

# LIVERPOOL INVESTMENT LETTER

November 2018



Cardiff Business School  

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Ysgol Busnes Caerdydd

**Julian Hodge Institute of Applied Macroeconomics**

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**LIVERPOOL RESEARCH GROUP IN MACROECONOMICS**

## LIVERPOOL RESEARCH GROUP IN MACROECONOMICS

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

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

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<p>The Brexit negotiations are at an impasse over the Irish border. Since neither side would erect a hard Irish border, this issue can be resolved if there is the will to find agreement on the substantive issue which is the nature of a trade deal. On this if Mrs May continues to press her Chequers proposals she looks certain to be outvoted in the Commons; if she pivots to Canada+, then she has a good chance of getting enough votes. But no trade deal is the default option if no proposed deal passes the Commons. As we explain, it is a good one and the Treasury's latest Project Fear about it is absurdly wrong.</p>	
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## THE UK OUTLOOK UNDER NO EU TRADE DEAL

There is an impasse in the negotiations with the EU. Even if this is broken, the chances are that Mrs. May's Chequers proposals will not get passed by Parliament; many Eurosceptic Tory MPs are committed to voting against them and it appears less than 20 Labour MPs are willing to vote for them. Mrs. May has a better chance if she 'pivots' to Canada+ proposals but she has little time to do that, having dug in behind Chequers. If somehow, she did so pivot and bring these to the House, she might well succeed in getting them through. The dozen or so hard Remainer Tories would probably so dislike the alternative 'no (trade) deal' scenario that in the end most would vote for the government, while a few Labour Leavers would also probably do so.

We have set out the prospects under a Canada+ deal before. In the short run, given there is a transition to end 2020, we would have the status quo; but allied to expectations on new FTAs around the world, UK-based regulation and an end to uncontrolled EU unskilled migration. All this would boost the economy, not just in the longer run but also in the near term.

However, if Mrs. May sticks with Chequers, then there will very probably be no trade deal, the default if Parliament votes down Chequers.

In this case we should expect that all the other elements in the Withdrawal Agreement, which it seems have been pretty much agreed, would be put into action by executive order on the basis of inter-governmental agreement. Alternatively, a Withdrawal Agreement shorn of its trade element could be rushed through the House.

But what would the no trade deal part do to the economy in the short run?

According to the Treasury there would be severe disruption with the EU border being subject to long delays as new inspections were brought in and also problems with standards not being recognised as being met by UK goods. However, these actions would be quite illegal under international law and would open up the EU or the governments that sponsored them to court actions not merely by the UK in the WTO but also by European and UK firms in the European law courts and ultimately the ECJ. This illegality stems from WTO rules on discrimination in standards and on technical discharge of border activity, requiring a 'seamless' border. EU and UK standards are currently the same, so plainly exporters on both sides satisfy required standards. The seamless border already occurs for non-EU trade and once the UK is out must similarly occur for UK-EU trade. Typically for developed countries 98% of traffic crosses borders without any border inspection, having been pre-cleared online; the other 2% is inspected and goes through within 24 hours.

**Table 1: Summary of Forecast**

	2016	2017	2018	2019	2020	2021	2022
GDP Growth <sup>1</sup>	1.9	1.8	1.5	1.9	2.0	2.1	2.3
Inflation CPI	1.1	2.6	2.5	2.2	2.0	2.0	2.0
Wage Growth	2.4	2.9	2.7	2.4	1.7	2.4	2.3
Unemployment (Mill.) <sup>2</sup>	0.8	0.8	0.8	0.8	0.7	0.7	0.6
Exchange Rate <sup>3</sup>	82.1	77.4	77.4	76.2	75.4	75.5	75.2
3 Month Interest Rate	0.5	0.4	0.6	1.1	2.4	3.1	3.1
5 Year Interest Rate	0.7	0.6	1.5	2.5	3.4	2.9	2.6
Current Balance (£bn)	-90.9	-66.3	-60.3	-49.5	-39.7	-31.0	-17.9
PSBR (£bn)	45.1	39.4	30.7	21.8	5.6	-6.7	-15.1

<sup>1</sup>Expenditure estimate at factor cost

<sup>2</sup>U.K. Wholly unemployed excluding school leavers (new basis)

<sup>3</sup>Sterling effective exchange rate, Bank of England Index (2005 = 100)

A good example of how this illusion of disruption has been created was President Macron's recent assertion that the port of Calais would materially slow down the border process. This assertion was immediately shot down by the President of the Calais region as absurd and not to be permitted by the region, as it would constitute its economic suicide. This highlights how ports are a business, indeed a vital one for their economies, and these businesses would not tolerate illegal actions that imperil their viability.

To all this some say that the WTO is under attack on all sides, for example by President Trump. But this is first to misunderstand totally how international law works inside the EU itself. WTO rules are embedded already in EU domestic law as lower level mandated procedures to be followed by customs and trading businesses. Secondly, the current tariff wars between Trump, China and the EU have nothing to do with the rules on borders and standards, which are not being challenged. Rather these are tariff threats that can be carried out under various WTO exceptions such as for national security or anti-dumping or within FTAs such as NAFTA or simply as MFN tariffs that are general but exempted for some under FTAs. The general business of the WTO continues unchanged; indeed, for example WTO judgements on Airbus are still pending and its judgements over GM food and seeds are being obeyed by the EU.

Thus, the simple truth is that any such threats as the Treasury conjures up could not be carried out, just as has been illustrated in the key Calais case.

Of course, there could be a few weeks in which there is disorganisation as new procedures are introduced to deal with the new status of UK-EU trade. But the port businesses would make all possible efforts to avoid this; and in any case such disorganisation cannot cause much of an effect on the economy, considering it would occur only at one or two ports experiencing bottlenecks or staff shortages. With EU trade only 12% of GDP and these ports a small percentage in turn of this, we are looking at perhaps a disturbance of less than 0.1% of GDP for three weeks, a tiny effect on GDP in Q2 of 2019. Compare this with the disruption caused to GDP in the first quarter by a sharp fall in construction activity, which did reduce GDP growth that quarter by perhaps 0.2%.

One can see that trade disruption due to no trade deal is really not in the same class at all. It is in the Millennium Bug category — another case where great fears were conjured up, to be found to be groundless in the event.

In other respects, no trade deal under WTO rules has a direct benefit to the UK economy and Treasury revenue. There would be a reduction and probable elimination of the £39 billion to be paid to Brussels during the now-non-existent transition period. Tariff revenues of some £13 billion would be paid to the Treasury on imports from the EU; these have to be absorbed by EU exporters who would otherwise lose their sales in the UK to a potential flood of non-EU imports that could flow in at current (tariff-inclusive) prices. Our exports to the EU would be charged £5 billion in EU tariffs but again because of home competition at existing prices our exporters would continue to charge these prices to their EU importers; the latter would then in effect have to pay the EU tariff from their margins.

The last point to remember is that the Brexit would have been brought forward to March 2019; this means that the UK can immediately embark on FTAs with key trading partners, instead of waiting until the end of the transitional period. It can also immediately implement its own regulation agenda, as well as its own immigration controls. This brings forward the extra growth due to Brexit.

The future casts its shadow or luminescence over the present due to rational expectations. So, this better long term prospect will have an immediate effect on UK economic confidence. Domestic investment and foreign direct investment will both respond positively. Neither of these effects will be visible except in some surveys perhaps, for a little time. They will not have an effect on short run demand which in any case is pushing up against the economy's supply constraints. But they will improve longer term forecasts and react in time on productivity.

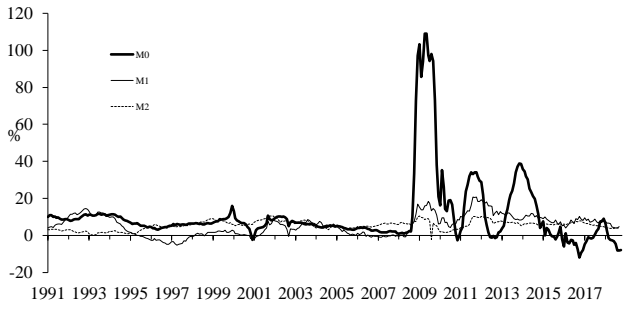
Some commentators look for effects on trade volumes, thinking that our trade pattern will change sharply away from the EU. This is not what our models predict. Rather prices will adjust to maintain trade flows since these traded

volumes are necessary parts of the businesses creating them. Our models also predict that there will be expansion in services production in the UK, as that is our comparative advantage and also not protected by the EU. Agriculture and manufacturing will lose EU protection and will need to raise productivity long term, which they can easily do; resources they release will move into traded and non-traded services. This in turn will gradually shift the pattern of trade towards countries that demand our services away from those that demand our goods. But this will be a gradual process; and it is also not easy to forecast which those countries will be.

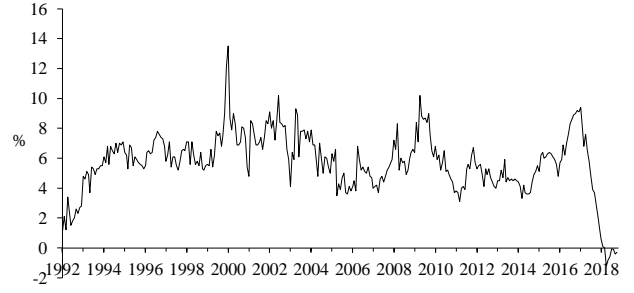
To sum up, if there is no trade deal, then from April 2019 we will see much the same goods going through our ports to much the same places. The border process will be as quick, with the required standards the same. Some money will change hands in tariff payments, but this will leave UK prices at the border unchanged, both exports and imports. One or two ports may experience some teething problems with these changes, but they have strong incentives to keep these short and modest. But under the generally unruffled surface of the UK economy expectations of the future will change radically for the better as long term changes in trade policy, regulation and migration are put in place as rapidly as possible.

What will Mrs. May do? It is generally best to bet on politicians wanting to survive. From our calculus above, Mrs. May is on a loser with Chequers but has a good hope of getting a Canada+ deal through Parliament. Furthermore, the EU has already offered a Canada+ deal, seeing it as in principle not problematic in that it does not undermine the EU Single Market and Customs Union. No doubt they would try to push it as close to the status quo as possible; however, that is something for the UK to resist. At least the result would be a negotiated FTA in which two sovereigns retained their sovereignty, unlike Chequers. It seems to us that whether now or later there will be such an FTA with the EU. For the EU it is superior to no trade deal economically; for us, while strictly inferior and losing us some modest gains, it represents agreement with a neighbour which it is worth sacrificing such gains to have. Hence in our forecasting we maintain our assumption of Canada+.

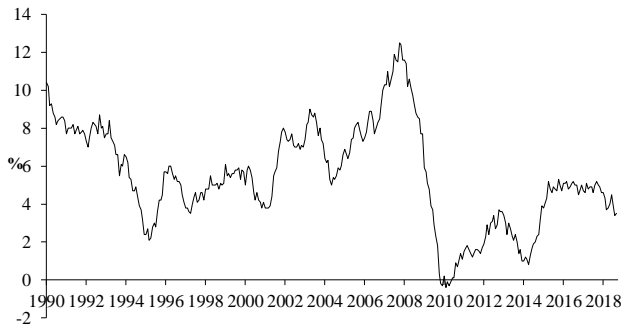
**U.S.: Growth in Monetary Aggregates (Yr - on - Yr)**



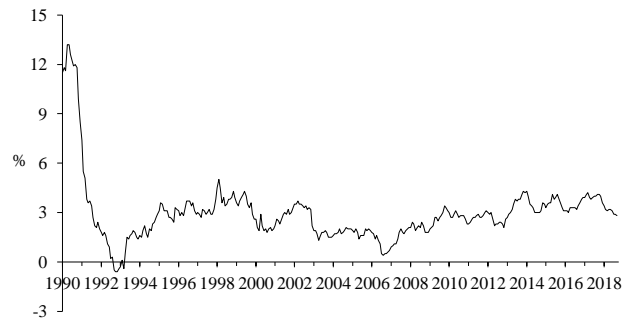
**UK: Notes and Coins in Circulation Growth**



**Eurozone M3 Growth**



**Japan: Growth of M2+CD's**



## FOCUS ON JAPAN

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Francesco Perugini

### Bank of Japan Keeps Policy Unchanged

On October 31st, the Bank of Japan (BOJ) policy board voted 7 to 2 to keep the current monetary easing policy unchanged and lowered the fiscal 2018 inflation and economic growth forecasts for the country. Officials say BOJ will continue to impose an interest rate of minus 0.1% on part of financial institutions' current-account deposits at the central bank, and it will keep purchasing long-term Japanese government bonds to guide 10-year JGB yields to around 0%.

To achieve its goals, the Bank said it would continue to buy Japanese government bonds at an annual pace of ¥80 trillion, while also emphasizing that it would allow the bond yield to move flexibly, depending on economic activity and prices, an approach introduced in July to keep the interbank market active and reduce the side effects of prolonged monetary easing, such as a slowdown in market activity and a squeeze on banks' profitability. Purchases of exchange-traded funds and real estate investment trusts were kept unchanged at ¥6 trillion and ¥90 billion a year, respectively. The central bank also reiterated its forward guidance for policy rates, promising to maintain the current extremely low levels of short- and long-term interest rates "for an extended period of time," until it achieves 2% inflation.

"Consumer prices are expected to rise gradually toward the BOJ's 2% target although it will take longer to reach the level than earlier anticipated by the central bank," BOJ Governor Haruhiko Kuroda said at a press conference after the meeting. "Momentum for price increases has been maintained," Kuroda said, while showing concern about downside risks to the economy and prices. "A deflationary mindset among consumers has yet to be eliminated," the BOJ chief added.

Among risk factors, Kuroda said he is giving most attention to the impact on the global economy of trade tensions between the US and China. The Japanese economy is "expanding moderately," with the growth rate of the core consumer price index "likely to increase gradually" toward the target of 2%, the BOJ said in a quarterly economic and price outlook report released after the policy meeting. Still, the median growth forecast for the core CPI for fiscal 2018 among the board's members fell to 0.9% from 1.1% in the previous July report.

The Japanese price level has barely moved in the last 20 years, fluctuating between minus 1.5% and plus 2.7% (in one year only, 2014, when the yen was drastically devalued). It is hard to believe that expectations of continued price stability can be easily dislodged in favour of 2% inflation. Politicians are likely to be nervous of upsetting Japanese savers with large quantities of nominal assets, whether cash or bonds, held on the assumption that prices would be stable.

It might be wiser for the BOJ to accept this and focus instead on pushing real interest rates to a reasonable level that reflects the return on capital worldwide. By holding down real rates the BOJ is subsidising poor investment and low productivity firms.

According to a recent Bloomberg Survey, more than 90% of economists don't expect the central bank to take extra action to support the economy when the sales tax is increased next year. Most of them expect the central bank to have tightened policy within a year of the tax rate going up in October.

### Government proposes to change immigration rules

Meanwhile on November the 2nd the Japanese government approved a bill to revise the immigration control law to allow more foreign workers to undertake work in a variety of sectors, from agriculture and construction, to daycare and nursing. The proposed legislation will create new visa types for foreign nationals with Japanese language skills wishing to work in Japan. The first type of visa, valid for up to five years, would be given to those who have adequate knowledge and experience in a specific field. They would not be able to bring their family members to Japan. The second type would be for those with higher-level professional and Japanese-language skills, with no limit on renewal. Those applying for this visa category would be allowed to bring in family members and could effectively stay in the country permanently.

The bill has indicated a significant shift in Japan's previous tight restrictions for foreign workers entering and working in Japan and the change in policy on foreign labour has been met with some reservations by opposition parties who have voiced concern about the shift in Japan's famously cautious immigration stance.

Prime Minister Shinzo Abe denied that the relaxed policy on foreign workers means Japan is opening its doors to immigrants, in an attempt to reassure his nationalist supporters. Media surveys show public sentiment is divided on the issue. Opponents are concerned about crime and jobs taken away from Japanese, while proponents say foreign workers are indispensable in sectors facing labour shortages.

The move comes as the nation grapples with a serious labour crunch caused by its rapidly aging and shrinking society. "Labour shortages are starting to become a major factor hampering economic growth. We will create a proper system," Prime Minister Shinzo Abe was quoted as saying at a parliamentary committee. Indeed, Japan's working-age population peaked two decades ago and it is one of the planet's oldest societies, with a median age of more than 46 years. By 2060, the population is projected to fall from 126 million today to about 92 million people. Almost 40% of the population by then will be 65 or older.

## MARKET DEVELOPMENTS

World stock markets have been having a difficult time as the Fed moves the dials on monetary policy back towards normality. This should also happen here once the Brexit outcome is known. The result is that the world economy is being slightly squeezed by tighter money. As the Fed tightens, bank regulation is being eased in the US — not merely in the Crapo amendment but also in regulatory

practice. This is likely to be mimicked elsewhere since US bank competition will force other zones to compete on regulations too. Therefore, while money is being tightened, its effects are being at least partly offset by easier bank regulation. The world economy will continue to grow fairly well through this tightening episode therefore.

**Table 1: Market Developments**

	Market Levels		Prediction for Oct/Nov 2019	
	Oct 5	Nov 6	Previous Letter View	Current View
<b>Share Indices</b>				
UK (FT 100)	7319	7041	10654	9582
US (S&P 500)	2886	2755	3306	3207
Germany (DAX 30)	12112	11484	20261	18444
Japan (Tokyo New)	1793	1659	2408	2293
<b>Bond Yields (government)</b>				
UK	1.53	1.36	2.50	2.50
US	3.16	3.19	3.00	3.00
Germany	0.46	0.35	0.80	0.80
Japan	0.17	0.15	0.10	0.10
UK Index Linked	-1.43	-1.56	-1.00	-1.00
<b>Exchange Rates</b>				
UK (\$ per £)	1.31	1.31	1.30	1.30
UK (trade weighted)	78.62	78.92	76.0	76.0
US (trade weighted)	100.90	102.00	102.5	102.5
Euro per \$	0.87	0.88	0.86	0.86
Euro per £	1.14	1.15	1.12	1.12
Japan (Yen per \$)	113.75	113.37	112.0	112.0
<b>Short Term Interest Rates (3-month deposits)</b>				
UK	0.80	0.83	1.00	1.00
US	2.47	2.64	2.50	2.50
Euro	-0.36	-0.39	-0.10	-0.10
Japan	-0.05	-0.25	0.10	0.10

**Table 2: Prospective Yields<sup>1</sup>**

<b>Equities: Contribution to £ yield of:</b>						
	Dividend Yield	Real Growth	Inflation	Changing Dividend Yield	Currency	Total
UK	3.60	1.9	2.2	32.00		39.70
US	1.99	2.4	2.1	11.90	0.61	19.00
Germany	3.30	1.8	1.8	57.00	2.42	66.32
Japan	1.90	1.1	1.1	36.00	1.81	41.91
UK indexed <sup>2</sup>	-1.43		2.2	1.00		1.65
Hong Kong <sup>3</sup>	2.60	6.0	2.1	-12.00	0.61	-0.69
Malaysia	3.30	5.4	2.1	48.00	0.61	59.41
Singapore	3.50	2.9	2.1	11.00	0.61	20.11
India	1.40	8.1	2.1	23.00	0.61	35.21
Korea	1.10	2.0	2.1	-31.00	0.61	-25.19
Indonesia	2.20	5.5	2.1	26.00	0.61	36.41
Taiwan	2.80	2.5	2.1	12.00	0.61	20.01
Thailand	3.20	3.4	2.1	22.00	0.61	31.31
<b>Bonds: Contribution to £ yield of: —</b>						
	Redemption Yield	Changing Nominal Rates	Currency	Total		
UK	1.36	-11.40				-10.04
US	3.19	1.90		0.61		5.70
Germany	0.35	-4.50		2.42		-1.73
Japan	0.15	0.50		1.81		2.46
<b>Deposits: Contribution to £ yield of:</b>						
	Deposit Yield	Currency	Total			
UK	0.83		0.83			
US	2.64	0.61	3.25			
Euro	-0.39	2.42	2.03			
Japan	-0.25	1.81	1.56			

<sup>1</sup> Yields in terms of €s or \$s can be computed by adjusting the £-based yields for the expected currency change.

<sup>2</sup> UK index linked bonds All Stocks

<sup>3</sup> Output based on China.



**Table 3: Portfolio(%)**

	Sterling Based Investor		Dollar Based Investor		Euro Based Investor	
	October Letter	Current View	October Letter	Current View	October 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

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



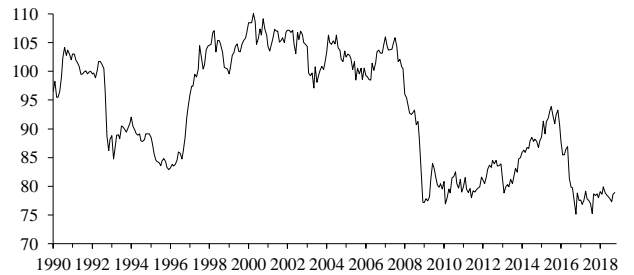
**UK: Dollars Per Pound Sterling**



**Euro per US dollar**



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



**Japan : Yen Per U.S. Dollar**

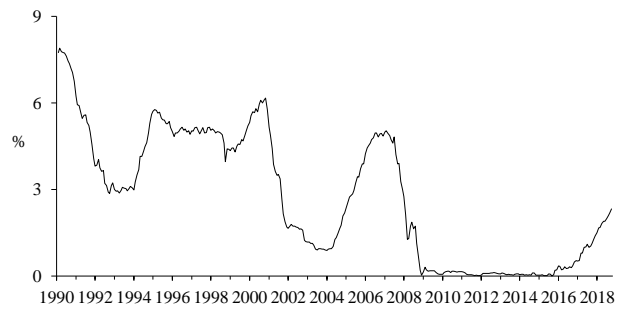


# GOVERNMENT BOND MARKETS

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



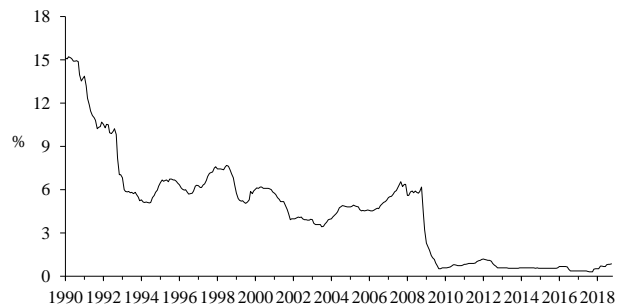
**U.S. : 3-Month Treasury Bill**



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



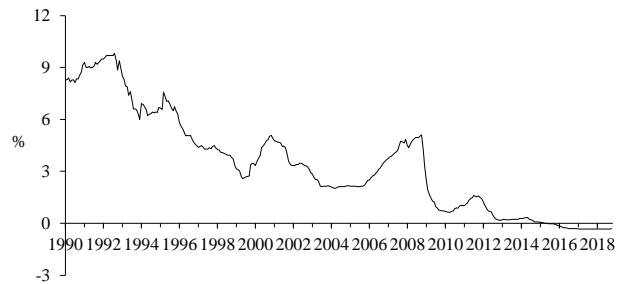
**U.K. : 3-Month Certificate of Deposit Rate**



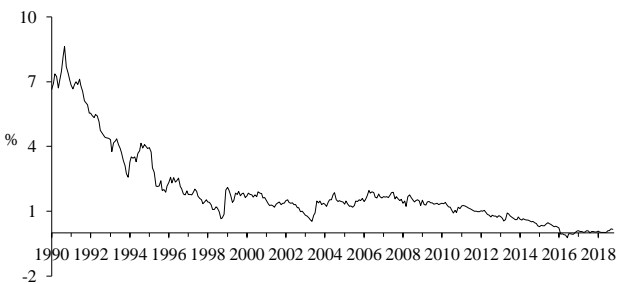
**Germany: Yield on Public Authority Bonds**



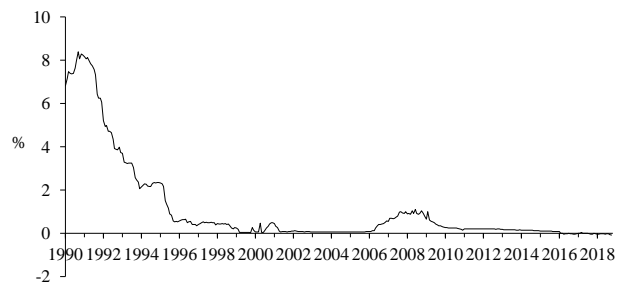
**Germany : 3-Month Interbank Deposit Rate**



**Japan: Yield on Long-Term Government Bonds**



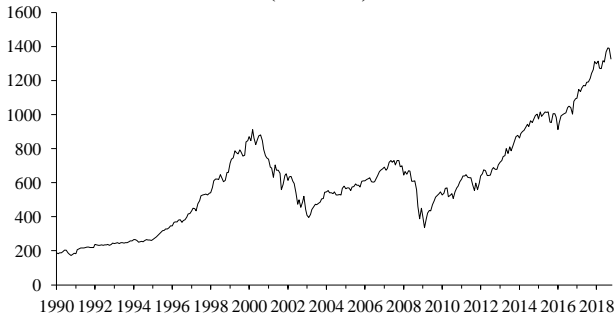
**Japan : 3-Month Money Market Rate**



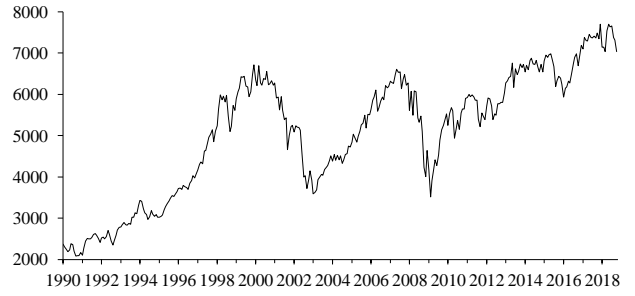
# MAJOR EQUITY MARKETS

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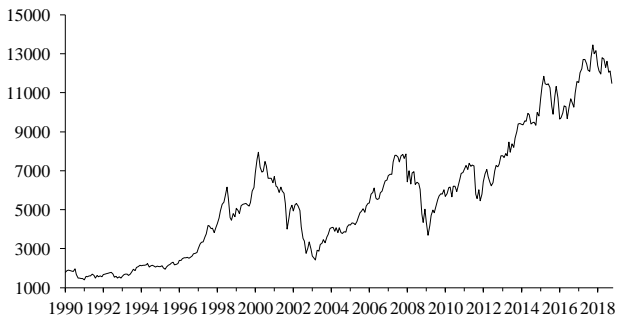
**U.S. : S & P 400 Industrial  
(1985=100)**



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



**Germany : DAX 30**



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



## EMERGING MARKETS

Anupam Rastogi

### India

The Indian government is confident that GDP growth will be higher than 7.4% for the current fiscal year. The International Monetary Fund maintains that India would regain the tag of the fastest growing major economy of the world, crossing China with more than 0.7 percentage point in 2018 and an impressive 1.2 percentage point growth lead in 2019.

Consumer retail inflation rose to 3.77% in September from 3.69% in August. The depreciating rupee, rising crude oil prices and a hike in support price for agricultural produce are expected to put upward pressure on retail inflation. Inflation remains below the Reserve Bank of India's 4% medium-term target. The central bank is unlikely to tighten monetary policy in December, notwithstanding the massive depreciation of the rupee and elevated crude oil prices in October. As crude prices are softening and consumer prices are within the central bank's medium term target, the bank will maintain the status quo. The rise in reservoir levels across most regions would support a brisk pace of winter sowing and a bumper crop is expected. This would keep food inflation under control.

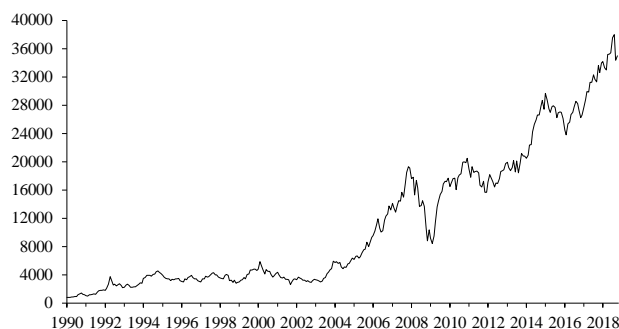
India is the latest country to see age-old tensions between governments and central banks flare up as the era of easy money draws to a close. The government sent the central bank letters that cited a never-used power to overrule the Reserve Bank of India in a bid to push through measures that would unleash spending ahead of general election in 2019.

The Indian economy is facing headwinds from rising global oil prices, rising interest rates in the US and drying up of liquidity due to the quantitative tightening in the US, and increased trade protectionism around the world.

India's trade deficit was \$13.98 billion in September despite higher oil prices, even as merchandise exports entered negative territory after a gap of six months. Exports contracted 2.15% in September while imports grew 10.45% in dollar terms. The oil import bill is a dominant reason for bloating the trade deficit. The share of crude oil imports at 23% of total imports in fiscal 2018 is much lower than the 33% it was in fiscal 2013. The share of gold imports in total imports has fallen to 7% from 11% over this period. On the other hand, the share of ores and minerals (especially coal), electronics and agricultural imports in total imports has been rising.

The U.S. has allowed India to keep importing some Iranian oil and payments for the Iranian oil will go into a local escrow account, which can be used for barter trade with Iran. No money will directly go to Iran. The limiting of payments

India: BSE Sensitive



to an escrow account would mean the U.S. can maintain economic pressure on Iran by squeezing a critical source of its revenue. It will provide relief to India as it would buy relatively cheap crude and the government would ward off higher fuel costs before national elections next year.

If oil prices remain high, India's current account deficit could hit the upper end of the expected band of 2.5–3% of GDP. While India has little control over global oil prices, economists are watching whether the burden of higher fuel prices, like petrol and diesel, will reduce demand. In the past, higher subsidies on oil products meant that the government's budget absorbed a large part of the hit from increasing oil prices. This time, however, the burden is being shared by household budgets, which could lead to a quicker adjustment in demand.

The rupee came under pressure and fell to the lowest level in October. Foreign portfolio investment outflows have been one of the factors attributed to the depreciation in the rupee. The depreciation in the rupee has been both a cause and effect of foreign fund outflows. Foreign investors remained net sellers of Indian debt and equity through the month of October, selling the most in nearly two years last month. October saw net sales of Rs 389bn — the steepest this year and the most since November 2016. The outflows in October were dominated by equities rather than debt, while selling in the equity markets was heavier last month. Foreign investors have pulled \$8.5 billion from India's debt market since the beginning of the year and \$5.5 billion from stocks amid an emerging-market selloff. The rupee has fallen 16% since January on higher oil prices and an outflow of funds.

The rupee weakened amid signs that India's central bank is stuck in a power struggle with Prime Minister Narendra Modi's government, which is eager to kick-start lending to stimulate the economy.

India jumped 23 places on the World Bank's Doing Business Index as the country made it easier to start a business, deal with construction permits and facilitated quicker cross-border trade. It's now ranked at 77, the highest in South Asia,

up from 100 last year, according to the World Bank’s Doing Business 2019 report. “India, with six reforms, is among the top-ten improvers for the second consecutive year,” the report said.

The improved ranking will boost the sentiment of Prime Minister Narendra Modi’s government ahead of the general election, at a time it’s facing flak for rising fuel prices and falling rupee.

In India, the report said, important reforms have been implemented in the recent years, including the Goods and Services Tax, the inflation-targeting framework, the Insolvency and Bankruptcy Code, and steps to liberalise foreign investment and make it easier to do business.

	16–17	17–18	18–19	19–20	20–21
GDP (% p.a.)	7.1	6.7	7.6	8.1	8.2
WPI (% p.a.)	4.5	3.5	4.5	4.7	4.2
Current A/c (US\$ bill.)	-24.0	-26.0	-70.0	-64.0	-64.0
Rs./\$(nom.)	68.2	65.0	70.2	71.5	72.5

## China

China’s rate of economic growth slid to 6.5% in the third quarter, the slowest pace since the first quarter of 2009. The economy remains on track to meet Beijing’s full-year growth target of about 6.5%. However, a scale back of industrial production, slowing retail sales, anaemic big-ticket investments and rising corporate defaults have set alarm bells ringing. The official purchasing managers’ index, a gauge of activity in the critical manufacturing sector, dropped in October to its lowest in more than two years. The official manufacturing PMI dropped to 50.2 in October from 50.8 in September, according to the statistics bureau. Car sales fell for a third straight month in September.

These indicators and other economic data in recent weeks have shown that the Chinese economy is slipping faster than many officials expected. But, China is now consuming as well as producing. That will only accelerate. China is evolving into a different economy from the one that’s buoyed world commerce the past couple of decades.

Keeping the economy at a steady and relatively fast pace is seen as crucial for the Communist Party to maintain social stability. If growth continues to diminish, Chinese officials and government advisers say Beijing is ready to roll out more pro-growth measures, such as releasing more funds for banks to make loans, stepping up government spending on infrastructure and lowering corporate tax rates. Policy makers have also successfully urged local governments to issue more bonds, in the hope they will spend on projects again. However, such steps could further exacerbate the country’s debt problems. As it is, soaring corporate and local-government debts are threatening the long-term health of the world’s second-largest economy.

Beijing could enact tax cuts and other measures in 2019 equivalent to over 1% of GDP, and that could surpass last year’s U.S. tax relief as a proportion of economic output. It

China: SSE Composite Index



makes sense for Beijing to focus on taxes for one simple reason: Chinese consumers are now a massive force. Consumption accounted for nearly 80% of Chinese growth in the first nine months of 2018, up from 45% in 2010. In the U.S., the comparative figure was around 70%. With a top tax rate of 45% on any monthly income over 80,000 yuan, policy makers seemingly have room to make further cuts. But, in China, tax cuts often don’t boost growth as much as government spending in the short run — because taxpayers tend to save some of their bounty.

China is not optimistic that tensions between the two countries will ease, even as President Xi Jinping and President Trump prepare to meet at the Group of 20 leaders’ meeting in Buenos Aires in late November. U.S. President Donald Trump’s demands for sweeping changes in China’s intellectual property, industrial subsidy and trade policies. Plans for bilateral trade talks to resolve the dispute have stalled. Basically, the US wants that President Xi should go slow on his China 2025 Vision which he is unlikely to give up.

Inflation is creeping higher in China from surging living costs. China’s consumer inflation accelerated for the fourth straight month in September. Driven by gains in food prices and higher fuel prices, consumer inflation is hovering around 2.5%. But, inflation remained within the 3% annual target of policy-makers.

Exports were an unexpected bright spot in the third quarter. Chinese companies’ overseas shipments rose an average of 11.7% from a year earlier, a slight improvement from an average of 11.5% monthly growth in the quarter before. Strong exports may partly be about companies trying to front-run U.S. tariffs. This is supported by cheaper yuan and U.S. fiscal stimulus — which tends to boost the US imports.

China’s current-account surplus has narrowed dramatically — to \$5.3 billion in the second quarter, about 10% of its level a year before. If U.S. tariffs start to hit Chinese exports hard, the surplus will likely narrow further, putting more downward pressure on the yuan.

The yuan, however, is getting support from portfolio inflows. Foreigners bought a net \$65 billion of Chinese government debt in 2018. The yuan is at the brink of hitting 7 per dollar — a closely watched threshold that could trigger

further selling if Chinese businesses and individuals decide that means they need to expatriate capital before any further decline. The yuan last traded weaker than 7 per dollar in May 2008 in the onshore market, while offshore trading was only introduced in 2010.

In the tightly controlled onshore market, the Chinese currency fell as low as 6.9647 per dollar in the last week of October. The yuan's weakness is down to a number of things. Partly, it's due to the strength of the dollar, which has benefited from confidence in the US economy and the fact that the US Federal Reserve has been raising interest rates gradually. But it's also because the Chinese economy is slowing down.

	16	17	18	19	20
GDP (%p.a.)	6.5	6.9	6.5	6.0	5.6
Inflation (%p.a.)	2.0	1.6	2.2	2.3	2.3
Trade Balance(US\$ bill.)	510	400	300	300	300
Rmb/\$ (nom.)	6.7	6.6	6.8	7.0	7.1

### South Korea

South Korea's economy grew slightly slower than expectations in the third quarter as a plunge in domestic investment offset the positive effects from government stimulus and resilient exports. The economy expanded 2% in the third quarter, far slower than the second quarter's 2.8%. South Korea's economy has started the final quarter with strong inflation and trade.

Consumer inflation was up 2% in October from a year earlier. The Bank of Korea expects inflation to average 1.6% this year before gradually picking up to 1.7% next year. The 2% annual inflation target is unlikely to be breached. Inflation of 2% in October was due to an increase in global oil prices and higher vegetable prices. The Bank of Korea has recently hinted that it intends to tighten policy, and most market analysts expect it to lift the base rate in November. Governor Lee Ju-yeol sounded slightly hawkish for a while, and recently reiterated that policy accommodation should be reduced to address financial imbalances such as record-high household debt. He also said the central bank would more closely monitor the widening U.S.-Korea rate gap to prevent capital outflows. We expect the BOK would leave its seven-day repurchase rate at 1.5% for the time being.

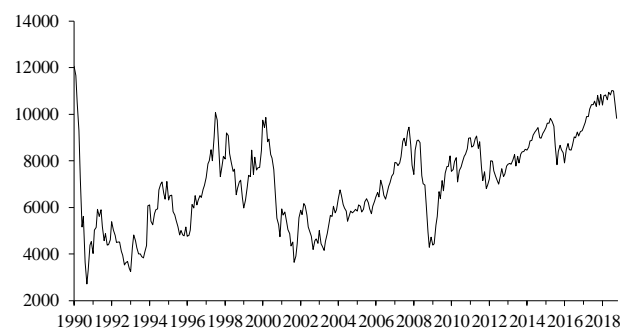
Export volumes rose 3.9% in the third quarter from the previous quarter. Import volumes contracted 0.1%. South Korean exports rebounded strongly in October due to a brisk demand from trading partners. The rise of global protectionism in trade is yet to take a significant toll on Korea.

South Korea agreed with the U.S. on the outline of deals that would allow them to keep importing some Iranian oil. A U.S. exemption would mean a resumption in imports of the Persian Gulf state's South Pars condensate, a type of ultra-light oil that is particularly critical for South Korea because many of its plants are geared to process it.

**Korea: Composite Index**



**Taiwan: Weighted TAIEX Price Index**



South Korea's Kospi entered a bear market in the last week of October after falling more than 20% from a recent peak. Fears that a protectionist U.S. stance would crimp exports have dogged Asian markets this year.

	16	17	18	19	20
GDP (%p.a.)	2.8	3.1	2.6	2.8	2.9
Inflation (%p.a.)	1.0	1.9	1.7	2.0	1.9
Current A/c(US\$ bill.)	88.0	88.0	86.0	80.0	78.0
Won/\$ (nom.)	1160	1100	1130	1150	1150

### Taiwan

Taiwan's economic growth probably slowed in the third quarter due to the softening global demand for exports amid trade tensions between China and the United States. Taiwan reported 3.3% annual growth for the second quarter.

Inflation in terms of CPI was mild at 1.72% YoY but higher from last month's 1.5% — mainly a result of higher energy prices. The same was the case for wholesale price index but manufacturing fatigue led WPI inflation lower to 6.55% YoY from 6.83%. Taiwan's central bank is maintaining appropriate loose monetary policy to support growth. The central bank of Taiwan can do very little to help the currency. The chance of a rate hike is small with such mild consumer inflation, which means the currency is likely to continue to weaken against the US dollar. The policy rate is at 1.375% and it would be too early to slash rates just yet. The central bank needs to save that option in case the economy weakens further.

Taiwan's exports rose moderately in September, while imports surged, leading to a reduction in the trade surplus. Exports grew 2.6% year-on-year and imports grew 13.9%. The trade surplus decreased by 35% from a year ago to US\$4.33 billion. This could potentially be a direct result of the supply chain damage caused by the bilateral trade war between the US and China. This has led to a sell off of equities (Taiwan's stock market has fallen by 4.84% since October 1st) by foreign investors and pushed the Taiwan dollar against the USD weaker by 0.96% since the end of September 2018 to NT\$30.835 per US\$. The ongoing trade war between the US and China and the central bank maintaining the policy rate means the currency is likely to weaken further to 31.0 by the end of the year.

	16	17	18	19	20
GDP (%p.a.)	1.4	2.6	3.0	2.6	2.3
Inflation (%p.a.)	1.0	0.6	1.5	1.3	1.2
Current A/c(US\$ bill.)	64.0	68.0	68.0	70.0	71.0
NT\$/\$(nom.)	32.5	31.0	29.8	31.0	31.0

## Brazil

Jair Bolsonaro emerged victorious in Brazil's presidential election, and the work is cut out for him in addressing the economic recession, closing a fiscal deficit and stamping out corruption. The voters want a dramatic change. Brazil's GDP growth declined 3.5% in 2016 and recorded an insipid growth of 1% in 2017. In 2018, the economy has remained in the pause mode. There is a large margin of spare capacity to accelerate growth without inflationary pressures in coming years. We expect growth to accelerate to 3% and 3.5% in 2019 and 2020. Bolsonaro, the president-elect, who will assume office on January 1, said, "This government will defend the constitution, democracy, and liberty. This is a promise not of a party, not the empty words of a man; it's an oath before God." In his victory speech, he backtracked on his most extreme statements from decades past.

Brazil's president-elect urged the current administration to revive a pension overhaul before his inauguration on Jan. 1, a move cheered by markets as crucial to jump-starting an ailing economy. His comments are significant as it signals the new administration's intent on keeping its campaign promise to tackle complex economic issues. But the pension bill remains unpopular and would face hurdles in Congress. The bill requires 308 votes in the 513-member House before it moves to the Senate, where senators have expressed more support for the bill.



Bolsonaro has enlisted University of Chicago-trained economist Paulo Guedes to draw up his economic plan. Mr. Guedes, who is expected to be given a key cabinet post, has released few details so far, but he has made it clear he wants to gradually replace the current pension system — in which workers' and employers' contributions pay for current retirees' pension payments — with one based on each worker's own savings. Mr. Guedes's economic plan calls for eliminating some of Brazil's 23 ministries, firing thousands of civil servants, privatizing dozens of state-controlled firms, and removing trade barriers. It would not be easy for Guedes to roll back socialist governments policies quickly.

Inflation in Brazil unexpectedly held steady in mid-October above the midpoint of the official target, giving the central bank plenty of room in the coming months. Consumer prices tracked by the benchmark IPCA index rose 4.53% in the 12 months through mid-October. The central bank targets a 4.5% year-end rate for 2018 and 4.25% for 2019, plus or minus 1.5 percentage points.

The expected change in regime resulted in a soaring of Brazil's stock market and currency by 13% in September while global markets experienced sharp drop. The Brazilian real has made up nearly all of the losses it suffered in the past two months amid a broader emerging-markets selloff and nervousness over Brazilian elections.

	16	17	18	19	20
GDP (%p.a.)	-3.5	1.0	0.5	3.0	3.5
Inflation (%p.a.)	6.3	3.0	4.4	4.5	4.2
Current A/c(US\$ bill.)	-28.0	-4.0	-18.0	-16.0	-16.0
Real\$/\$(nom.)	3.5	3.2	3.8	3.7	3.6



## Other Emerging Markets

**Hong Kong: FT-Actuaries**



**Indonesia: Jakarta Composite**



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



**Thailand: Composite Index**



**Singapore: Straits Times Index**

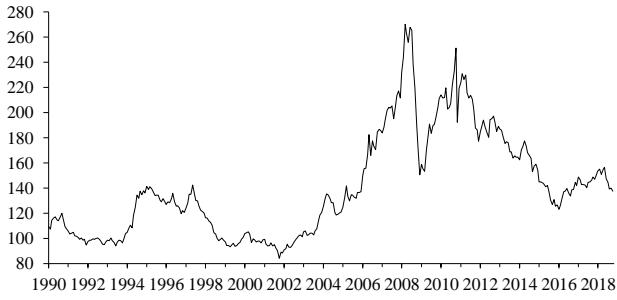


**Philippines: Manila Composite**

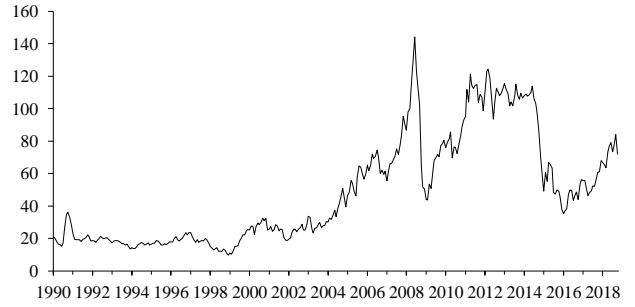


# COMMODITY MARKETS

**Commodity Price Index (Dollar)**  
(Economist, 2000=100)



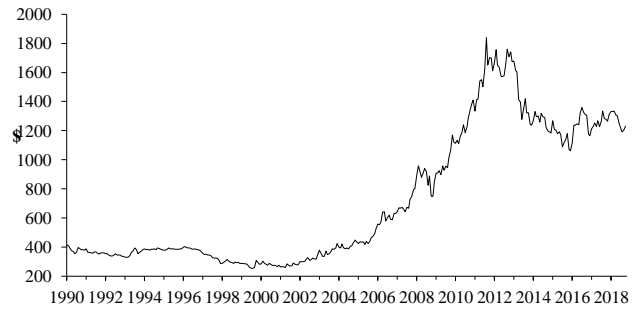
**Oil Price: North Sea Brent (in Dollars)**



**Commodity Price Index (Sterling)**  
(Economist, 2000=100)



**Gold Price (in Dollars)**



**Commodity Price Index (Euro)**  
(Economist)



## UK FORECAST DETAIL

### Prices, Wages, Interest Rates and Exchange Rate Forecast (Seasonally Adjusted)

	Inflation % <sup>1</sup> (CPI)	Short Dated (5 Year) Interest Rates	3 Month Int. Rates	Nominal Exchange Rate (2005=100) <sup>2</sup>	Real Exchange Rate <sup>3</sup>	Real 3 Month Int. Rates % <sup>4</sup>	Inflation (RPIX)	Real Short Dated Rate of Interest <sup>5</sup>
2017	2.6	0.6	0.4	77.4	75.5	-1.6	3.8	-1.5
2018	2.5	1.5	0.6	77.4	75.8	-1.5	3.5	-0.5
2019	2.2	2.5	1.1	76.2	74.9	-1.0	2.9	0.5
2020	2.0	3.4	2.4	75.4	74.3	0.4	2.6	1.4
2021	2.0	2.9	3.1	75.5	74.9	1.0	2.5	0.9
2022	2.0	2.6	3.1	75.2	74.8	1.1	2.6	0.7
2017:1	2.2	0.6	0.3	76.8	75.0	-1.7	3.3	-1.5
2017:2	2.6	0.4	0.4	78.2	76.4	-1.5	3.8	-1.7
2017:3	2.7	0.6	0.3	76.7	74.5	-1.5	4.0	-1.5
2017:4	2.8	0.8	0.4	77.9	76.0	-1.7	4.1	-1.3
2018:1	2.5	1.0	0.5	79.2	78.0	-1.6	3.6	-1.0
2018:2	2.6	1.5	0.5	77.0	75.4	-1.7	3.6	-0.5
2018:3	2.5	1.8	0.8	77.1	75.4	-1.4	3.5	-0.2
2018:4	2.5	1.8	0.8	76.2	74.4	-1.4	3.4	-0.2
2019:1	2.2	2.5	0.8	76.6	75.4	-1.3	2.9	0.5
2019:2	2.2	2.5	1.0	76.5	75.4	-1.1	2.9	0.5
2019:3	2.2	2.5	1.0	75.9	74.4	-1.0	2.8	0.5
2019:4	2.2	2.5	1.5	75.7	74.3	-0.5	2.9	0.5

<sup>1</sup> Consumer's Expenditure Deflator

<sup>2</sup> Sterling Effective Exchange Rate Bank of England

<sup>3</sup> Ratio of UK to other OECD consumer prices adjusted for nominal exchange rate

<sup>4</sup> Treasury Bill Rate less one year forecast of inflation

<sup>5</sup> 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) <sup>1</sup>	Wage Growth <sup>2</sup>	Unemployment (New Basis) Percent <sup>3</sup>	Millions	Real Wage Rate <sup>4</sup> (1990=100)
2017	259.1	2.9	2.2	0.8	141.7
2018	265.8	2.7	2.2	0.8	142.2
2019	272.3	2.4	2.1	0.8	142.5
2020	276.9	1.7	1.9	0.7	142.7
2021	283.4	2.4	1.9	0.7	142.3
2022	289.8	2.3	1.5	0.6	142.9
2017:1	258.1	2.1	0.8	142.2	190.2
2017:2	257.3	2.3	0.8	141.6	192.2
2017:3	260.2	2.2	0.8	142.7	194.0
2017:4	260.9	2.3	0.8	142.2	196.0
2018:1	264.6	2.3	0.8	142.8	196.1
2018:2	264.3	2.1	0.8	141.8	199.6
2018:3	267.0	2.1	0.8	142.9	201.3
2018:4	267.3	2.1	0.8	142.2	203.1
2019:1	269.7	2.0	0.7	142.3	203.0
2019:2	271.9	2.0	0.7	142.7	204.9
2019:3	272.8	2.0	0.7	142.9	206.7
2019:4	274.8	1.9	0.7	143.0	208.5

<sup>1</sup> Whole Economy

<sup>2</sup> Average Earnings

<sup>3</sup> Wholly unemployed excluding school leavers as%age of employed and unemployed, self employed and HM Forces

<sup>4</sup> Wage rate deflated by CPI

**Estimates and Projections of the Gross Domestic Product<sup>1</sup> (£ Million 1990 Prices)**

	Expenditure Index	£ Million '90 prices	Non-Durable Consumption <sup>2</sup>	Private Sector Gross Investment Expenditure <sup>3</sup>	Public Authority Expenditure <sup>4</sup>	Net Exports <sup>5</sup>	AFC
2017	162.3	777336.9	443745.6	302292.1	198857.7	-65371.5	102187.0
2018	164.7	788702.9	452535.4	300001.6	200246.3	-62820.3	101237.1
2019	167.8	803486.7	458033.7	303844.4	200602.7	-55631.9	103388.8
2020	171.1	819157.6	466811.5	305454.3	201938.2	-49424.8	105622.7
2021	174.6	836277.7	476328.1	309328.2	203070.4	-44408.2	108042.3
2022	178.6	855233.2	486139.0	312409.7	204308.6	-36921.2	110703.2
2017/16	1.8		0.6	0.8	0.4	-0.7	0.6
2018/17	1.5		2.0	-0.7	0.7	-0.8	2.0
2019/18	1.9		1.2	1.3	0.2	2.1	1.2
2020/19	2.0		1.9	0.5	0.7	2.2	1.9
2021/20	2.1		2.0	1.3	0.6	2.3	2.0
2022/21	2.3		2.1	1.0	0.6	2.5	2.1
2017:1	161.5	193340.7	110460.5	76110.0	50838.0	-16948.9	27118.9
2017:2	161.9	193817.5	111360.7	74039.4	48893.4	-16008.3	24467.6
2017:3	162.6	194710.8	110910.0	75858.8	49324.8	-15656.7	25726.1
2017:4	163.3	195468.0	111014.4	76284.0	49801.5	-16757.6	24874.3
2018:1	163.6	195906.9	110726.8	75395.5	51361.5	-16549.5	25007.4
2018:2	164.3	196658.4	113112.9	76462.4	49463.3	-17119.9	25257.6
2018:3	165.0	197581.8	114100.5	74023.6	49577.5	-14658.4	25458.2
2018:4	165.8	198555.8	114595.2	74120.1	49844.0	-14492.5	25513.8
2019:1	166.7	199543.9	113052.0	76413.1	50526.0	-14820.6	25636.7
2019:2	167.3	200322.9	114121.4	76582.8	50009.7	-14624.9	25773.7
2019:3	168.2	201324.8	115127.6	74790.6	50056.5	-12733.9	25925.3
2019:4	169.0	202295.1	115732.7	76058.0	50010.4	-13452.6	26053.1

<sup>1</sup> GDP at factor cost. Expenditure measure; seasonally adjusted

<sup>2</sup> Consumers expenditure less expenditure on durables and housing

<sup>3</sup> Private gross domestic capital formation plus household expenditure on durables and clothing plus private sector stock building

<sup>4</sup> General government current and capital expenditure including stock building

<sup>5</sup> Exports of goods and services less imports of goods and services

**Financial Forecast**

	PSBR/GDP % <sup>1</sup>	GDP <sup>1</sup> (£bn)	PSBR (£bn)	Debt Interest (£bn)	Current Account (£ bn)
			Financial Year		
2017	2.0	2047.3	39.4	79.9	-66.3
2018	1.4	2131.8	30.7	82.7	-60.3
2019	1.0	2219.8	21.8	87.5	-49.5
2020	0.2	2309.9	5.6	94.6	-39.7
2021	-0.3	2406.9	-6.7	98.0	-31.0
2022	-0.6	2513.2	-15.1	99.5	-17.9
2017:1	-2.9	507.9	-14.6	20.0	-15.7
2017:2	5.0	503.8	25.3	20.0	-20.5
2017:3	2.3	510.3	11.8	19.7	-15.3
2017:4	3.2	513.3	16.5	19.9	-14.8
2018:1	-2.7	520.0	-14.3	20.2	-13.4
2018:2	1.3	525.5	6.8	20.3	-22.2
2018:3	1.5	529.4	7.7	20.7	-13.5
2018:4	1.5	535.0	7.8	20.8	-11.3
2019:1	1.6	541.9	8.5	21.0	-10.8
2019:2	1.1	547.3	5.9	21.3	-18.4
2019:3	0.9	551.2	5.1	21.3	-10.6
2019:4	0.8	557.4	4.6	22.0	-9.6

<sup>1</sup> GDP at market prices (Financial Year)

## WORLD FORECAST DETAIL

### Growth Of Real GNP

	2015	2016	2017	2018	2019	2020
U.S.A.	2.9	1.5	2.3	2.7	2.4	2.5
U.K.	2.3	1.9	1.8	1.5	1.9	2.0
Japan	1.4	1.0	1.7	1.4	1.1	1.2
Germany	1.7	1.9	2.2	2.3	1.8	2.0
France	1.0	1.1	2.0	1.9	1.7	1.9
Italy	1.0	0.9	1.5	1.4	1.1	1.2

### Growth Of Consumer Prices

	2015	2016	2017	2018	2019	2020
U.S.A.	0.1	1.3	2.1	2.5	2.2	2.0
U.K.	0.2	1.1	2.6	2.5	2.0	2.0
Japan	0.8	-0.1	0.5	0.9	1.1	1.2
Germany	0.3	0.5	1.8	1.7	1.8	1.9
France	0.0	0.2	1.0	1.3	1.5	1.6
Italy	0.1	-0.1	1.2	1.1	1.4	1.5

### Real Short-Term Interest Rates

	2015	2016	2017	2018	2019	2020
U.S.A.	-1.1	-1.6	-0.9	-0.4	0.5	0.8
U.K.	0.0	-1.2	-1.5	-1.0	0.4	1.0
Japan	0.1	-0.4	-0.8	-1.0	-1.1	-1.1
Germany	-0.6	-2.0	-2.0	-2.0	-2.1	-2.0
France	-0.2	-1.3	-1.6	-1.7	-2.1	-1.8
Italy	0.0	-1.5	-1.4	-1.6	-2.1	-1.5

### Nominal Short-Term Interest Rates

	2015	2016	2017	2018	2019	2020
U.S.A.	0.2	0.5	1.4	1.8	2.5	2.8
U.K.	0.6	0.5	0.4	0.6	1.1	2.4
Japan	0.2	0.1	0.1	0.1	0.1	0.1
Germany	-0.1	-0.3	-0.3	-0.2	-0.2	0.0
France	-0.1	-0.3	-0.3	-0.2	-0.1	0.0
Italy	-0.1	-0.3	-0.3	-0.2	-0.1	0.0

### Real Long-Term Interest Rates

	2015	2016	2017	2018	2019	2020
U.S.A.	0.3	0.5	0.8	1.0	1.5	1.8
U.K.	-0.7	-1.5	-1.5	-0.5	0.5	1.4
Japan	-0.5	-1.0	-1.1	-1.3	-1.5	-1.5
Germany	-0.9	-1.7	-1.5	-1.4	-1.1	-1.0
France	-0.7	-0.9	-0.9	-0.8	-0.6	-0.5
Italy	0.4	0.1	0.3	0.4	0.6	1.3

### Nominal Long-Term Interest Rates

	2015	2016	2017	2018	2019	2020
U.S.A.	2.2	2.5	2.8	3.0	3.5	3.8
U.K.	1.3	0.7	0.6	1.5	2.5	3.4
Japan	0.3	0.0	0.1	0.1	0.1	0.1
Germany	0.6	0.1	0.4	0.6	0.9	1.0
France	1.0	0.7	0.8	1.1	1.4	1.5
Italy	1.6	1.7	1.9	2.3	2.6	2.7

### Index Of Real Exchange Rate(2000=100)<sup>1</sup>

	2015	2016	2017	2018	2019	2020
U.S.A.	93.0	94.0	94.5	94.8	95.0	95.2
U.K.	92.2	81.4	75.5	75.8	74.9	74.3
Japan	56.0	58.4	58.3	58.1	58.4	58.3
Germany	94.7	95.0	94.3	94.9	95.1	95.0
France	96.2	96.0	95.3	95.1	95.5	95.4
Italy	102.1	102.0	101.2	101.1	101.1	101.0

<sup>1</sup> 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)

	2015	2016	2017	2018	2019	2020
U.S.A. <sup>1</sup>	103.08	101.91	102.20	102.40	102.50	102.50
U.K.	1.53	1.35	1.30	1.29	1.30	1.32
Japan	121.11	108.61	112.18	114.10	112.00	112.50
Eurozone	0.90	0.90	0.88	0.85	0.86	0.85

<sup>1</sup> The series for the USA is a trade weighted index (1990=100); the series for the UK is \$ per £

\* Forecasts based on the Liverpool World Model