LIVERPOOL INVESTMENT LETTER

June 2023

Cardiff Business School
Ysgol Busnes Caerdydd

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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REVISITING THE EFFECTS OF BREXIT

There is much misinformation on both the extent of changes due to Brexit and their effects.

What has changed since Brexit?

First, much is changing. With the non-EU world free trade is gradually becoming the rule. The UK has now rolled over all the free trade agreements the EU had with the rest of the world, and added its own FTAs with Japan, Australia and New Zealand. More importantly, it has joined the CPTPP, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, embracing 11 countries around the Pacific Rim. This is a tariff-free area with rules designed to gradually eliminate non-tariff barriers. The 11 countries are: Canada, Mexico, Peru, Chile, New Zealand, Australia, Brunei, Singapore, Malaysia, Vietnam and Japan. The US was originally a member and could possibly re-join. Other countries looking to join include China, Taiwan and S. Korea. With so many major trading economies involved, the UK is increasingly integrated into the world economy, supplying and importing goods at world prices.

Another key development is the progressive improvement of the Trade and Cooperation Agreement with the EU, now that there is agreement on flexible mechanisms for implementing the N Ireland Protocol.

Finally, on regulation UK regulators have now taken over all key areas of UK regulation. While some EU laws affecting regulation remain in place, they are being gradually replaced with new UK law under the REUL bill going through Parliament. However, in practice it is the UK regulators who are making the decisions on grounds of UK costs and benefits.

The effects of Brexit

There are both short and long run effects. In the short run placing a border between the UK and the EU has disrupted previous trade patterns; we are likely to find these effects in short run macro behaviour — something stressed in Remainer 'gravity trade models', in which short run substitution between different countries' products is limited in effect making these models behave like macro business cycle models. However, in the long run the TCA should make that border seamless and also free of trade barriers. As for non-EU trade the FTAs listed above should reduce traded prices to world levels over time, eliminating the elevating effect of EU barriers. This should, according to our trade model, cause a long run shift in UK trade shares away from the EU towards the rest of the world. Also, because EU protection applied to goods, especially manufacturing and agriculture, and not to services, the relative fall in goods prices vs services will increase services supply relative to goods supply and services exports relative to goods exports.

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)

The facts of Brexit changes

Short run disruption:

To identify the short run effects of Brexit we have to use the dates when Brexit occurred — i.e. the 2016 referendum result and the end exit from the EU Single Market, 2020 — as our variables of identification, on the assumption that what happened to economic events then reflected the effects of Brexit and only these. Even simply on UK data this is quite a demanding assumption as other shocks coincided with these events — notably Covid but also government policy actions on various fronts. However, it is a tenable working assumption.

Some studies have used the differential between UK behaviour and the behaviour of a 'doppelganger' weighted set of 30-odd other countries as their dataset and assumed that changes from the date of Brexit identify the effects of Brexit. However, this identifying assumption is hard to support because from this date all the shocks in the other 30-odd countries could also be contributing to the differential; though they did not have Brexit, they had all their own shocks, including from policy changes. Whereas it is possible to combine some 30 countries' data for a particular macro variable over the past into a weighted combination that closely mirrors past UK data, that is a statistical artefact produced by varying the weights to favour countries that over the past behaved like the UK. But from the Brexit date their relative behaviour will depend on their idiosyncratic shocks, which will be creating effects at the same time as Brexit in the UK. We cannot distinguish these from Brexit.

To give Brexit the best chance of being identified we need to estimate UK data behaviour alone and apply the Brexit dates to that, to find the short run effects on the macro economy. We know that a short run macro model can be solved out in the form of a Vector Autoregression, a VAR, where each variable depends on its own and other variables' past. We estimate this VAR for the UK, representing whatever true model of the economy is driving it; within the VAR we find the effects of the Brexit date variables, 'dummy variables' that take the value 1 in all

periods after Brexit but zero before. We can then trace out the VAR effects of Brexit.

This follows. We show first charts of all the data; it is obvious from cursory inspection that all series are dominated by the Covid episode, which therefore needs to be controlled for in order to have any hope of isolating the Brexit effects. Next, we show the estimates for the Brexit dummies in the VAR system. Starred values of coefficients indicate 95% significance. As we would expect the Brexit dummies have significant impact effects on all the variables included. We then trace out their joint effects as time goes by according to this VAR system. It can be seen that there are effects on all the variables but that they all steadily die out.

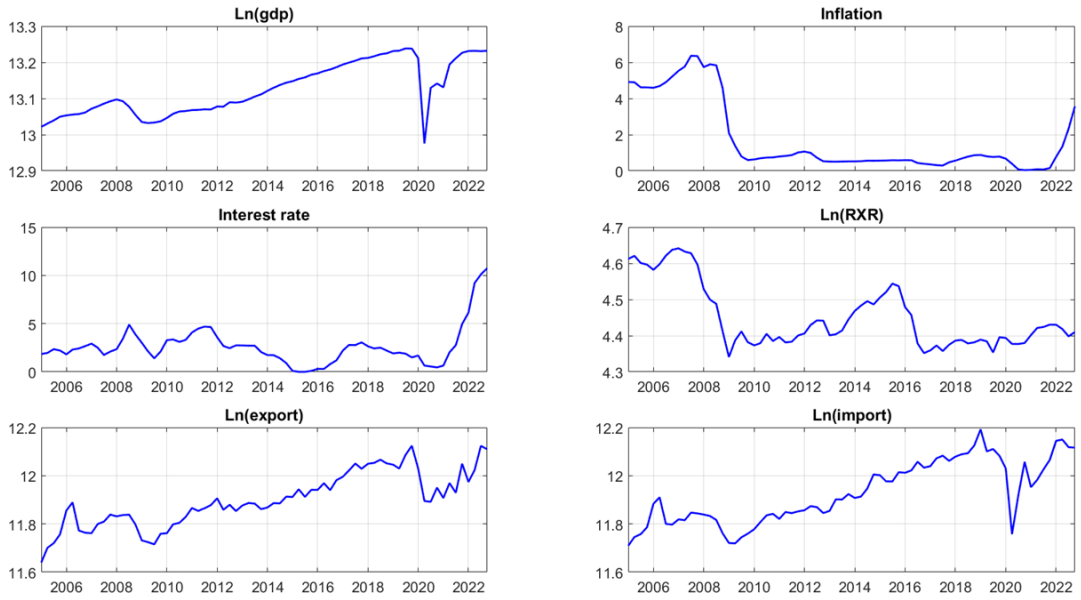


Figure 1: Charts of the UK data series

	GDP	Inflation	Interest rate	RXR*	Export	Import
Lagged GDP	-0.463*	-3.451	-1.364	-0.151	-0.370	-0.699*
	(0.128)	(4.218)	(2.442)	(0.188)	(0.251)	(0.320)
Lagged Inflation	0.000	0.888*	0.149*	-0.001	0.008*	0.006
	(0.002)	(0.066)	(0.038)	(0.003)	(0.003)	(0.005)
Lagged Interest rate	0.011*	0.013	0.739*	-0.005	0.003	-0.003
	(0.003)	(0.098)	(0.057)	(0.004)	(0.006)	(0.007)
Lagged RXR	0.202	-1.998	5.351*	0.973*	0.129	0.048*
	(0.059)	(1.943)	(1.125)	(0.087)	(0.116)	(0.147)
Lagged Export	-0.107*	-2.548	0.804	0.105	0.132	-0.148
	(0.062)	(2.306)	(1.335)	(0.103)	(0.137)	(0.175)
Lagged Import	0.149*	4.946*	1.489	0.083	0.397*	0.588*
	(0.081)	(2.701)	(1.564)	(0.121)	(0.161)	(0.205)
Brexit referendum	0.045*	0.322	0.610*	-0.004	0.041*	0.082*
	(0.001)	(0.348)	(0.202)	(0.016)	(0.021)	(0.026)
Brexit departure	-0.083*	2.102*	-0.275	0.036	-0.084*	-0.116*
	(0.017)	(0.550)	(0.204)	(0.024)	(0.033)	(0.057)
COVID	-0.209*	-0.114	-0.109	0.018	-0.102*	-0.196*
	(0.018)	(0.592)	(0.236)	(0.026)	(0.035)	(0.045)
COVID recovery	-0.089*	-2.255*	0.422	-0.001	-0.075*	-0.116*
	(0.022)	(0.702)	(0.394)	(0.033)	0.004	(0.057)

*RXR=real exchange rate, i.e. home/foreign prices, both in the same currency.
Notes on VARX: Below each coefficient in parenthesis is shown the standard error; those that are significant at 5% are asterisked and used in the model simulation. The VARX includes a time trend and the log of potential output (derived from an HP filter) as the X set of trended variables.

Table 2: VAR estimation results, 2005Q1 to 2023Q1

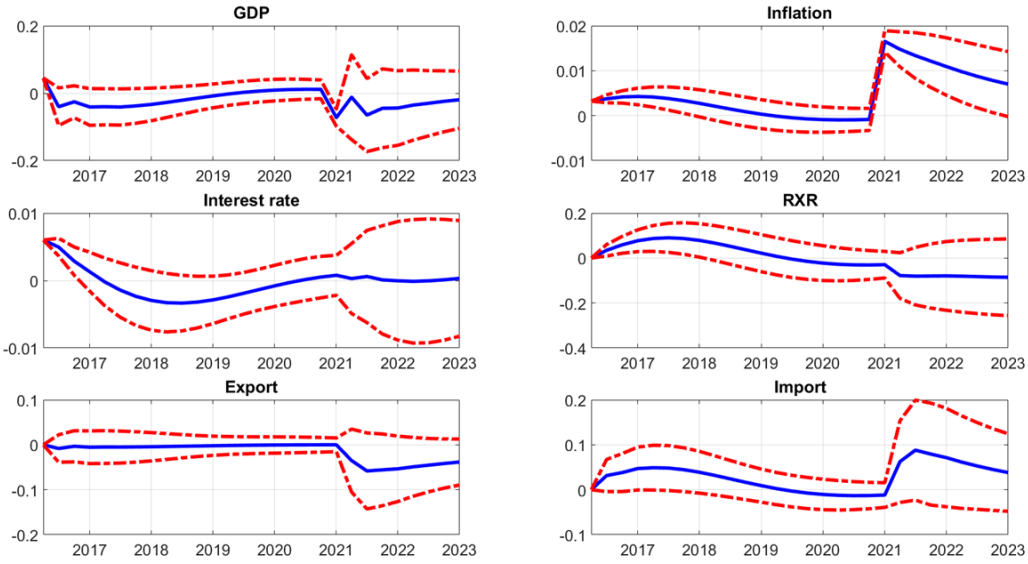


Figure 2: Effects of Brexit according to VAR equations (with standard error bounds)

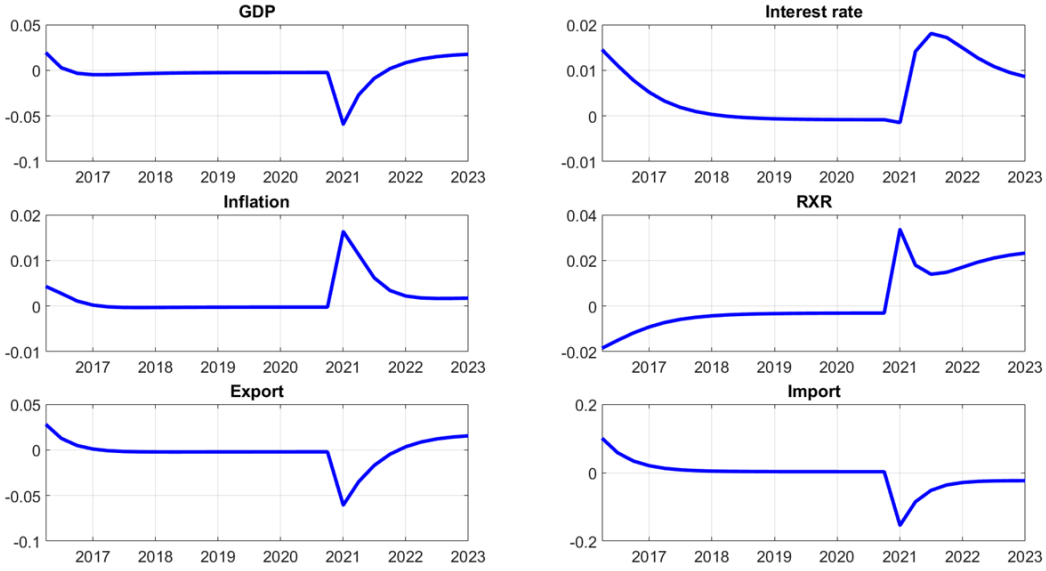


Figure 3: Effects of Brexit according to underlying model of the economy

These joint effects come from the VAR. As a check we can insert the Brexit effects into our underlying model of the UK, to compare what that implies. It is fairly similar, as one would expect, since our underlying model is consistent with the VAR — we test the model by checking its match to a VAR of key variables, and it passes this test.

So in the short run what we find is that there are temporary effects on GDP, exports and imports (slightly negative), and on inflation and interest rates (slightly positive). What we see is a set of fairly minor temporary effects, consistent with modest disruption from introducing a border with the EU — a border due to be made barrier-free and seamless by the TCA.

Long run trend effects:

We now turn to evidence on longer run developments, which we can measure through evolving changes in trade trends.

Long run effect I: The changing shares of EU and non-EU trade:

We can see these trends in Figure 4. UK trade (exports+imports) with the EU is steadily growing at a much lower rate than UK trade with the rest of the world.

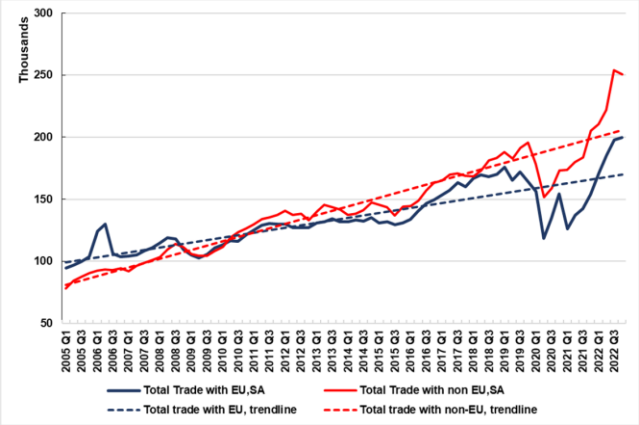


Figure 4: Trade (export+imports) with EU and rest of world, current prices, seasonally adjusted.

Long run effect II: the changing shares of goods and services:

We can see these trends in Figure 5. Exports of services are steadily growing faster than exports of goods.

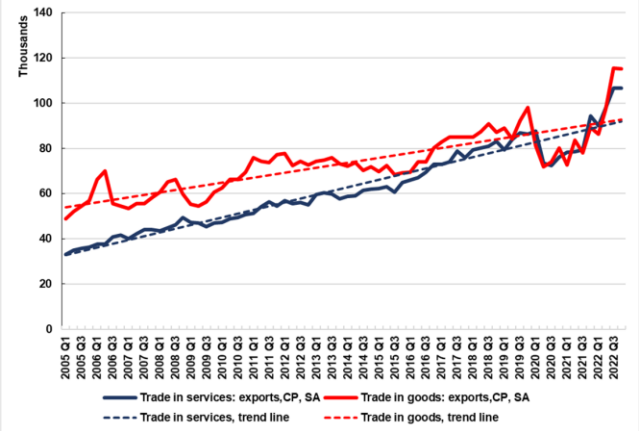


Figure 5: Export of services and exports of goods, current prices, Seasonally adjusted.

Conclusions

What we see in these computations are first the short run effects of Brexit due to the temporary disruption of previous trade arrangements. These much resemble what Remainers have complained about, using short run models of the economy, much like the 'gravity trade' models they have used; these essentially resemble the macro models we use for short run macro analysis. But not only are they temporary, they are also fairly small.

However, secondly we observe the longer term trends predicted by our 'classical' trade model, where liberalisation of trade leads to trade shifting to the freed up routes of non-EU trade, and also the rise of services relative to goods as the latter lose the high prices resulting from protection.

As for the shift towards UK-based regulation, we must hope that UK regulators will boost competition and innovation. But it is too early for any observations of that hoped-for trend.

Notes on the current inflation: backward-looking expectations or rational?

There is a popular school of thought arguing that there will be a wage-price 'spiral', in which the high inflation we have had triggers a rising rate of wage inflation, which in turn triggers more inflation, causing wage inflation to persist. Essentially, this is arguing that wages respond to expectations of future inflation based on extrapolation of the past.

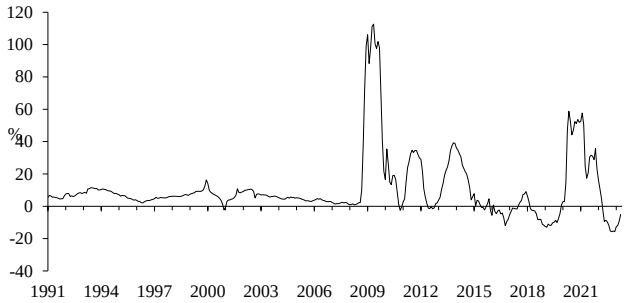
However, this is not rational behaviour. Future inflation will be like the past only if monetary policy aiming to reduce it has no effect. Yet this is unlikely, given the Bank of England is committed by law to reducing it. According to rational expectations, wage increases should be sufficient to do two things: ensure that real wages catch up with the past inflation that was unexpected, and then are maintained in the future by compensating for expected future inflation. Currently, wages have not quite caught up with past inflation, rising at 7% against 10% inflation. That would suggest they have another 3% to add on for the future to catch up. Then to offset future inflation they should add the inflation target of 2%, making 5% wage inflation in all, as we move into next year. I have excluded any allowance for productivity growth as that is close to zero currently.

This arithmetic implies that next year's inflation will reflect a monetary squeeze cutting inflation to 2% in spite of wage rises of 5% — in effect, this involves price margins which have swollen, being cut back to normal. The year after wages will have caught up, so wage inflation will fall to 2%, and with no further price squeeze, inflation will be equal to that.

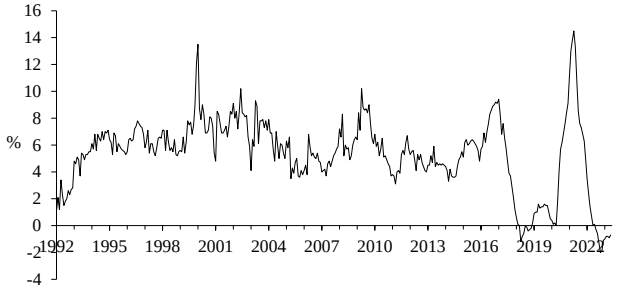
We are observing an unusual inflation led by commodity prices and rising margins. As these forces reverse with the swings in commodity net market supplies, the inflation will fall. Wage catch up will keep wage inflation above normal for a time, restoring normal price margins. This will mean inflation will fall steadily without further monetary tightening; as money is already very tight, this would risk overkill.

One current mistake in policy is to fight down public sector wage claims that are simply restoring market equilibrium. Government claims that this 'suppresses inflation' by holding down public wage costs are mistaken. It simply wrecks public sector supply, since workers will leave the sector. Inflation is set in the markets as explained above. Inevitably public wages must catch up with general wages, if we are to offer public services, which we must.

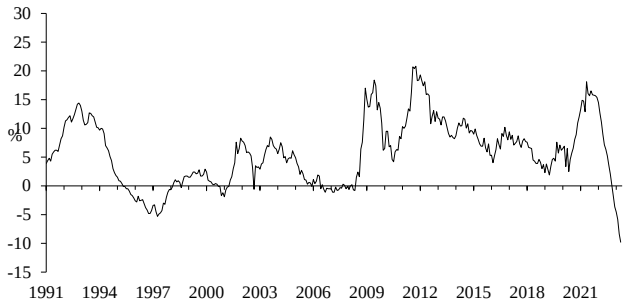
U.S.: Growth in M0 (Yr - on - Yr)



UK: Notes and Coins in Circulation Growth

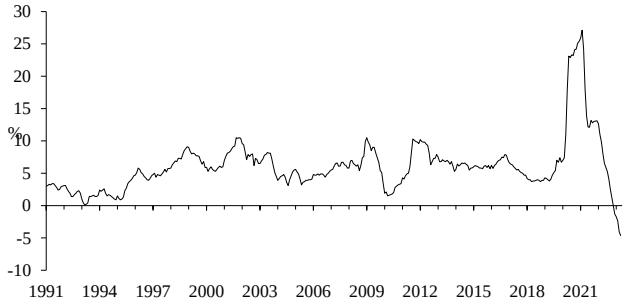


U.S.: Growth in M1 (Yr - on - Yr)

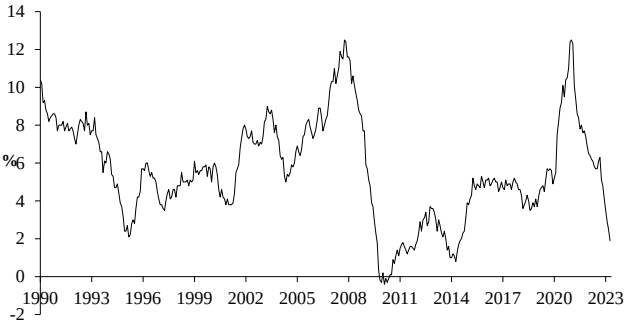


UK: M4 Growth

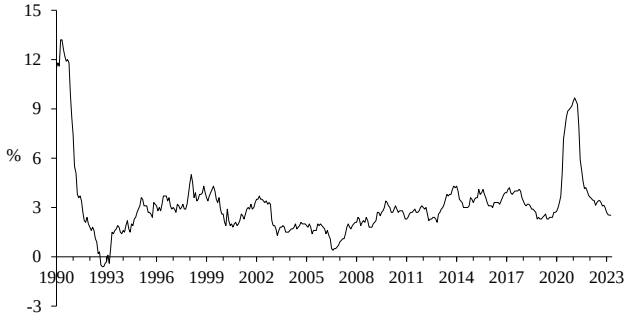
U.S.: Growth in M2 (Yr - on - Yr)



Eurozone M3 Growth



Japan: Growth of M2+CD's



FOCUS ON JAPAN

Francesco Perugini

Good news increases speculation on monetary and political front.

Japan's economy expanded at a faster pace than expected in the first quarter of the year as a further easing of pandemic regulations boosted consumption. First preliminary estimates shows GDP expansion by 1.3% in the first three months of this year over the same period of the previous year to register the strongest growth in three quarters.

These figures got help from the government's price relief measures, while better wage growth also supported private consumption, which constitutes most of the GDP and domestic demand. Indeed, private consumption grew by 2.6% year-on-year (y-o-y), making it the fifth consecutive quarter of growth. Service-related sectors such as transportation, food services and lodging benefited from the recovery from the pandemic. Capital investment rose 4.2%, while residential investment had a fifth consecutive quarter of negative growth (-1.9% y-o-y). The easing of supply constraints on semiconductors facilitated the growth of automobiles. In terms of nondurable goods, food product consumption turned negative due to high prices, while electricity consumption turned positive.

As for public government spending, this increased by 4.5% y-o-y-in the first quarter, after 4 consecutive negative quarters. Exports also increased by 4.2% y-o-y, but over the previous quarter decreased by 4.2%. Export growth slowed mainly due to poor exports of semiconductor production equipment caused by the slowdown in the global semiconductor market. Exports of automobiles and construction machinery also fell. "Japanese GDP has significantly exceeded market expectations, albeit at a low level. Consumer prices rose at a much slower pace compared to the first quarter of last year. Inflation also eased in most other components of GDP, particularly housing construction and investment spending. This must be a relief for the central bank and bond investors," said John Vail, Chief Global Strategist at Nikko AM.

Other more recent data also shows signs of growing momentum. The au Jibun Bank's purchasing managers' index of activity in Japan's service sector rose 0.9 points to a record 56.3 in May, helped by the post-Covid-19 return of foreign tourists. The reading in the manufacturing sector added 1.3 points to 50.8, rising above the 50 mark that separates a contraction from an expansion for the first time since October 2022.

The better-than-expected result is likely to keep speculation alive that the Bank of Japan (BOJ) may start normalising its policy after a decade of aggressive monetary easing. Such speculation has been persistent even as newly appointed BOJ Governor Kazuo Ueda repeatedly said that the BOJ has yet to project inflation will be anchored above its 2% target and therefore the bank will need to keep up its monetary easing policy. Japan currently is the only country which has not raised interest rates to curtail inflation. A change was expected at the policy meeting held for the first time by Ueda, but the central bank decided to stick with its long-standing accommodative monetary policy. Japan kept interest rates unchanged at -0.1%. In a recent interview with The Yomiuri Shimbun, a leading Japanese newspaper, and other media outlets, Ueda said the central bank would continue with large-scale monetary easing, adding, "The bank will change policies if there are expectations for wage increases or inflation, even though price rises are caused by higher resource costs." On the 2% inflation target Ueda said, "judging whether the inflation rate is sustainable and stable is more important than focusing on subtle differences in actual results." Japan's consumer price inflation has already exceeded 2% due to higher prices for resources. The BOJ has kept its monetary easing measures in place citing as a reason the instability of the current inflation figure. However, Ueda indicated the possibility that the bank would tighten its monetary policy in a flexible manner.

Looking forward, the Japanese economy faces both headwinds and tailwinds as it aims to gain more momentum towards a robust post-pandemic recovery. At home, stronger wage growth and additional price relief measures by the government are supporting consumption. But it remains to be seen if pay cheques can keep up with the pace of inflation that is so far proving stickier than expected. Downside risks mainly stem from slowdown concerns over the global economy in the wake of higher interest rates to cool inflation. Weaker overseas demand will likely hurt exports from Japan and discourage companies from capital investment.

There is also increasing speculation that Prime Minister Fumio Kishida will dissolve the House of Representatives and call a general election in the coming months before the parliamentary session ends on June 21. Observers believe that a flurry of diplomatic achievements, including a long-awaited thaw in bilateral relations with South Korea and a fruitful Group of Seven leaders' summit in Hiroshima, has given a substantial boost to Prime Minister Fumio Kishida's approval ratings. It is not the first time that a leader's popularity has grown in the aftermath of an international meeting hosted in Japan. The surge might suggest it would be simple to obtain a majority in a snap vote early in the summer. A successful summertime poll could provide him with a strong mandate to pursue large increases in defence and social spending, measures that would likely entail an unpopular tax rise.

MARKET DEVELOPMENTS

Bond markets remain turbulent as interest rates are steadily raised in ongoing monetary tightening. This is in danger of creating overkill. Meanwhile, equities should remain resilient on longer term recovery prospects.

Table 1: Market Developments

	Market Levels		Prediction for Jun/Jul 2024	
	May 12	Jun 7	Previous Letter	Current View
Share Indices				
UK (FT 100)	7755	7624	7917	7784
US (S&P 500)	4123	4272	4419	4579
Germany (DAX 30)	15914	15961	20242	20302
Japan (Tokyo New)	2096	2206	2870	3020
Bond Yields (government				
UK	3.78	4.29	4.00	4.00
US	3.46	3.81	3.50	3.40
Germany	2.23	2.46	2.20	2.20
Japan	0.39	0.44	0.50	0.50
UK Index Linked	0.66	0.89	1.00	1.00
Exchange Rates				
UK ($ per £)	1.25	1.25	1.20	1.20
UK (trade weighted)	80.01	81.02	77.9	77.3
US (trade weighted)	106.94	108.69	113.2	113.2
Euro per $	0.92	0.93	0.98	0.98
Euro per £	1.15	1.16	1.18	1.18
Japan (Yen per $)	135.31	139.74	140.0	140.0
Short Term Interest Rates				
UK	4.68	4.92	4.00	4.00
US	5.32	5.51	4.30	4.30
Euro	3.32	3.48	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	3.70	12.90
Germany	2.10	1.2	3.0	23.00	–1.05	28.25
Japan	1.90	1.1	1.8	34.00	3.52	42.32
UK indexed[2]	0.66		3.0	16.00		19.89
Hong Kong[3]	2.60	3.0	3.0	–39.00	3.70	–26.70
Malaysia	3.30	5.4	3.0	51.00	3.70	66.40
Singapore	3.50	3.0	3.0	15.00	3.70	28.20
India	1.40	6.5	3.0	10.00	3.70	24.60
Korea	1.10	0.0	3.0	–48.00	3.70	–40.20
Indonesia	2.20	4.5	3.0	19.00	3.70	32.40
Taiwan	2.80	3.0	3.0	20.00	3.70	32.50
Thailand	3.20	2.5	3.0	16.00	3.70	28.40

Bonds: Contribution to £ yield of:

	Redemption Yield	Changing Nominal Rates	Currency	Total
UK	4.29	2.94		7.23
US	3.81	4.05	3.70	11.55
Germany	2.46	2.64	–1.05	4.05
Japan	0.44	–0.63	3.52	3.32

Deposits: Contribution to £ yield of:

	Deposit Yield	Currency	Total
UK	4.92		4.92
US	5.51	3.70	9.21
Euro	3.48	–1.05	2.42
Japan	–0.03	3.52	3.49

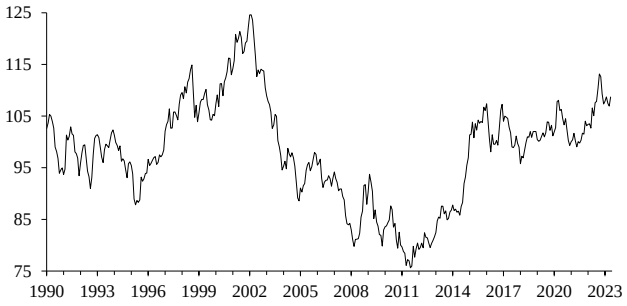
[1] Yields in terms of €s or $s can be computed by adjusting the £-based yields for the expected currency change.
[2] UK index linked bonds All Stocks
[3] Output based on China.

Table 3: Portfolio(%)

	Sterling Based Investor		Dollar Based Investor		Euro Based Investor	
	May Letter	**Current View**	**May Letter**	**Current View**	**May 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)	-	-	-	-	-	-

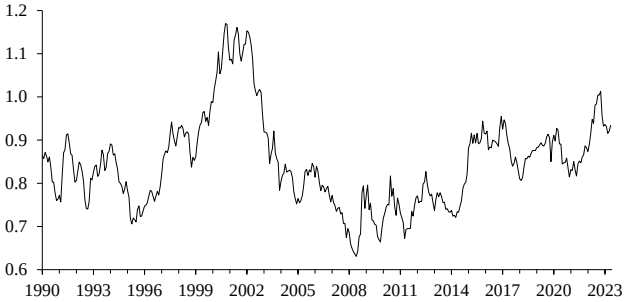
INDICATORS AND MARKET ANALYSIS
FOREIGN EXCHANGE MARKETS

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

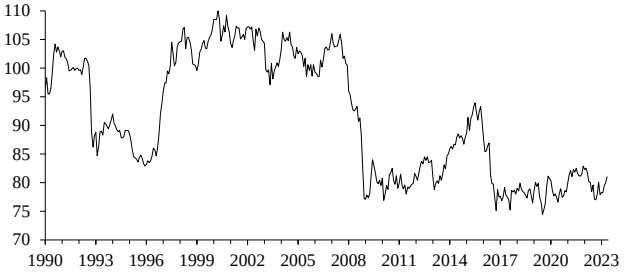


UK: Dollars Per Pound Sterling

Euro per US dollar



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

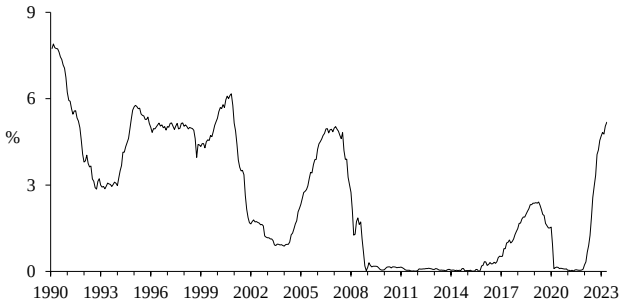


Japan : Yen Per U.S. Dollar

GOVERNMENT BOND MARKETS

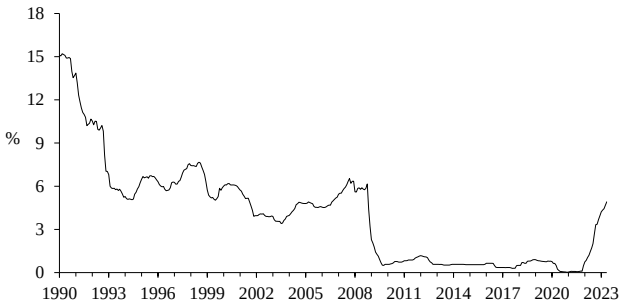
U.S.: Yield on Long-Term Government Bonds

U.S. : 3-Month Treasury Bill

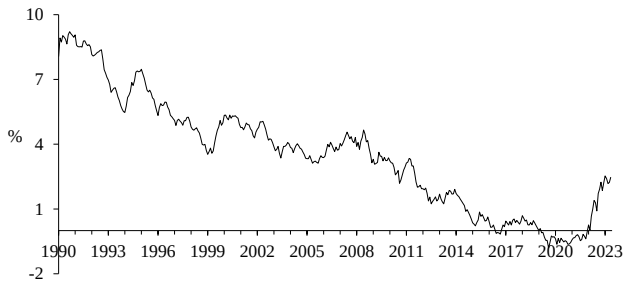


U.K.: Yield on Long-Term Government Bonds

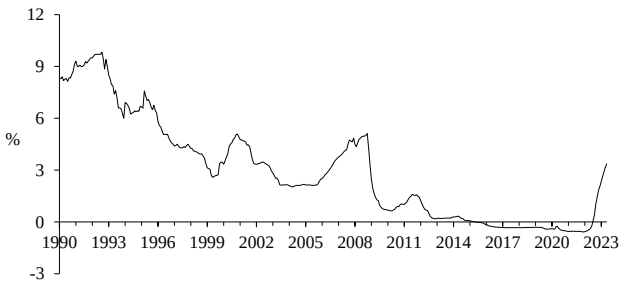
U.K. : 3-Month Certificate LIBOR Rate



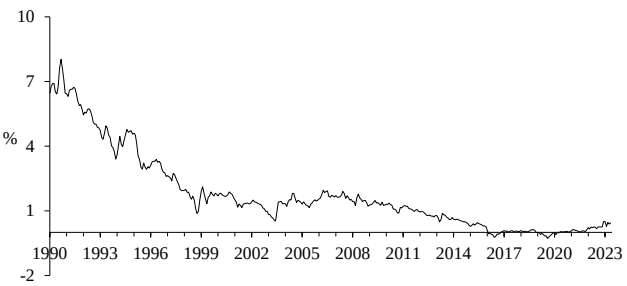
Germany: Yield on Public Authority Bonds



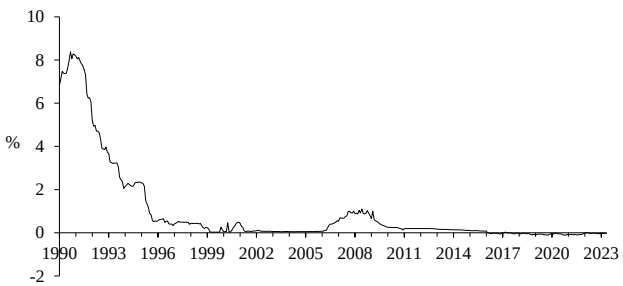
Germany : 3-Month Interbank Deposit Rate



Japan: Yield on Long-Term Government Bonds

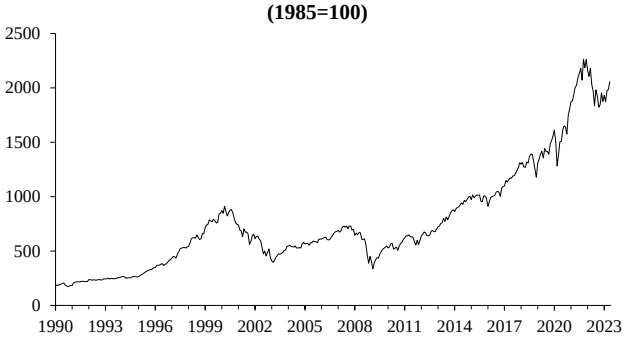


Japan : 3-Month Money Market Rate

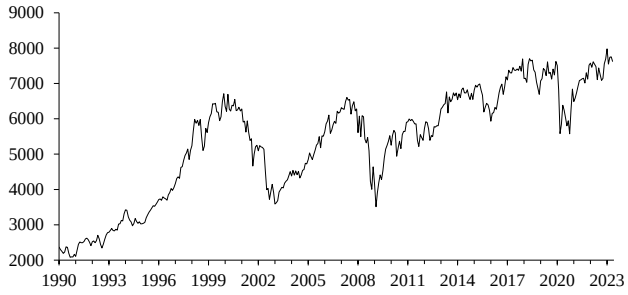


MAJOR EQUITY MARKETS

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 GDP growth achieved in 2022–23 surprised many, as real gross domestic product (GDP) growth was 7.2%. It is 20 basis points higher than the Reserve Bank of India's forecast of 7%. The growth came from the farm and agriculture sectors, whilst manufacturing growth was apathetic. The sharp upside in Q4 GDP growth — also corroborated by strong corporate earnings — indicates the resilience of the Indian economy amidst an unfavourable global backdrop. There remain many challenges to the economy in the coming fiscal year. However, a steady recovery in private investments, supported by healthy balance sheets and continued capex push by the government, should limit the downside.

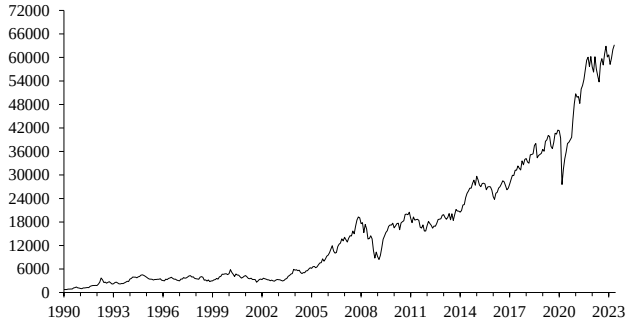
The RBI has projected a GDP growth of 6.5% for 2023–24, the same as our projection. India's manufacturing activity hit a 31-month high, according to the S&P Global Purchasing Managers' Index. It is not surprising, given the government's steadfast commitment to pushing the investment in infrastructure. It has crowded in private sector capex. The sector reported strong Q4 order flows in the already robust order books of capital goods and infrastructure companies.

The Indian government achieved the fiscal deficit target of 6.4% of GDP in FY23. Upbeat gross tax collections and thrust on capex have been the major highlights of the Centre's fiscal performance during the year.

India is being praised for supply-side policy reforms, formalization of the economy, Real Estate (Regulation and Development) Act, digitalizing social transfers, Insolvency and Bankruptcy Code, flexible inflation targeting, focus on FDI etc. These changes attract both portfolio and foreign direct investors to the country. Many companies are looking to diversify away from China. India is a natural place to go to because there are government incentives, a better environment to do business, and, most significantly, India is one of the best markets. Companies estimate India will be an attractive destination over the next ten years.

India's monetary policy experts appear to have the right balance in the current cycle of rate hardening. It followed a prudent fiscal and monetary policy during the Cond-19 pandemic. We expect India's inflation to moderate to 5% in FY24. Lower inflation will support demand in urban areas; a normal monsoon will take care of robust demand in rural areas. The Monetary Policy Committee of the Reserve Bank of India left the policy rates unchanged at 6.5% in their review meeting on June 8. Inflation is falling within the Bank's target range of 4% to 6%. The RBI will remain active in its liquidity management and signalled that

India: BSE Sensex



monetary conditions would remain tight as it looks to curb inflationary pressures further.

India's trade deficit narrowed to a 21-month low in April as softening domestic demand and easing commodity prices led to a lower import bill. The combined merchandise and services deficit fell to $1.38 billion compared with $8.37 billion in the same period last year. India's current account deficit, the difference between the inflow and outflow of foreign exchange, has narrowed to $18.2 billion or 2.2% of GDP in the October to December quarter (Q3FY23) from 4.4% of the GDP in the quarter ending September. India's current account balance may have moved to a surplus in the March quarter, thanks to decreased commodity prices, rising remittances, and robust services exports. It's the country's first such surplus in six quarters, attributed to India's shrinking external financing needs. A current account surplus of $6 billion, or 0.7% of the GDP, is not ruled out in the current fiscal year. The surplus's main drivers are weakening commodity prices, strong services exports and rising remittances by people working abroad.

Even though it seems to be depreciating, the rupee has been among the world's better-performing currencies. India's foreign exchange reserves stood at a one-month low of $589 billion as of May 26. It was the second consecutive week of falling reserves marginally. The USD/INR pair fell below 82.50 recently but will likely find support from the economic fundamentals.

In a surprise announcement, foreign minister Jaishankar pronounced the government's economic policy unambiguously. He made it clear that he is saying this as a cabinet minister and a member of the cabinet's economic affairs committee. The first message was that the government would support manufacturing. Second, the government will continue to pursue its policies to support the manufacturing sector in the country. Third, the government will help create a domestic value chain. Fourth, the government seeks to energize the economy and motivate businesses to believe that it is possible to manufacture in the country through the production-linked

incentive (PLI) scheme. Fifth, strong business is about economics and a critical national security segment. Sixth, India needs to move to a strategic economy and clearly understand our partners, our opportunities, and where we should focus on technology tie-ups. Seventh, Make in India is a strategic statement, not just an economic or manufacturing programme. Eighth, focusing on services is an elegant excuse for being incompetent in manufacturing. Finally, business or economics is too serious to be left to the business people and economists. He said that no major country has sustained or enhanced its global position without some commensurate build-up on manufacturing.

	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	-70.0	-40.0	0.0	0.0
Rs./$(nom.)	81.0	82.0	83.5	85.0	85.0

China

China's growth is slowing down amidst many adversarial structural issues and a cold export market. China's Caixin manufacturing PMI — mainly covering smaller and more export-oriented businesses than the official PMI — unexpectedly gained 50.9 in May, signalling expansion. The official manufacturing PMI, meanwhile, dropped to 48.8, pointing to a deeper contraction in factory activity in May. Growth in the services and construction sectors also eased. This diversion is because the Caixin report compiled by S&P Global is based on a survey sample of around 650 private and state-owned manufacturers. The official PMI, published by the National Bureau of Statistics, is based on a survey of 3,200 companies.

Wall Street's assumption of 5% GDP growth would suggest corporate revenue growth of 8%, but it rose by 1.5% in the first quarter. Corporate revenue is slower than GDP in 20 of the country's 28 sectors, and the MSCI China stock index is down 15% from a January peak. To understand this puzzle, we should appreciate that China's growth model depends on stimulus and debt. This model has worked well for the last three decades; it is unsustainable and has run out of steam.

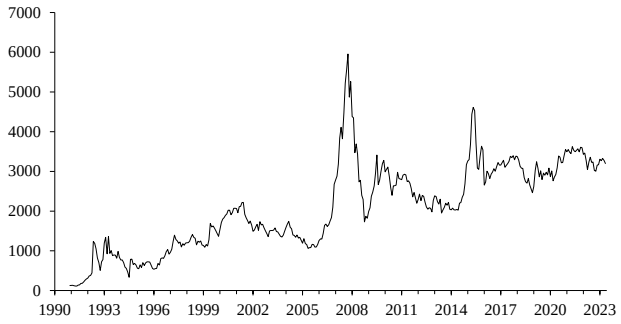
The default risk, which threatens financial stability from real estate developer debt — equal to 12% of China's GDP — forced the authorities to help the sector. Some of the measures in place are:

- Lower mortgage rates for first-home buyers if newly constructed house prices drop for three consecutive months.

- A nationwide cap on real estate commissions to boost demand further.

- Allowing private equity funds to raise money for residential property developments.

China: SSE Composite Index



- Pledging 200 billion yuan ($28 billion) in special loans to ensure stalled housing projects are delivered.

- A 16-point plan unveiled in November ranged from addressing the liquidity crisis to loosening down-payment requirements for homebuyers.

China is working on new measures to support the property market after existing policies failed to sustain a rebound in the ailing sector. Regulators are considering reducing the down payment in some non-core neighbourhoods of major cities, lowering agent commissions on transactions, and further relaxing restrictions for residential purchases under the guidance of the State Council.

China's factory gate prices fell faster than expected in May as faltering demand weighed on manufacturing, impeding the fragile economic recovery. Meanwhile, consumer inflation did not pick up as was widely expected. The producer price index (PPI) for May fell for an eighth consecutive month, down 4.6%. The consumer price index (CPI) rose 0.2% year-on-year after a 0.1% rise in the previous month. Keeping the trend of CPI and WPI in mind, the People's Bank of China said there is no foundation for long-term deflation or inflation.

China's central Bank kept the benchmark lending rates unchanged, as expected, despite recent data signalling a patchy economic recovery. The People's Bank of China left its key policy rate — the medium-term lending interest rate banks use to price LPR — unchanged. The one-year loan prime rate remained steady at 3.65%, while the five-year LPR remained at 4.3%. We expect 10bp cuts to the MLF rate and LPR in mid-June to support economic growth. Large banks are being coaxed to reduce deposit rates.

In U.S. Dollar terms, China reported a sharp decrease in the trade surplus as exports showed a bigger-than-expected drop. Trade Balance was USD 65.8 billion compared to USD 90.2 billion in April. Exports fell 0.8% in May compared to 16.8% growth in April. Imports grew 2.3% compared to shrinking by 0.8% in April. In the first four months of the year, exports edged up 2.5% over 2022 to $1.12 trillion. China's first-quarter international payments remained broadly balanced, with the country's goods trade surplus staying buoyant while trade in services and foreign

direct investment registered a deficit. The country's current account recorded a surplus of $82 billion in the first quarter of the year, equivalent to 2% of China's GDP for the same period versus 2.2% in 2022.

China's yuan has skidded to six-month lows against the dollar, and it could weaken further as investors fret over a bumpy pandemic recovery in the world's second-largest economy. The yuan had depreciated roughly 6% against the surging dollar since the highs hit in January when global markets embraced China's border reopening, and it is one of the worst-performing Asian currencies this year. A weaker currency at the current juncture can help export performance, especially as global trade is shrinking this year. We believe the central Bank will not step in unless the spot yuan weakens quickly through 7.2 to the U.S. dollar.

At the Shangri-La Dialogue, the U.S. and China clashed over crucial issues, especially Taiwan. The U.S. Defence Secretary Lloyd Austin chided Beijing for failing to engage, while his Chinese counterpart Li Shangfu accused Washington of using bullying and divisive alliances. At the same time, Li didn't meet Austin except for a brief handshake. China has rejected claims by President Biden and his European allies that they intend to "de-risk," not "decouple," from the Chinese economy — as the U.S. and its European partners seek to explain new restrictions on economic ties with Beijing. "A change in words does not mean a difference in action," the official Xinhua News Agency said in a commentary. "De-risking is just decoupling in disguise."

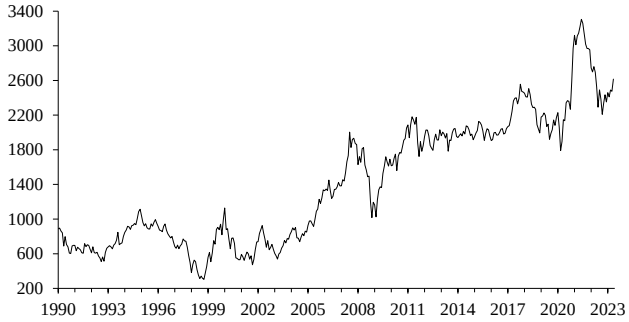
	22	23	24	25	26
GDP (%p.a.)	3.0	5.0	4.8	4.0	3.5
Inflation (%p.a.)	2.0	2.2	1.5	2.0	2.2
Trade Balance(US$ bill.)	420.0	255.0	150.0	100.0	50.0
Rmb/$(nom.)	6.8	7.0	7.2	7.3	7.4

South Korea

South Korea's economy grew 0.3% in the first quarter from the previous quarter, after a 0.3% contraction in the last three months of 2022. We expect the recovery to gain ground in the coming quarters. The most significant contributor was private consumption, which increased by a revised 0.6% quarter-on-quarter, while facilities and construction investments were 5% lower and 1.3% higher, respectively. We maintain our forecast of 1% growth in GDP in 2023 and 2.5% in 2024.

The consumer price index (CPI) rose 3.3% in May year-on-year. It was the slowest rise since October 2021, peaking at a nearly 24-year high of 6.3% in July 2022. The core inflation remained elevated. Inflation is expected to average

Korea: Composite Index



3% for 2023, unchanged from our earlier projection. The Bank of Korea in May kept its base rate intact at 3.5% for a third consecutive policy meeting and lowered its growth forecast for this year. We do not expect the central Bank to cut interest rates soon to boost economic growth.

A weakening won has contributed to rising inflation in South Korea which led to a round of rapid rate hikes by the Central Bank in the first place. The won is floating around 1,310 per dollar; it remains about 3% weaker this year, the worst-performing in Asia. The won isn't likely to strengthen to pre-pandemic levels, given structural changes, including heightened geopolitical competition, an ageing population and increasing demand for overseas investment.

South Korea's economy is now cooling, with exports contracting year over year for a seventh consecutive month in April — the longest losing streak in more than three years — on weak global demand. Exports rose 4.5%, while imports climbed 4.2%. South Korea's exports slump eased for a second month in May, an early sign that weakness in global demand may finally be starting to moderate. South Korea logged a current account surplus in March as a goods account deficit, and dividend payments overseas narrowed amid an extended export slump.

A shift in Asia-focused portfolios is underway as major markets decouple from China, surging despite concerns that a slump in the region's largest economy will drag on equities elsewhere. Bright prospects for world-leading chipmakers in Korea and Taiwan, a revival of inflation in Japan and India's booming consumption are among the tailwinds boosting their stocks just as China indexes become global laggards. South Korea may finally join MSCI's developed market indexes in June, which could bring in more than $50 billion of inflows.

	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

Taiwan's economy has slipped into recession after contracting for two quarters in a row. We had expected the economy to grow slowly in 2023. We maintain our forecast of subpar growth of 0.5% in 2023. After the data on the recession was released, Central Bank Governor Yang Chin-long warned that the economy may not rebound until the fourth quarter of 2023. The governor said policymakers would weigh inflation and economic growth when making their next interest rate decision on June 15. It has raised rates five times since March last year.

This time more attention is being paid to the upcoming presidential election. It is scheduled to be held on January 13 2024. Incumbent President Tsai Ing-wen of the Democratic Progressive Party, who was re-elected in 2020, is ineligible to seek a third term. Prospective candidates have different views on Taiwan's relationship with China and the U.S.

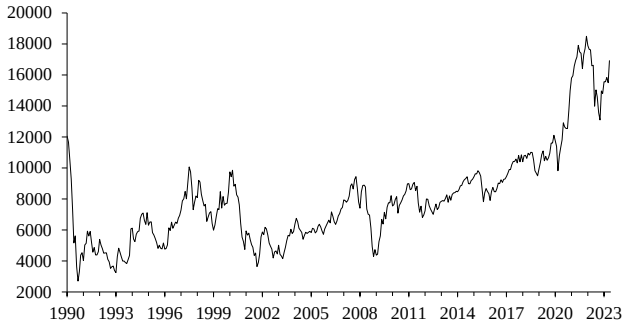
Taiwan's tech-heavy market is rallying as demand surges for all things A.I., and the chip cycle is turning a corner. Benchmark has gained nearly 18% this year. We expect the Taiwanese dollar to appreciate by a couple of percents by the end of the year.

The U.S. and Taiwan signed a new trade deal as tensions with China rise. It is the most comprehensive deal on trade it had reached with the U.S. since 1979, when Washington switched formal diplomatic recognition to Beijing, downgrading ties with Taipei. The Taiwan government said the new deal would serve as "a building block" for an eventual free-trade agreement with the U.S.

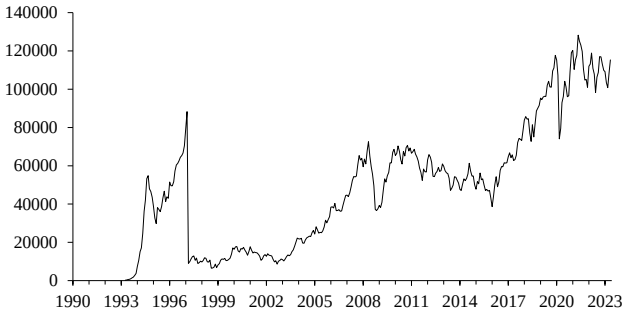
China warned Washington against signing any deal "with connotations of sovereignty or an official nature with China's Taiwan region". A US Congressional Committee brought out a report titled 'Ten for Taiwan' that listed ten action points to be taken by the U.S. government, all aimed at building up Taiwan militarily and boosting U.S. military strength in the region. The U.S. has recently managed to get four more bases in the Philippines and signed a security pact with Papua New Guinea. It's no wonder then that Chinese President Xi Jinping has asked his National Security Council to prepare for the "most extreme scenarios" so that they could withstand "high winds and waves and even perilous storms". However, the Biden administration maintains no change in its One China policy.

	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

Taiwan: Weighted TAIEX Price Index



Brazil: Bovespa



Brazil

The Brazilian economy is recovering as the bitter medicine of tight monetary conditions is administered under very hostile political conditions. We maintain our forecast of the economy to grow to 2% this year without inflationary pressure. A boost from a strong harvest and more robust services activity due to government policies raising disposable income will help maintain growth. Brazil's unemployment rate fell in the three months through April from the first quarter as the number of people seeking jobs declined.

Inflation in Brazil continued to slow down in early May and is likely to put more pressure on the central Bank to lower interest rates. The local IPCA-15 consumer price index reached 4.07% in the 12 months to mid-may, decelerating from 4.16% in the previous month and hitting its lowest level since October 2020. President Lula criticized the central Bank for holding its benchmark interest rate at a six-year high of 13.75% despite declining inflation, arguing that such high borrowing costs hamper economic activity. Central bank chief Roberto Campos expects that a slowdown in core inflation will continue. He is adamant about keeping interest rates elevated while long-term inflation expectations are around 4%. Brazil has an inflation target of 3.25% for 2023, which will be lowered to 3% in 2024.

Brazil's current account deficit remains volatile as commodities prices are volatile. Brazil recorded a current-account deficit of $1.7 billion in April, from a surplus of $286 million in March. Foreign direct investment reached

$82 billion for the 12 months through April, compared with $89.7 billion for the 12 months through March.

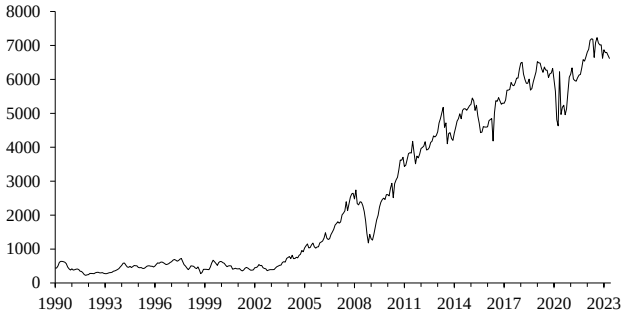
The Brazilian real is maintaining its level of around five real to a U.S. dollar. The benchmark Bovespa stock index is gaining as economic growth prospects are emerging.

	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

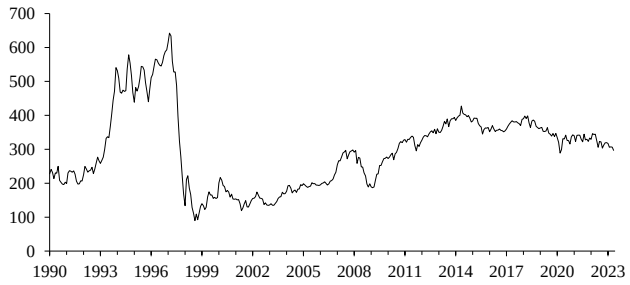
Other Emerging Markets

Hong Kong: FT-Actuaries

Indonesia: Jakarta Composite

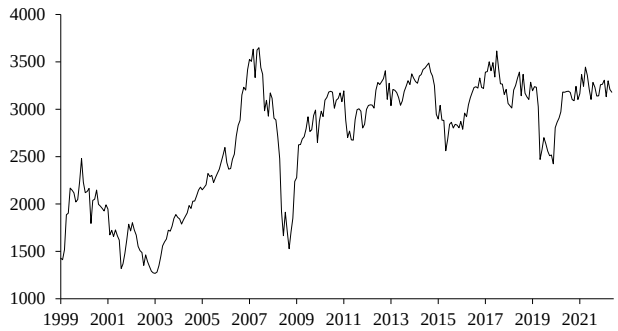


Malaysia: FT-Actuaries (US$ Index)

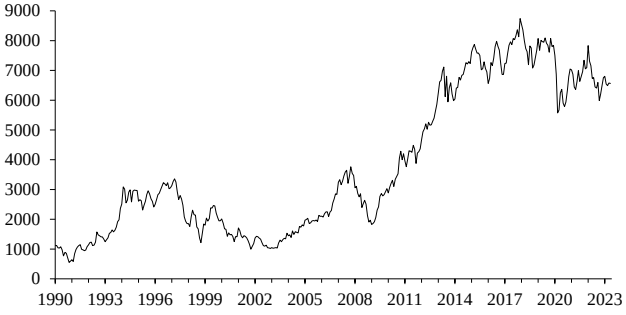


Thailand: Composite Index

Singapore: Straits Times Index

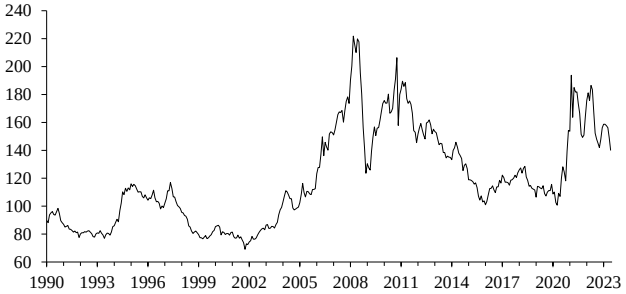


Philippines: Manila Composite

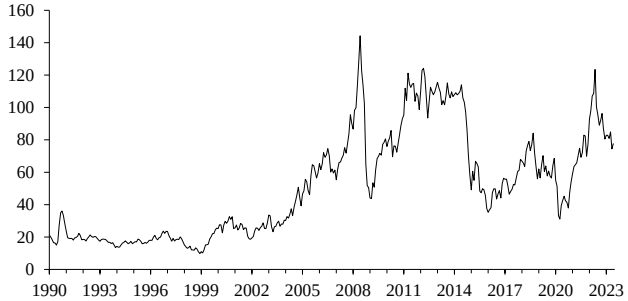


COMMODITY MARKETS

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



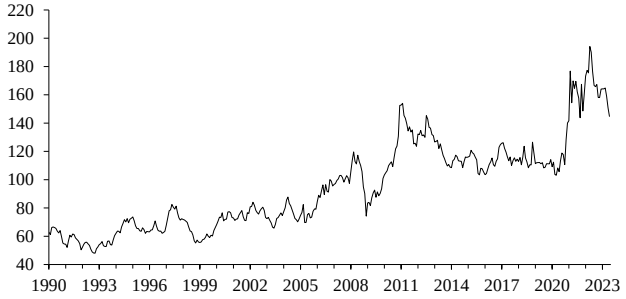
Oil Price: North Sea Brent (in Dollars)



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]
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