

LIVERPOOL INVESTMENT LETTER

December 2022



Cardiff Business School

Ysgol Busnes Caerdydd

Julian Hodge Institute of Applied Macroeconomics



LIVERPOOL RESEARCH GROUP IN MACROECONOMICS

LIVERPOOL RESEARCH GROUP IN MACROECONOMICS

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

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

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<p>There is increasing comment from economists opposed to Brexit that it has damaged UK trade, GDP and investment performance. In this issue we examine the data carefully for evidence of this. In theory we expect to find short run disruption of EU trade due to the creation of a new border and accompanying processes but this should disappear as the Agreement with the EU designed to avoid trade barriers and border hold-ups takes effect.</p> <p>In a large set of regressions across all trade variables with EU and non-EU partners, and across GDP and investment, we find no statistically significant ongoing Brexit effects.</p>	
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REVISITING THE SHORT-RUN EFFECTS OF BREXIT ON TRADE, INVESTMENT AND GDP

There has been a lot of recent comment in the media to the effect that Brexit has damaged trade and the economy — for example, from LSE’s Dr. Swati Dhingra in oral evidence to the Commons Treasury Committee¹, and also Chris Giles’ recent report in the FT². Accordingly, we have looked for any such effect in UK data; it should show up as a statistically significant effect of the date of Brexit. We did this previously in the July 2022 Quarterly Bulletin, pp 9-11; here we update the data from 2005 to the latest for 2022. Of course, the data has notoriously been highly volatile due to major shocks such as the financial crisis and Covid. This makes a detectable Brexit effect unlikely. Not surprisingly, we cannot find any significant effect of Brexit in any of these regressions. The Brexit effects ‘found’ by media commentators are therefore not soundly estimated.

As noted in the FT by Giles, the work mainly uses ‘doppelganger methods’ in which a group of other economies which in the past has behaved similarly to the UK is compared with the UK over the period since Brexit; if performance changes this is attributed to Brexit. There are two problems with this method. The first is that there is a potential for selection bias, in that the group can be selected precisely because it ‘shows an effect’; those using this method have controlled for this by using an algorithm that chooses country weights based solely on maximising the group similarity to the UK prior to Brexit. The result (e.g. in the Centre for European Reform paper, ‘What can we know about the cost of Brexit so far?’³) is a weighted average of 22 countries — in practice close to the OECD average. The second is that the effect must be identified as a permanent Covid effect and found to be statistically significant, in spite of all the data variability. This needs to be done by introducing a dummy variable into a regression on the doppelganger variable which takes the value of minus one from the date of EU exit at the start of 2020; the coefficient on this term must be statistically significant to be evidence of a permanent Brexit effect, as opposed to being simply part of the statistical noise surrounding the relationship. It is not correct to treat the difference between the UK and the doppelganger, D group, post-Brexit as ‘due to Brexit’; shocks of all sorts affect the UK and the D group, both before and after Brexit. What we need to know is the extent to which any difference is associated with the date of EU departure, namely the dummy variable, after

¹<https://committees.parliament.uk/committee/158/treasury-committee/publications/oral-evidence> (16th November)

²<https://www.ft.com/content/e39d0315-fd5b-47c8-8560-04bb786f2c13>

³https://www.cer.eu/sites/default/files/pbrief_costofbrexit_8.6.22_0.pdf

Table 1: Summary of Forecast

	2018	2019	2020	2021	2022	2023	2024
GDP Growth ¹	1.3	1.4	-11.0	7.5	4.6	-0.2	2.1
Inflation CPI	2.4	1.7	1.0	2.5	8.9	5.0	3.2
Wage Growth	3.0	3.5	1.6	5.8	5.8	4.5	3.2
Survey Unemployment	4.1	3.8	4.5	4.5	3.6	3.5	2.8
Exchange Rate ²	78.6	78.3	78.2	81.5	79.4	78.1	77.9
3 Month Interest Rate	0.4	0.8	0.2	0.1	1.8	3.0	3.0
5 Year Interest Rate	1.0	0.6	0.1	0.4	2.3	3.1	3.0
Current Balance (£bn)	-87.8	-63.3	-67.5	-45.6	-97.2	-24.2	-14.7
PSBR (£bn)	39.3	64.3	312.5	133.3	72.3	45.5	26.8

¹Expenditure estimate at factor cost

²Sterling effective exchange rate, Bank of England Index (2005 = 100)

allowing for all the volatility in the data through the full sample both before and after Brexit.

As we have said in previous publications (e.g. Minford and Meenagh, 2020, After Brexit — what next? Edward Elgar) the effects of Brexit will come in over the long term as free trade agreements are completed and a new regulative environment established. In the short run we expect some temporary and minor disruption as existing relationships with the EU are remade under UK independence; ‘temporary and minor’ because the Trade and Cooperation Agreement is intended by both the UK and the EU to maintain cooperation and avoid new trade barriers, whereas short run effects as people and firms adapt may well be found. But we would not expect to find any permanent effects.

Any effects of Brexit must come through via trade, so we explore here the effects on trade as well as those on GDP and investment. Our method for avoiding any selection bias is to use the OECD average as the group of countries to compare with the UK when we are gauging whether the comparison shifted post-Brexit: we use the OECD as the comparator to see if UK GDP and investment/GDP ratio has shifted relative to the OECD post-Brexit. We look at data behaviour for the last two decades and check whether there is any permanent effect of Brexit via the significance of the Brexit dummy. As already noted the D group chosen by the CER algorithm is close to this OECD average and so will give similar results — we are checking for robustness to changes in setting up the comparison group, where there are many possibilities.

In examining trade, in our first set of regressions we specify normal trade demand relationships⁴ and check whether they shifted due to the Brexit dummy. We examine

⁴ The data are heavily trended so we do not interpret the regression coefficients as structural relationships but as ‘reduced form’ ones reflecting the correlation of the underlying trends. The focus here is only on whether they are shifted by Brexit.

imports and exports, to the EU and to the non-EU; in volume terms and in current price terms. What we see is that in none of these regressions is there a significant Brexit

effect. Coefficients in the regression that are significant at the 5% level are asterisked.

Table 1 CP/deflator measure, OLS estimate results, 2005Q1 to 2022Q2,

	Export EU	Export non-EU	Import EU	Import non-EU
EU GDP	1.158* (0.197)			
World import		0.612* (0.048)		
UK GDP			1.987* (0.113)	1.692* (0.119)
RXR	-0.105 (0.099)	-0.438* (0.102)	-0.835* (0.077)	-0.832* (0.082)
Brexit departure	0.028 (0.065)	0.097 (0.063)	-0.069 (0.055)	-0.001 (0.058)
COVID	-0.134 (0.075)	-0.076 (0.071)	0.055 (0.064)	0.039 (0.068)
COVID recovery	-0.09 (0.074)	-0.129* (0.067)	-0.049 (0.058)	-0.033 (0.062)

Note: *significant at the 5% level; Constant is not reported but included in the regression

Table 2 Current price measure, OLS estimate results, 2005Q1 to 2022Q2,

	Export EU	Export non-EU	Import EU	Import non-EU
EU GDP	1.104* (0.065)			
World imports		0.983* (0.037)		
UK GDP			1.201* (0.037)	1.027* (0.051)
RXR	-0.243* (0.108)	-0.642* (0.077)	-0.349* (0.054)	-0.414* (0.072)
Brexit departure	0.026 (0.065)	-0.032 (0.047)	-0.008 (0.033)	0.052 (0.044)
COVID	-0.075 (0.073)	-0.017 (0.054)	-0.092* (0.037)	-0.088 (0.049)
COVID recovery	-0.112 (0.073)	-0.157* (0.051)	-0.126* (0.035)	-0.098* (0.046)

Note: *significant at the 5% level; Constant is included in the regression

We go on to consider the investment/GDP ratio and regress the UK data on the OECD data, as follows. The regression relates the UK investment/GDP ratio to that in its OECD peers. As the chart of the two series shows, shows, the UK ratio is lower than the OECD average, probably because as a predominantly service economy UK capital is much more intangible so not included in the fixed investment figures. The UK ratio is also more stable than the OECD's, fluctuating about half as much, probably for the same reason. It can be seen there is no significant effect of Brexit.

$$\begin{aligned} \ln(\text{UK Investment GDP ratio}) &= C \\ &+ \beta_1 \ln(\text{OECD investment GDP ratio}) \\ &+ \beta_2 \text{Brexit departure dummy} \\ &+ \beta_3 \text{Covid dummy} \\ &+ \beta_4 \text{Covid recovery dummy} \end{aligned}$$

Table 3 Investment GDP ratio, 2005Q1 to 2022Q2

	UK Investment/GDP
OECD Investment/GDP	0.534* (0.154)
Brexit departure	0.007 (0.008)
COVID	-0.002 (0.009)
COVID recovery	-0.002 (0.008)

Next, we do the same for GDP, regressing the UK on the OECD and the same dummy variables. This regression tests whether the UK's GDP behaviour relative to its OECD peers' average was affected by Brexit; notice the strong connection between UK and OECD GDP, stemming from the fact that both are responding to the same world shocks and are also closely linked by trade. This suggests that the OECD fulfils the role of doppelganger effectively, but with no selection of a country subset involved; ceteris paribus UK GDP will vary closely with OECD GDP. If Brexit reduced UK GDP it should show up as a significant negative factor. As can be seen, the effect is insignificant.

Table 4 GDP regression, CVM, 2005Q1 to 2022Q2

	UK GDP
OECD GDP	0.879* (0.049)
Brexit departure	0.032 (0.027)
COVID	-0.034 (0.032)
COVID recovery	0.003 (0.030)

Figure 1 UK Export, EU and Non.EU

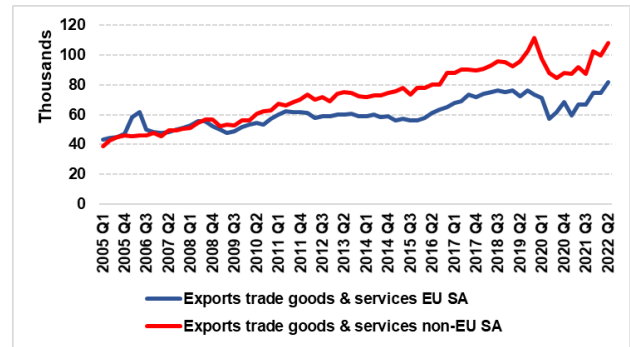


Figure 2 UK Import, EU and Non.EU

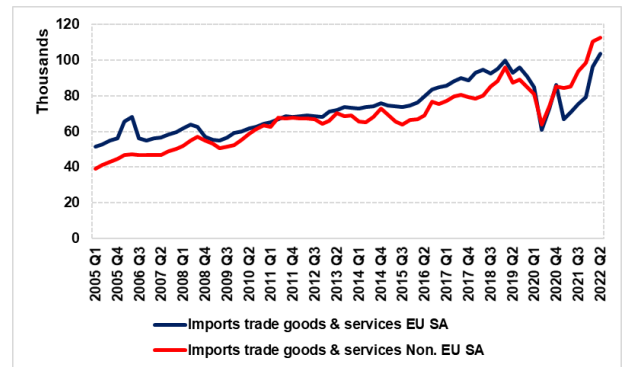


Figure 3 Investment-output ratio, UK and OECD

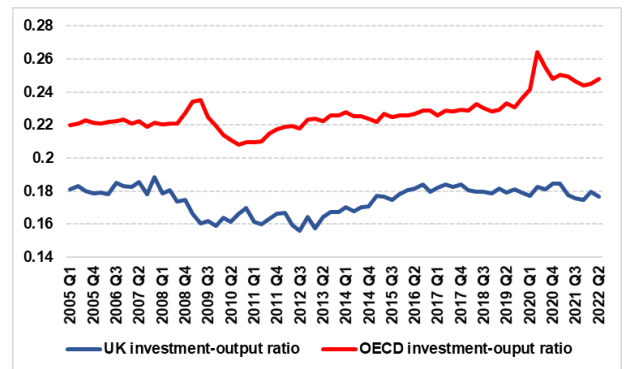
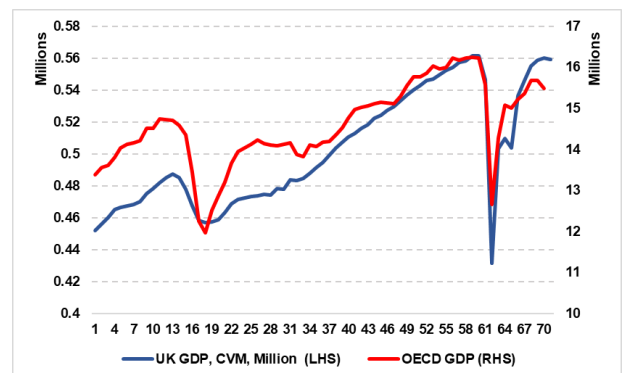


Figure 4 Output, CVM measure UK and OECD



Variable definitions:

Dependent Variable	Definition	Source
Export EU	Exports trade goods & services EU, current price, SA	ONS
Export non-EU	Exports trade goods & services Non. EU, current price, SA	ONS
Import EU	Imports trade goods & services EU, CP, SA	ONS
Import non-EU	Imports trade goods & services Non. EU, CP, SA	ONS
Independent Variable		
RXR	Effective Exchange rate index	BoE
UK GDP	GDP, CVM, SA	ONS
EU GDP	Millions of Chained 2010 Euros, Seasonally Adjusted	Eurostat
World import	Import trade in goods & services, constant price & PPPs	OECD
Brexit departure dummy	-1 from Q1 2020, 0 otherwise	-
COVID dummy	1 from Q2 2020 to Q4 2020, 0 otherwise	-
COVID recovery dummy	1 from Q1 2021, 0 otherwise	-

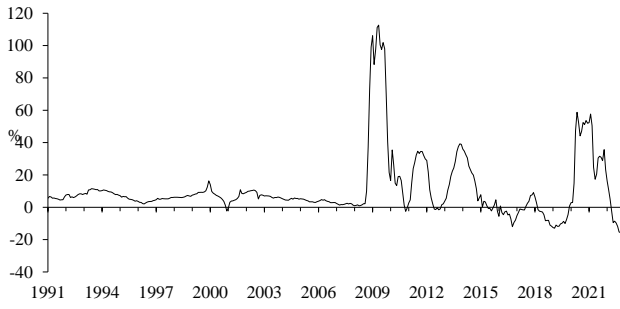
Dependent Variable	Definition	Source
UK investment	Total gross fixed capital formation, CVM, SA	ONS
UK GDP	Gross domestic product, CVM, SA	ONS
Independent Variable		
OECD Investment	Total gross fixed capital formation, CVM, fixed PPP, SA	OECD
OECD GDP	Gross domestic product, CVM, fixed PPP, SA	OECD
Brexit departure dummy	-1 from Q1 2020, 0 otherwise	-
COVID dummy	1 from Q2 2020 to Q4 2020, 0 otherwise	-
COVID recovery dummy	1 from Q1 2021, 0 otherwise	-

Conclusions

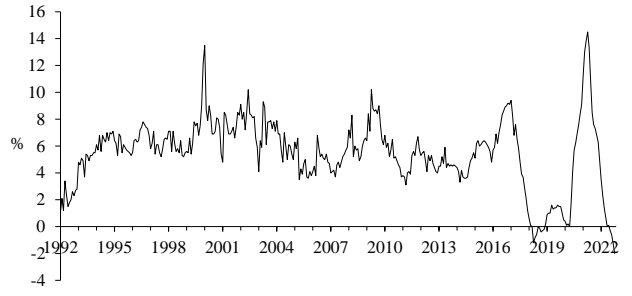
Thus, whatever relationships we examine, whether trade, investment or GDP, we find no statistically significant ongoing effect of leaving the EU. We are investigating whether changing the group make-up for the comparator makes any difference to our results but we think they are likely to be highly robust, given that any group will consist largely of major OECD countries. They should not come as a surprise. There has been enormous turbulence in the past few years in all economies due to Covid and the Ukraine war, besides accompanying large fiscal and monetary

policy fluctuations. This can be seen in the charts of these data series, shown here. Brexit is one policy shift among many shocks, and estimating its effect with any certainty is difficult. Economic theory suggests it will have had a disruptive effect on EU trade in the short run as businesses adapt to a new border and the resulting new paperwork and related processes. But the TCA is designed to create a barrier-free and seamless border; so we should expect this effect to be dissipated steadily — including in the future as the TCA is streamlined by new talks — and not to be permanent. This is consistent with these regressions on the data.

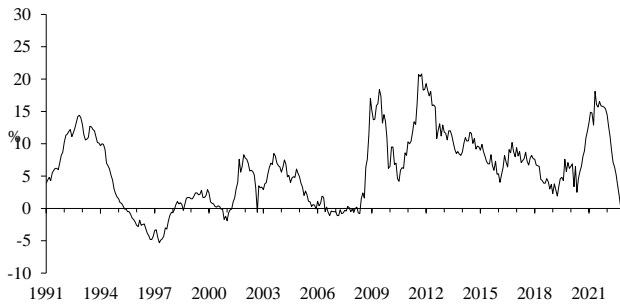
U.S.: Growth in M0 (Yr - on - Yr)



UK: Notes and Coins in Circulation Growth



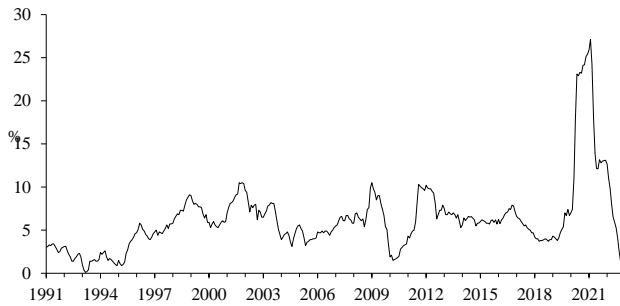
U.S.: Growth in M1 (Yr - on - Yr)



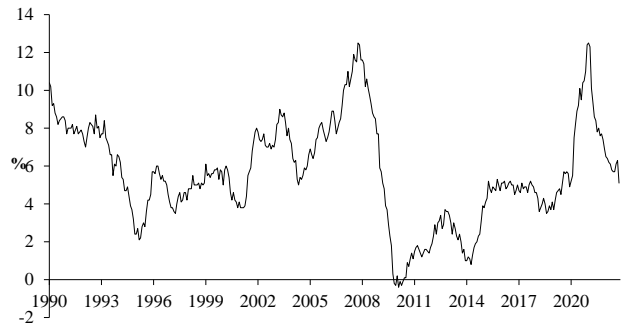
UK: M4 Growth



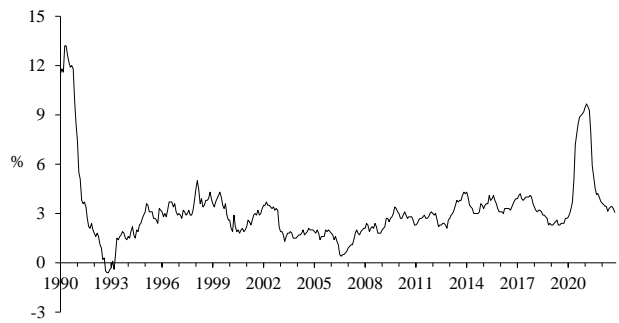
U.S.: Growth in M2 (Yr - on - Yr)



Eurozone M3 Growth



Japan: Growth of M2+CD's



FOCUS ON JAPAN

Francesco Perugini

Japanese economy contracted whilst inflation is rising

The Japanese economy contracted by 0.3% in the July–September quarter from the previous quarter, according to government Cabinet Office first preliminary data released last month. Japan’s GDP was weaker than analysts had expected, coming after three quarters of moderate growth. Like many nations, Japan has suffered as the coronavirus pandemic slammed industrial production and tourism.

As for the demand components, private consumption, which accounts for more than half of GDP, rose 0.3%, marking the fourth consecutive quarterly increase. However, the figure was significantly lower than the 1.2% increase logged in the April–June period. Eateries and other such establishments in the hospitality sector did relatively brisk trade during the summer holidays when there were no COVID-19 restrictions, but the arrival of the seventh wave of the pandemic impacted businesses. The preliminary government report also indicates the recovery in economic activity from the pandemic has picked up, spurring investments in digitization and decarbonization, in addition to upgrades to production facilities that had previously been postponed. Business investment in plant and equipment rose 1.5%, marking the second consecutive quarterly increase. However, housing investment fell 0.4%, marking the fifth consecutive quarterly decline.

However, the negative growth was mainly due to a 5.2% increase in imports from the previous quarter. Exports also increased by 1.9%, but the net result pulled GDP down 0.7 percentage points. The growth was attributed to coal and oil import costs, as well as a concentration of payments from domestic companies to overseas advertising affiliates that handle such services as online advertising. The Cabinet Office said it was a temporary factor.

The Japanese yen’s fall against other currencies, especially the U.S. dollar had a severe impact. The Federal Reserve has been tightening the key interest rate, but the Bank of Japan has not. The differential in interest rates tends to boost the value of the currency of the nation with higher interest rates against the nation with zero or minus rates like Japan’s, through the resulting monetary capital flows. The US dollar, trading at about 115 Japanese yen a year ago, now costs 140 yen. Although the weak yen has generally tended to work as a boon for Japanese exporters

like automaker Toyota Motor Corp. and video game developer Nintendo Co., it also makes imports more expensive.

A weak yen is devastating for imports, especially for Japan, which imports almost all its oil, as well as much of its food. The war in Ukraine has also sent such prices higher. According to recent data released by the internal affairs ministry, Japan’s consumer price index excluding perishables hit 103.4 in October, up 3.6% year-on-year, the largest increase since February 1982. The rise was even sharper than those for periods impacted by hikes in the consumption tax rate. Prices of household durable goods jumped by 11.8% year-on-year, the largest increase since March 1975. Food prices, excluding perishables, increased by 5.9%, the highest rise since March 1981, while energy prices were up 15.2%. In contrast, prices of electricity and city gas soared by 20.9%.

However, core inflation — all items except energy and all food — is at less than half that rate: 1.5%. This means that virtually all of Japan’s inflation, as in the past three years, is due to price hikes in import-dominated items: food, energy, clothing, and footwear. It is certainly possible that, if imported inflation continues long enough, inflation could spread throughout the economy. So far, however, that has not happened, but it might change in the coming months as indicated by a recent Kyodo News survey, an important Japanese newspaper. It reports that nearly a quarter of major companies including Toyota Motor Corp, Nintendo Co and Shiseido Co Japan are considering raising the prices of their products next year or later due to increasing material costs and a weaker yen,

There is speculation that the latest data is likely to provoke some change in the Bank of Japan’s (BOJ) monetary stance, but the BOJ sees the recent price rises as temporary and says there is no reason to change course. Therefore, it is sticking to its view that the economy needs continued support, and that inflationary pressure needs solid wage growth to make price growth sustainable and beneficial for the economy. BOJ governor Haruhiko Kuroda recently said that hiking rates now would only cool growth and do little help to banks. “Rate hikes alone cannot fix the structural problems that plague Japan’s over-crowded banking sector, and that efforts to consolidate smaller banks should come first”, he said at a press conference. As a result, with inflation only at half its target rate, the BOJ will find it hard to justify raising rates now.

MARKET DEVELOPMENTS

We forecast falling inflation as commodity shocks unwind and the world economy reacts to sharply tighter money. Interest rates are likely to settle in the 3-4% range across developed countries including the UK. Once

this happens bonds will begin to offer good returns again. Meanwhile equities will recover as the recession now in progress turns into post-inflation recovery.

Table 1: Market Developments

	Market Levels		Prediction for Nov/Dec 2023	
	Nov 2	Dec 2	Previous Letter	Current View
Share Indices				
UK (FT 100)	7144	7556	7630	8070
US (S&P 500)	3837	4057	3994	4224
Germany (DAX 30)	13257	14529	17618	19310
Japan (Tokyo New)	1930	1954	2666	2698
Bond Yields (government)				
UK	3.47	3.15	3.20	3.20
US	4.19	3.49	3.50	3.50
Germany	2.25	1.86	2.20	2.20
Japan	0.25	0.26	0.30	0.30
UK Index Linked	0.12	0.12	1.00	1.00
Exchange Rates				
UK (\$ per £)	1.15	1.22	1.20	1.20
UK (trade weighted)	78.03	80.04	77.9	77.9
US (trade weighted)	112.63	109.30	113.2	113.2
Euro per \$	1.01	0.95	0.98	0.98
Euro per £	1.16	1.17	1.18	1.18
Japan (Yen per \$)	147.14	135.48	140.0	140.0
Short Term Interest Rates				
UK	0.63	0.63	3.00	3.00
US	4.46	4.63	4.00	4.00
Euro	1.61	1.90	2.60	2.60
Japan	-0.05	-0.05	0.10	0.10

Table 2: Prospective Yields¹

Equities: Contribution to £ yield of:						
	Dividend Yield	Real Growth	Inflation	Changing Dividend Yield	Currency	Total
UK	2.10	-0.2	4.0	3.00		8.90
US	2.00	0.2	3.9	0.00	1.77	7.87
Germany	2.10	-0.9	6.8	27.00	-0.82	34.18
Japan	1.90	1.5	1.6	35.00	-1.51	38.49
UK indexed ²	0.12		4.0	16.00		20.12
Hong Kong ³	2.60	3.0	3.9	-32.00	1.77	-20.73
Malaysia	3.30	5.4	3.9	58.00	1.77	72.37
Singapore	3.50	3.0	3.9	22.00	1.77	34.17
India	1.40	6.5	3.9	17.00	1.77	30.57
Korea	1.10	0.0	3.9	-41.00	1.77	-34.23
Indonesia	2.20	4.5	3.9	26.00	1.77	38.37
Taiwan	2.80	3.0	3.9	27.00	1.77	38.47
Thailand	3.20	2.5	3.9	23.00	1.77	34.37
Bonds: Contribution to £ yield of:						
	Redemption Yield	Changing Nominal Rates	Currency	Total		
UK	3.15	-0.53		2.62		
US	3.49	-0.08	1.77	5.18		
Germany	1.86	-3.45	-0.82	-2.42		
Japan	0.26	-0.45	-1.51	-1.17		
Deposits: Contribution to £ yield of:						
	Deposit Yield	Currency	Total			
UK	0.63		0.63			
US	4.63	1.77	6.40			
Euro	1.90	-0.82	1.08			
Japan	-0.05	-1.51	-1.56			

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

INDICATORS AND MARKET ANALYSIS

FOREIGN EXCHANGE MARKETS

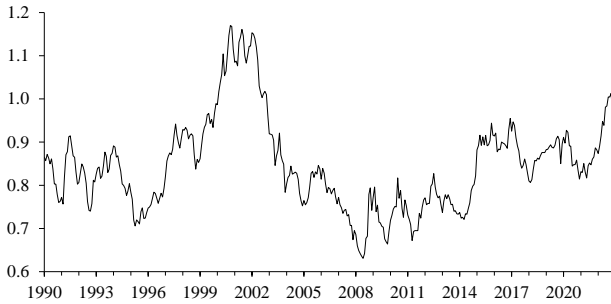
**US : Trade Weighted Index
(Bank of England 1990 = 100)**



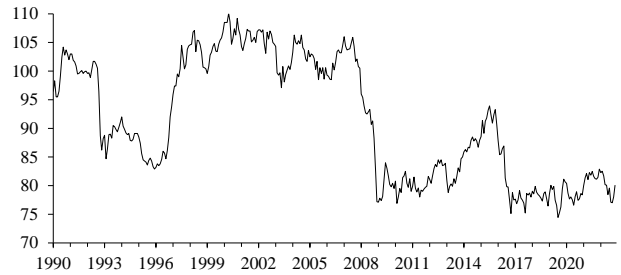
UK: Dollars Per Pound Sterling



Euro per US dollar



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



Japan : Yen Per U.S. Dollar

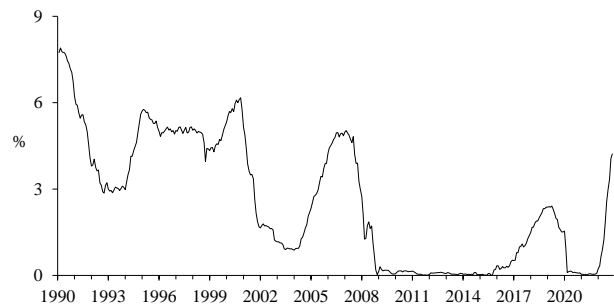


GOVERNMENT BOND MARKETS

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



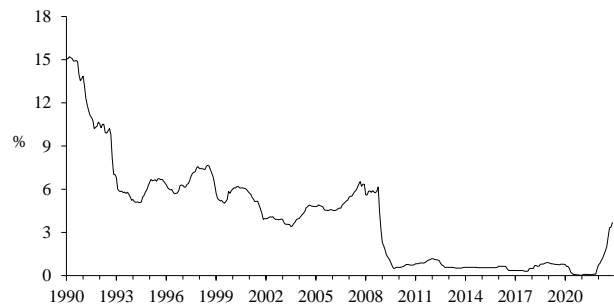
U.S. : 3-Month Treasury Bill



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



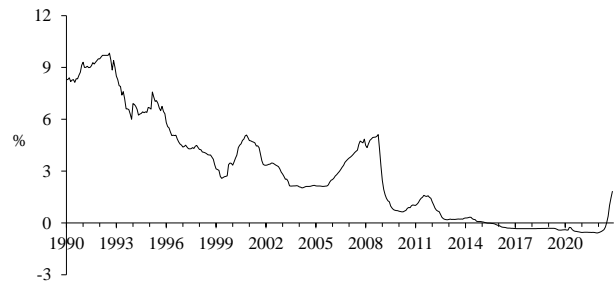
U.K. : 3-Month Certificate LIBOR Rate



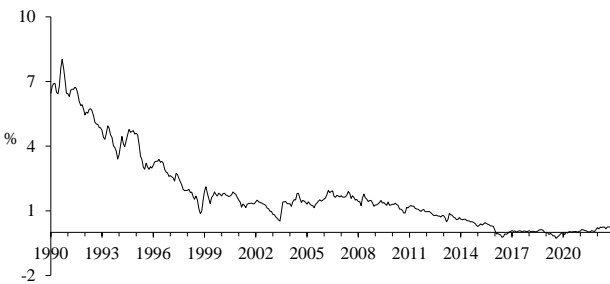
Germany: Yield on Public Authority Bonds



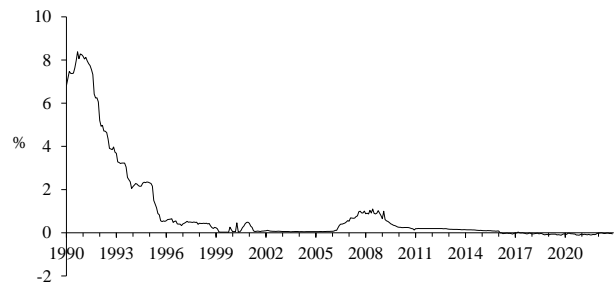
Germany : 3-Month Interbank Deposit Rate



Japan: Yield on Long-Term Government Bonds

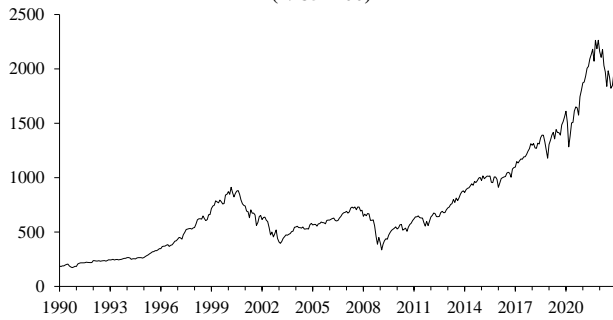


Japan : 3-Month Money Market Rate



MAJOR EQUITY MARKETS

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



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



Germany : DAX 30



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



EMERGING MARKETS

Anupam Rastogi

India

India has emerged as “a bright light” when the world is facing imminent recession prospects, says the IMF chief economist Pierre-Olivier Gourinchas. There is so much euphoria around that some predict potential growth ascending to 7.6% by 2026 and peaking around 8.5% in the early 2030s. We are not that optimistic and maintain our GDP growth forecast of 6.5% for the next three years. The Indian economy will face consequences of world trade slowing down. Slowing global growth in the wake of rapid monetary tightening, ongoing geopolitical tensions, and China’s slowdown is likely to weigh on domestic growth via the trade channel. India’s second quarter GDP (Q2FY23) growth at 6.3% suggests that household consumption and government expenditure are holding the economic growth well. Falling commodity prices bode well for the manufacturing sector. The services sector, including the three segments — trade, hotel, transports; financial, real estate; and public administration and other services — was the key growth driver with a 9.3% increase during the quarter.

India’s central government is now spending almost 20% of its budget on capital investments. Between 2011 and 2020, that figure was less than 15%. Most of the expenditure is on physical infrastructure, which will help businesses in the future.

Finance Minister Nirmala Sitharaman had announced that India would aim to narrow the fiscal gap to 6.4% of GDP from 6.7% in the last financial year. Thanks to buoyant indirect tax collections called Goods and Services Tax, the government can spend money on infrastructure projects and narrow the fiscal gap.

The Finance Ministry expects net direct and indirect tax collections combined to exceed budget targets by Rs4.5 trillion. This boost may still enable it to meet the fiscal deficit target for FY23 of 6.4% of GDP, despite an increase in expenditure front due to subsidies.

India Manufacturing Purchasing Managers Index for November shows strong demand, with companies reporting the quickest increase in new orders and production in three months. India’s manufacturing PMI came in at a robust 55.7 in November, up from 55.3 in October, indicating that manufacturing momentum increased during the month. The services sector PMI rose to 56.4 in November from 55.1 in October, as the new orders placed with service providers in India rose for the sixteenth month. Data shows that sales were boosted by favourable underlying demand and fruitful advertising. That indicates that demand has been sustained even after the festive Diwali season.

India: BSE Sensex



India’s retail inflation cooled to 6.7% in October from September’s five-month high of 7.41% due to a favourable base effect in food prices and crude oil prices remaining stable. Despite the moderation, inflation was still high due to the impact of unseasonal rains on food prices. The December meeting of the monetary policy committee of the Reserve Bank of India raised the repo rate by 35 basis points to 6.25% and committed to bring down inflation further. The central bank remains confident about the rupee being stable even though it wants the currency to find its own equilibrium price without intervention.

India’s October trade deficit widens to \$26.9 billion as exports decline 17%. Exports in October 2021 stood at \$35.7 billion. Merchandise imports slumped to \$56.7 billion from \$61.2 billion in the same period. Imports in October 2021 stood at \$53.6 billion. India’s overall exports in April–October 2022 are estimated to be \$444.74 billion, exhibiting a growth of 19.6% over the same period last year. Overall imports in for the same period are estimated to be \$543.3 Billion, showing a positive increase of 33.8% over the previous year.

India is working hard to achieve \$1 trillion of manufacturing exports by 2028. Under the new trade policy ‘friend shoring’, the US is proactively deepening economic integration with trusted trading partners. India and Vietnam have been trying to lure investment from China using production-linked incentives (PLI). The government is banking on PLI schemes as tools to make the Indian economy more export-driven and more interlinked in global supply chains.

A new trade deal with Australia could help India pave the way to a reduced reliance on China for critical minerals while also providing the Oceanic country with an emerging market for its wine exports, which plummeted following Canberra’s trade dispute with Beijing. Ratified by Canberra last week after being signed in April, the Australia-India Economic Cooperation and Trade Agreement (ETCA) is poised to eliminate tariffs on more than 90% of Australian goods exported to India by value, including seafood, barley

and sheep meat. India would substantially reduce its 150% tariff on bottled Australian wine above US\$5.

In November, the S&P BSE Sensex and the Nifty 50 indices gained 4% from January 1 and remained relative outperformers in the global context. The Sensex will be on course for the seventh annual advance (calendar year). What helped the Indian market post a smart recovery is strong corporate earnings growth. India was among the few countries to return quickly from the pandemic-induced crisis. Also, a global supply chain crisis helped Indian companies capitalize on alternative production sites' opportunities. A crisis in China resulted in buyers looking for alternative sources of goods. Indian companies swiftly seized the opportunity to fill the gap.

Besides a strong economy, investors' interest in Indian markets remained strong. After record selling by foreign investors in the first half of 2022, the tide has reversed. Foreign investors are reposing faith in Indian equities, turning aggressive buyers as the rupee stabilized and inflation showed signs of peaking. Foreign portfolio investment touched ~\$3.8 billion by mid-November, the highest since January 2022.

	20-21	21-22	22-23	23-24	24-25
GDP (%p.a.)	-6.6	8.7	6.5	6.5	6.5
WPI (%p.a.)	5.5	6.0	6.5	5.3	5.0
Current A/c(US\$ bill.)	35.0	-42.0	-100.0	-90.0	-80.0
Rs./\$(nom.)	75.0	74.5	81.0	83.0	85.0

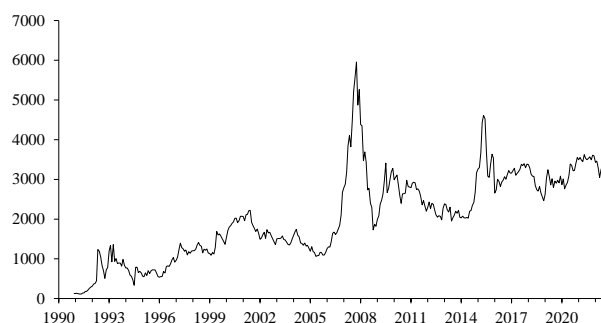
China

China rolled back its tough Covid rules in the first week of December, after the restrictions sparked popular unrest and hammered the economy. Relaxations include home quarantine, shorter lockdowns, no mass testing and scrapping of 'health codes'.

China is passing through one of the cathartic political crises, and some political commentators believe that it is the beginning of the end of the communist regime in China. For the time being, China is going through painful existence with the Covid-19 virus. The leadership is to explain to its citizens how a 'modified' social contract they have with the communist party will work. China was projected as a model of authoritarian efficiency. But the citizens are experiencing the combination of a slowing economy, lockdowns and seeing crowds gathered for the World Cup. It led many people to ask: Why can't life return to normal in China? Why does China need mass testing, lockdowns and closed borders to suppress outbreaks? The broad support for "zero Covid" just evaporated among citizens and the ruling class. The ruling Chinese Communist Party's response — zero Covid — to Covid-19 as proof of its superior governance model is in tatters.

In many ways, China's zero Covid policy is inexplicable and understandable. It is puzzling because it was irrational, unscientific, and not proportionate to the number of deaths

China: SSE Composite Index



China was seeing (even now). Yet, it is understandable, given concerns over Chinese vaccines and vaccine hesitancy among the older population.

The Chinese capital will allow some virus-infected people to isolate at home, starting with residents of Beijing's most-populous district. It's a landmark shift that reflects the pressure officials are under from a record outbreak and public opposition to zero Covid.

Beijing residents cheered the removal of testing booths, while Shenzhen said it would no longer require commuters to present test results to travel. It would be a significant change from locking down entire communities, sometimes for weeks. The party's leadership is unlikely to signal a lifting of its pandemic precautions just yet, and one forecast suggests China won't fully reopen until the middle of next year. China's top leaders will likely signal a more pragmatic approach toward Covid controls at a critical meeting while focusing more on boosting economic growth. The 24-member Politburo usually convenes in early December to set broad guidelines for economic policy.

Here comes the catch and its economic impact. Lifting the zero Covid policy could put 1.3 million to 2.1 million lives at risk, according to a recent analysis by life-science research firm Airfinity. The projection used Hong Kong, where an outbreak earlier this year killed thousands, as a proxy. Public-health officials familiar with the matter said China is planning a vaccination campaign to inoculate 90% of people aged 80 and above with at least one shot by the end of January. Only 77% of this cohort is vaccinated as of now.

The Chinese government will have to balance two potential sources of unrest: overloaded hospitals — already crowded on a typical day — and strict lockdowns. A shrouded problem in China is that China largely depends on homegrown vaccines and hasn't approved foreign-developed mRNA vaccines. While authorities were busy conducting mass tests and building quarantine centres, China's vaccine drive stalled. According to government data, fewer than 60% of Chinese have had a booster shot, including 40% of those aged 80 and older. Hence, even if China ramps its vaccine drive, it will take at least several

months to raise the vaccination rate for those 80 and older above 90%. With virus outbreaks setting records and protesters taking to the streets to denounce Covid-19 controls, China isn't any better prepared for a severe healthcare emergency than it was three years ago. So much for the 'zero Covid' policy and China's superior governance model.

The protests are unlikely to translate into a leadership change, in the near term at least. Beijing has lifted many restrictions and risk a significant and potentially deadly wave of Covid infections is expected. A harsh retaliation against select protesters is not ruled out.

China's economy grew just 3% during the first nine months of the year, and we expect it to grow by around 3% this year and the following year. With restrictions being imposed by the US, 'friend-shoring' by the US and the demographic changes underway in China, we predict a growth of only around 4% in the long run. The government is now running its biggest fiscal deficit in years, and excessive geopolitical tension will hamper the upgrade of China's industrial tech sector.

The official manufacturing PMI fell to a worse-than-expected 48, the lowest reading since April. The services index declined to 46.7 from 48.7 in October. Gauges of activity in Chinese manufacturing, services and construction deteriorated by more than expected in November.

Chinese consumer inflation slowed more than expected in October due to a resurgence in COVID-19 cases. The consumer price index (CPI) rose at an annualized 2.1% in October, lower than expectations of 2.4% and well below September's reading of 2.8%. Factory gate inflation, or the producer price index, fell 1.3% in the month. The figure turned negative for the first time in a year, mirroring a sluggish economic environment.

The Peoples Bank of China (PBOC) Governor Yi Gang said the central bank is now centred on economic growth following a slump in activity because of Covid controls. "Our focus is growth right now". He expects inflation to remain in a "moderate range" in 2023.

The central bank has cut the average reserve requirement ratio across all banks to 7.8% from December 5. The PBOC last lowered the ratio in April, when its economy was similarly under strain during a two-month lockdown in Shanghai. It will inject 850 billion yuan (\$120.16 billion) of liquidity via the one-year medium-term lending facility at an interest rate of 2.75%.

Exports from China declined 0.3% in October compared with a year earlier. It was well below the 4% increase expected in a poll of economists.

Korea: Composite Index



US Trade Representative Katherine Tai met with Chinese Commerce Minister Wang Wentao to discuss trade issues in Ms Tai's first face-to-face meeting with a senior Chinese official since taking office in 2021. It came on the heels of President Biden's meeting with Chinese President Xi Jinping in Bali, in which the two leaders agreed to maintain communication between key senior officials to discuss global and bilateral issues. Trade relations between the two nations have been strained after China failed to meet its critical commitments under a bilateral trade deal signed by former President Donald Trump that expired in December 2021.

China's CSI 300 index has lost more than 20% over the past year. Earnings per share for MSCI China have been flat since 2010 despite robust economic growth. Over the same period, earnings per share for the MSCI USA Index has grown 9% per annum. Chinese shares rebounded in November. The twin protests over labour conditions and Covid-19 policies that erupted in November represent a serious challenge to two key assumptions. First, companies can count on a fundamental level of political stability when investing in China. Second, workers won't push labour actions too far for fear of state reprisals. Hence, China's political risk is probably here to stay, influencing how even foreign companies operate in China.

	20	21	22	23	24
GDP (%p.a.)	2.2	8.1	3.0	3.0	4.0
Inflation (%p.a.)	2.5	1.8	2.5	2.5	1.5
Trade Balance(US\$ bill.)	60.0	80.0	150.0	82.0	80.0
Rmb/\$ (nom.)	6.7	6.4	6.8	7.2	7.3

South Korea

South Korea's economy is facing headwinds due to a slowdown in China and demand compression in its export markets. GDP growth is expected to grow 2% in 2022 and stand still in 2023. The multilateral agencies such as OECD, ADB and IMF's GDP forecasts for the Korean economy are 2.0 to 2.1%. However, they expect a bounce back in 2024. Our cautious growth forecast is based on the expected mild recession in developed countries and structural demographic changes in Korea.

The government has proposed a fiscal rule limiting the budget deficit (excluding social security) to 3% of GDP. In

line with this target, its 2023 budget would reduce the deficit from 5.1% of GDP in 2022 to 2.6% in 2023, primarily by scaling back support introduced during the pandemic. The OECD projects that such policies will help cut headline consumer price inflation to 2.3% in 2024 and reduce gross government debt to below 50%

South Korea’s consumer prices rose 5% in November from a year earlier. The country’s inflation rate has been falling since hitting a 24-year high of 6.3% in July as global energy prices eased and the economy slowed. We expect inflation to average 5% in 2022 and decline to 3.5% in 2023.

Since August last year, the Bank of Korea (BOK) has raised its policy interest rate by a total of 275 basis points to 3.25%, a decade high, in its most aggressive tightening cycle to fight inflation. We expect it to adjust the pace of interest rate hikes in line with the US Fed’s rate hikes.

The government and the BOK jointly pledged at least 50 trillion won (\$37 billion) in credit support in November. South Korea’s central bank has eased the pace of interest rate increases to curb high inflation, lowering its 2023 growth and inflation forecasts.

South Korea’s exports fell the most in two-and-a-half years in November, dragged down by an economic slowdown in China and cooling demand for semiconductors. The exports clocked 14% year on year in November, the most in two and a half years, hit by China’s slowing growth and cooling chip demand.

South Korea’s won bounced back from a 13-year low to become Asia’s best-performing currency in November when it appreciated 6% against the dollar. The won may stabilize and appreciate a little as oil prices will likely stabilize after winter. It should narrow the trade deficit, while the Fed is expected to halt policy tightening next year.

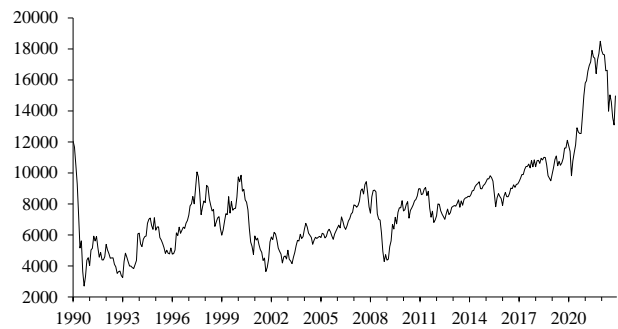
South Korea’s benchmark KOSPI index has lost about 17% in 2022. In the last five years, foreign ownership of Korean stocks reached its lowest level since 2009, but inflows of about \$6 billion since end-June “indicate a turn in foreign interest” that could lift the market further.

	20	21	22	23	24
GDP (%p.a.)	-0.9	4.1	2.0	0.0	2.3
Inflation (%p.a.)	0.5	2.5	5.0	3.5	3.0
Current A/c(US\$ bill.)	70.0	91.0	50.0	40.0	35.0
Won/\$(nom.)	1070	1150	1450	1350	1400

Taiwan

The slowdown in China directly impacts Taiwan’s economic growth rate in 2022 and the long-term future of the island economy. Taiwan’s economy will grow more slowly than previously forecast this year and next. We expect GDP to grow by 3% in 2022 and 2.4% in 2023. As semi conductor’s capacity in other countries goes on stream from 2025 onwards, GDP growth in Taiwan will settle down to around 2%.

Taiwan: Weighted TAIEX Price Index



The central bank has set an inflation target of 2% to keep consumer prices low and stable. We expect the consumer price index (CPI) to grow 2.9% this year and will be in the target range in 2023.

Trade has fallen off in recent months, with exports contracting for the second consecutive month in October as the global slowdown intensified, similar to South Korea’s dismal trade figures. However, exports from Taiwan to the US, Japan and elsewhere have offset waning demand from China. The central agency expects 2022 exports to grow 8.73% compared to last year, with 13.51% predicted earlier. The strong demand of the first half of 2022 would compensate for the weakening demand in the second half.

Taiwan dollar’s biggest rally in almost a quarter of a century is set to unwind as a looming global recession cuts into the island’s technology exports.

The currency, which has risen more than 4% this month to 30.90 per US dollar, will probably weaken to about 33 by the end of the first quarter of 2023. We expect the Taiwan dollar to revert to the 32–33 level in the medium term as the recession will dampen demand for Taiwan’s electronic exports. The central bank’s rate-hike pace will also lag behind the US Federal Reserve’s rate-hike cycle, and the currency will stay soft compared to its peers.

A brutal defeat for Taiwan’s ruling party in local elections in November could reduce the chances of military conflict with China. Voters handed a rebuke to the ruling Democratic Progressive Party (DPP) with decisive results that led Taiwan President Tsai Ing-wen to resign as party leader. The opposition Nationalist Party, seen as more friendly toward Beijing, scored big wins in many mayoral races across Taiwan. In our opinion, local elections in Taiwan are traditionally focused on bread-and-butter issues. The DPP’s poor performance had more to do with domestic headaches, such as delays in reopening after Covid-19 and other pandemic restrictions that hurt the service sector, rather than the self-ruled island’s fraught relationship with China. In the presidential elections in 2024, the DPP will win again.

Nevertheless, Taiwan is set for a contentious presidential race in 2024 focused on rising tensions with China. The

opposition Kuomintang, which favours eventual unification with China, will stand in the presidential race.

Taiwan said it would defend itself and strike back against Chinese military incursions into its territorial waters and airspace. This powerful warning comes as Beijing steps up drills and patrols around the self-ruled island. General Lin said Taiwan's military would also countermeasures against Chinese drones deemed a security threat if they fail to leave after warnings. The army had fired shots at a Chinese drone that buzzed an outlying Taiwanese island. The US aims to bolster Taiwan's defences with more than \$1 billion in new weapons and military logistics amid rising tensions with China.

	20	21	22	23	24
GDP (%p.a.)	3.1	6.5	3.0	2.4	2.4
Inflation (%p.a.)	-1.0	2.0	2.9	2.0	1.6
Current A/c(US\$ bill.)	71.0	90.0	90.0	65.0	60.0
NT\$/\$(nom.)	29.0	27.5	32.0	32.5	32.5

Brazil

President-elect Lula will face a tough time on the economic front, and many of his expenditure promises may not see the light of day. Brazil's Economy Ministry has trimmed its 2023 GDP growth forecast to 2.1%, from the 2.5% anticipated in September, due to a deterioration in the global economic outlook. Furthermore, the ministry expects GDP to grow between 1.4% to 2.9% due to structural changes in the recent past. A few analysts expect the South American countries Brazil, Chile, Colombia and Mexico to enter a synchronized mild recession in 2023. But because these countries are further ahead on the tightening cycle than other economies, they will cut interest rates sooner than their peers. A lowering of rates is expected in the second half of 2023. We expect Brazil's GDP to grow 2% in 2022 and stand still in 2023.

Brazil's consumer prices rose 6.5% in the 12 months through October, down from a peak of 12% in April. It is well above the central bank's targets of 3.25% for next year and 3% for 2024. Brazil's central bank chief Roberto Campos Neto is determined to combat inflation as the incoming government advances plans to add billions of dollars to public spending in 2023. The regime change will

Brazil: Bovespa



pressure the central bank to manage the monetary policy, but the central bank chief Roberto Campos Neto is determined to bring inflation within the bank's target.

Brazil's central bank kept its benchmark interest rate at a cycle-high of 13.75%, stressing heightened worries over new government plans to boost social spending. The bank's rate-setting committee, known as Copom, has maintained a hawkish stance that could stoke divisions with the incoming administration by leading to a tighter policy in 2023 than previously thought.

Brazil's trade surplus narrowed slightly in October from September as exports fell more than imports. The country recorded a surplus of \$3.9 billion in October after a surplus of \$4 billion in September. Brazilian exports fell to \$27.3 billion in October from \$29 billion in September, while imports declined to \$23.4 billion from \$25 billion.

Uncertainty about Lula's cabinet picks and fiscal policy upset Brazilian assets, with the currency shedding 3.5%. According to the central bank data, amid high borrowing costs and aggressive monetary tightening, a broad measure of Brazilian consumer and business credit default ratios rose in October to its highest level in almost four years. The USD/BRL is trading around 5.22, and we expect the rate to average 5.2 and gradually appreciate to 5 next year as the US dollar index depreciates slightly.

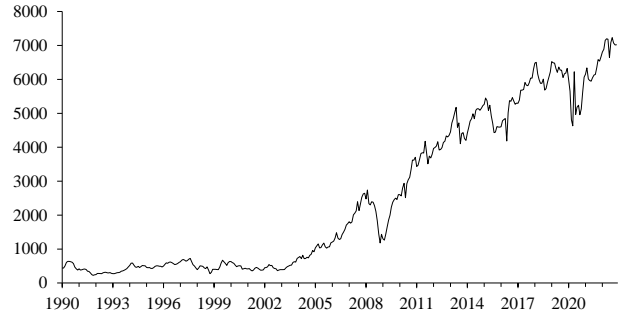
	20	21	22	23	24
GDP (%p.a.)	-3.9	4.6	2.0	0.0	2.0
Inflation (%p.a.)	4.5	8.5	8.0	5.5	4.0
Current A/c(US\$ bill.)	-7.6	-10.0	-10.0	-12.0	-20.0
Real\$/\$(nom.)	5.5	5.3	5.2	5.0	5.0

Other Emerging Markets

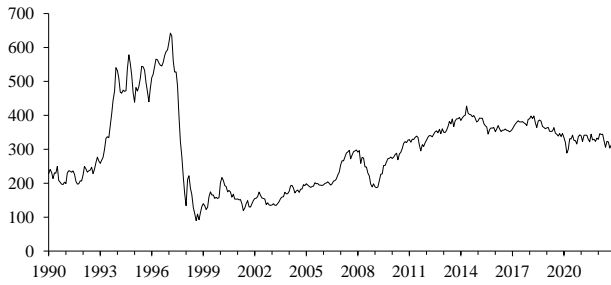
Hong Kong: FT-Actuaries



Indonesia: Jakarta Composite



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



Thailand: Composite Index



Singapore: Straits Times Index



Philippines: Manila Composite

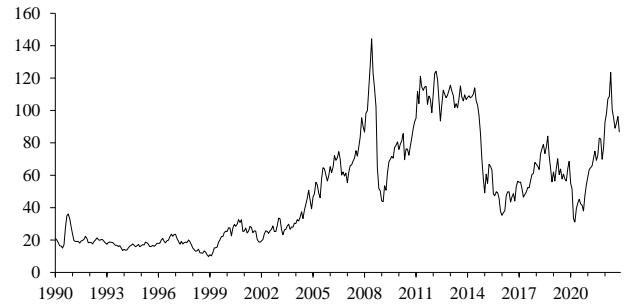


COMMODITY MARKETS

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



Oil Price: North Sea Brent (in Dollars)



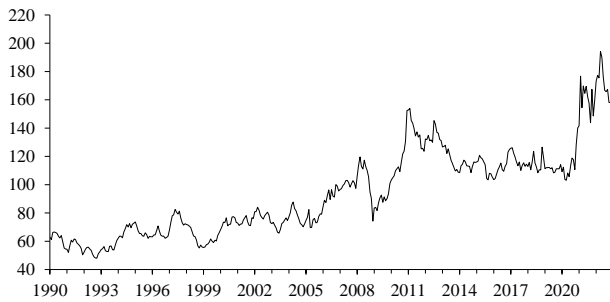
Commodity Price Index (Sterling)
(Economist, 2015 = 100)



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
2019	1.7	0.6	0.8	78.3	73.8	-0.7	2.6	-0.5
2020	1.0	0.1	0.2	78.2	72.9	-1.3	1.5	-1.4
2021	2.5	0.4	0.1	81.5	78.2	-6.3	4.1	-5.7
2022	8.9	2.3	1.8	79.4	82.4	-5.3	11.4	-4.8
2023	5.0	3.1	3.0	78.1	83.6	-0.6	8.2	-0.5
2024	3.2	3.0	3.0	77.9	85.2	0.6	4.9	0.6
2021:1	0.9	0.6	0.1	80.7	76.2	-3.6	1.4	-3.1
2021:2	2.1	0.9	0.1	81.7	77.6	-5.0	3.4	-4.2
2021:3	2.7	0.7	0.1	81.8	78.7	-6.5	4.5	-5.9
2021:4	4.4	0.9	0.2	81.5	79.7	-7.5	6.9	-6.8
2022:1	6.2	1.4	0.8	81.7	81.9	-8.2	8.4	-7.6
2022:2	9.2	2.1	1.4	79.3	81.8	-6.6	11.5	-5.9
2022:3	10.1	2.8	2.0	77.9	81.7	-4.5	12.4	-3.7
2022:4	10.1	3.0	3.0	78.8	84.1	-2.0	13.1	-2.0
2023:1	6.5	3.0	3.0	77.7	81.1	-1.2	11.0	-1.2
2023:2	5.4	3.1	3.0	77.5	82.6	-0.7	9.0	-0.6
2023:3	4.0	3.2	3.0	77.9	83.7	-0.4	6.4	-0.2
2023:4	4.0	3.2	3.0	79.2	87.0	-0.2	6.0	0.0

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)
2019	275.7	3.5	3.8	1.0	148.8
2020	279.1	1.6	4.5	1.3	149.7
2021	295.0	5.8	4.5	1.3	154.5
2022	314.5	5.8	3.6	1.0	151.0
2023	327.5	4.5	3.5	0.9	149.6
2024	338.9	3.2	2.8	0.7	150.0
2021:1	292.1	4.4	4.9	1.5	155.3
2021:2	289.6	7.2	4.7	1.4	153.4
2021:3	298.3	7.1	4.3	1.3	155.5
2021:4	299.8	4.0	4.1	1.2	153.6
2022:1	308.5	5.6	3.7	1.0	155.5
2022:2	307.5	6.2	3.8	1.1	150.7
2022:3	315.5	5.8	3.7	0.9	149.8
2022:4	317.2	5.8	3.7	0.9	147.8
2023:1	323.9	5.0	3.8	1.0	151.5
2023:2	321.0	4.4	3.6	1.0	149.2
2023:3	329.3	4.4	3.4	0.9	150.4
2023:4	329.9	4.0	3.2	0.9	147.4

¹ Whole Economy

² Average Earnings

³ Wage rate deflated by CPI

Estimates and Projections of the Gross Domestic Product¹ (£ Million 1990 Prices)

	Expenditure Index	£ Million '90 prices	Non-Durable Consumption ²	Private Sector Gross Investment Expenditure ³	Public Authority Expenditure ⁴	Net Exports ⁵	AFC
2019	167.8	803514.3	475369.3	308458.5	209136.4	-70959.7	118490.2
2020	149.3	715006.3	427575.8	246057.9	199232.3	-33095.4	124764.3
2021	160.5	768793.3	450341.3	280156.7	208540.0	-36924.4	133320.2
2022	167.9	803906.7	473783.5	275003.3	218570.5	-23805.2	139645.1
2023	167.5	802137.7	475227.7	259739.4	225319.8	-18605.7	139543.5
2024	171.0	818787.7	489583.1	255476.5	232155.8	-15890.2	142537.6
2019/18	1.4		0.3	3.1	3.0		3.0
2020/19	-11.0		-10.0	-20.8	-4.8		4.9
2021/20	7.5		6.4	16.8	5.2		7.2
2022/21	4.6		5.4	-1.0	4.8		4.7
2023/22	-0.2		0.3	-5.6	3.1		-0.1
2024/23	2.1		3.0	-1.5	3.0		2.7
2021:1	151.5	181382.2	104673.5	64909.8	51080.6	-7817.8	31463.9
2021:2	160.8	192546.3	112096.6	63123.7	51382.5	-662.5	33394.0
2021:3	163.2	195423.4	116099.6	74733.3	52897.8	-14444.1	33863.2
2021:4	166.6	199441.4	117471.6	77389.9	53179.1	-14000.1	34599.1
2022:1	168.0	201169.5	118189.6	73166.3	53945.4	-9205.0	34926.8
2022:2	167.9	201024.3	118323.4	65976.9	54465.5	-2828.3	34913.2
2022:3	167.8	200923.2	118433.8	68620.1	54874.0	-6098.9	34905.8
2022:4	167.7	200789.7	118836.6	67240.0	55285.5	-5673.1	34899.3
2023:1	167.5	200544.9	118824.7	72117.9	55700.2	-11225.5	34872.4
2023:2	167.3	200293.2	118812.9	62928.0	56117.9	-2725.5	34840.1
2023:3	167.5	200534.2	118801.0	62334.6	56538.8	-2249.0	34891.2
2023:4	167.7	200765.4	118789.1	62358.9	56962.9	-2405.7	34939.8

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)
2019	2.8	2316.4	64.3	-63.3
2020	15.7	2076.8	312.5	-67.5
2021	5.6	2421.9	133.3	-45.6
2022	4.7	2685.5	72.3	-97.2
2023	4.5	2800.8	45.5	-24.2
2024	0.9	2976.7	26.8	-14.7
2021:1	7.8	540.3	42.3	-12.3
2021:2	10.4	576.6	60.1	-6.9
2021:3	6.2	595.3	37.2	-23.1
2021:4	4.7	616.9	29.1	-3.2
2022:1	1.1	633.2	6.8	-43.9
2022:2	6.4	650.8	41.8	-33.8
2022:3	1.6	667.8	10.7	-10.1
2022:4	1.5	693.3	11.2	-9.5
2023:1	1.3	673.6	8.6	-9.6
2023:2	2.0	684.4	14.0	-9.8
2023:3	1.7	693.7	11.8	-3.3
2023:4	1.4	721.5	10.2	-1.5

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	1.7	0.2	1.6
U.K.	1.4	-9.4	7.5	4.6	-0.2	2.1
Japan	-0.4	-4.6	1.7	1.5	1.5	1.2
Germany	1.1	-3.7	2.6	1.4	-0.9	1.5
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	1.2	4.7	8.0	3.9	2.4
U.K.	1.7	1.0	2.5	8.9	5.0	3.2
Japan	0.5	0.0	-0.2	2.2	1.6	0.7
Germany	1.4	0.5	3.1	8.1	6.8	2.5
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.	0.3	-4.6	-7.1	-1.6	0.2	0.6
U.K.	-0.7	-1.3	-5.8	-5.3	-0.6	0.6
Japan	0.1	0.3	-2.9	-0.9	-0.6	-0.8
Germany	-0.9	-3.6	-6.0	-2.6	-2.3	0.6
France	-0.9	-2.2	-5.1	-1.4	-1.6	0.5
Italy	-0.3	-2.4	-5.2	-1.2	-1.4	0.5

Nominal Short-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	1.5	0.4	0.1	2.2	3.5	3.0
U.K.	0.8	0.2	0.1	1.8	3.0	3.0
Japan	0.1	0.1	0.1	0.0	0.1	0.1
Germany	-0.4	-0.5	-0.6	0.3	2.4	2.5
France	-0.4	-0.5	-0.6	0.3	2.4	2.5
Italy	-0.4	-0.5	-0.6	0.3	2.4	2.5

Real Long-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	-1.8	-3.1	-2.2	1.2	1.2	1.0
U.K.	-0.4	-1.4	-5.7	-4.8	-0.5	0.6
Japan	-0.6	-0.8	-1.1	-0.8	-0.5	-0.5
Germany	-3.1	-3.8	-4.8	-1.0	0.0	0.1
France	-2.2	-1.9	-1.8	-0.4	0.0	0.4
Italy	-0.4	-1.5	-1.0	1.2	1.6	1.9

Nominal Long-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	1.9	0.9	1.6	3.8	3.5	3.3
U.K.	0.6	0.1	0.4	2.3	3.1	3.0
Japan	0.0	0.0	0.1	0.2	0.3	0.4
Germany	-0.2	-0.6	-0.2	2.1	2.2	2.2
France	0.1	-0.3	0.2	1.8	2.7	2.6
Italy	1.4	0.5	1.2	3.0	4.2	4.1

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	103.4	109.0	110.6	110.4
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

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

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.