.60	110.45	133.10	136.20	137.80
Eurozone	0.89	0.87	0.85	0.95	0.98	0.99

[1] The series for the USA is a nominal broad U.S dollar index (2010=100); the series for the UK is $ per £

* Forecasts based on the Liverpool World Model