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—

Julian Hodge Institute of Applied Macroeconomics

HODGE BANK

Patrick Minford, Economic Adviser to Hodge Bank

"...the election clarified the general desire on all sides about Brexit: that it should be dealt with efficiently and according to the wishes of the population to regain control of the border and the law and to sign widespread free trade deals with the EU and the rest of the world. In this sense it is true that it became a 'Brexitless election....Mr. Corbyn made it possible for UKIP voters to back Labour in the election... it seems Labour would leave the Single Market in its present form..."

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Commercial Deposits

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The economy is continuing to do well, with the large Brexit devaluation powering up profits in manufacturing, farming and the rest of the export sector, diverting income and demand from consumers and pushing up net exports. The election returned a hung Parliament but one in which both major parties support Brexit; there will be a long debate over the details of how 'hard' or 'sort' it is but this would have happened whatever the election outcome. It will be decided by rigorous examination of the costs and benefits of whatever 'deals' are on offer. Vested interests in business and elsewhere are lining up to defend their privileges; but the national interest, just like the consumer interest, is best served by free trade, pro-competitive regulation and the ending of subsidised unskilled EU immigration. This seems to be the aim of the current UK government in the upcoming negotiations with the EU.

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Kent Matthews

The forecasting community's consensus has had a bad post-Brexit run, having proved far too pessimistic. Professor Matthews examines where this pessimism came from and suggests how the community can rectify matters.

BREXIT AND OTHER ECONOMIC POLICY POST-ELECTION

The election result was a shock and much could and has been written about the weakness of the Conservative campaign after beginning from such a promising opening position. But it has had several important results on the policy landscape.

The first is on Brexit policy. It is true that the government of the Conservatives and the Democratic Unionist Party of Northern Ireland has only a tiny working majority which will make it difficult to carry through controversial decisions. However, in other ways the position is stronger than before the election.

First the Labour Party under Jeremy Corbyn pledged in its manifesto to back Brexit and in various campaign statements backed control of EU immigration; in this way Mr. Corbyn made it possible for UKIP voters to back Labour in the election. There is some confusion over Labour policies but it seems Labour is committed to leaving the Single Market in its present form, whatever that may mean. Should Theresa May come back from Brussels, having rejected an EU deal in which the UK stays in the Single Market and loses control of immigration, it will be difficult for Mr. Corbyn and his party to oppose her.

Second, the Conservatives who won seats campaigned on a manifesto that pledged to withdraw totally from the Single Market and the Customs Union, no longer be governed by European Court of Justice edicts, regain control of EU immigration and establish free trade widely with all our trading partners. Again, while individual MPs may be less enthusiastic about these pledges, they are bound by this manifesto.

To summarise, it seems to be true that the election clarified the general desire on all sides about Brexit: that it should be dealt with efficiently and according to the wishes of the population to regain control of the border and the law and to sign widespread free trade deals with the EU and the rest of the world. In this sense it is true that it became a 'Brexit-less election'. The main party that opposed this, the Liberal Democrats, did not appear to benefit from it. Therefore provided the Conservative Unionist government pursues Brexit in a reasoned and principled way it should get support in the House of Commons; and the House of Lords will have no basis on which to oppose it, given that support, endorsed in a general election.

It is usually true in policy programmes that only one major initiative gets full attention in a Parliament. There is simply not enough energy available in the governmental process to do more than one major thing at a time. However in this coming Parliament it will be true in the most simple terms. Both the Conservative manifesto and the Labour manifesto had anti-market proposals- whether an 'industrial strategy' or interventionist labour market ideas from the Conservatives or pure left-wing throwbacks like nationalisation and high top tax rates from Labour. None of these will have any hope of getting through the Commons with such a tiny working majority. Even if Mr. Corbyn got power in a broad left coalition, which looks impossible under the current seat arithmetic, he could not get any of his programme through.

Table 1: UK forecast summary

	2014	2015	2016	2017	2018	2019	2020
GDP Growth[1]	2.9	2.2	2.3	2.1	2.6	2.9	3.5
Inflation CPI	1.7	0.2	1.2	2.6	2.6	3.0	3.0
Wage Growth	1.2	2.4	2.9	2.6	3.6	4.7	4.5
Unemployment (Mill.)[2]	1.1	0.8	0.7	0.8	0.8	0.7	0.7
Exchange Rate[3]	87.1	91.6	80.4	76.4	75.1	74.6	74.4
3 Month Interest Rate	0.6	0.6	0.4	0.9	1.5	2.5	3.0
5 Year Interest Rate	1.8	1.3	0.9	1.1	2.0	2.9	3.0
Current Balance (£bn)	–99.9	–103.7	–89.0	–63.7	–44.9	–14.4	0.5
PSBR (£bn)	83.3	71.2	69.0	53.4	44.8	37.2	12.8

[1]Expenditure estimate at factor cost
[2]U.K. Wholly unemployed excluding school leavers (new basis)
[3]Sterling effective exchange rate, Bank of England Index (2005 = 100)

So this will be a Parliament solely devoted to Brexit and its members are largely bound by promises to the people to deliver Brexit in the way described above. It will also be watched like a hawk by the two thirds of the public who the pollsters tell us want to see Brexit happen in this way.

Of course in the familiar way with the great British debating tradition there will be articulate Remainers, including once again an economic consensus, that this is wrong and bad for the UK economy. That argument has already been engaged both in the referendum and in the year since, and lost in the popular debate. But of course these protagonists will continue their opposition; and academic debate will also flourish and one must hope lead to more intellectual progress in this area. But the policy process has definitely moved on to delivering the Brexit the majority of people have now endorsed.

The main uncertainty that will gradually be resolved in coming months is what the EU's demands will be and whether it has any willingness to compromise in the interests of finding an acceptable deal. It is this that will decide the 'softness' of any 'Brexit deal'. It is simply not possible to rule out a collapse in the talks and 'no deal'. If so, given the way that most UK voters have come together behind Brexit, and that both major parties support Brexit, it seems overwhelmingly likely that Parliament will back no deal and that UK public opinion will become extremely hostile to the EU.

The return of normal forecasting

After their disastrous efforts at forecasting doom and gloom from Brexit, the forecasting community has at last come to its senses and begun to forecast normally. The outlook among the key forecasters has moved to a growth forecast of 2% for 2017 for the UK, against an outturn for 2016 that has been revised down to 1.8% overall on the basis of a very weak (revised) first quarter. This is a surprising revision which may change yet again. But the basic point about it is that 2016 came in as a lamb and went out as a lion- so turning the 'Brexit Disaster scenario' on its head.

What to make of all this? Time and again the forecasters forgot the power of the exchange rate. For them it is all about the effect on the consumer price index, and not at all about the profitability of exports and import-substitutes. Yet go back to basic open economy macroeconomics and remind yourself that a large devaluation is like a large monetary stimulus that works by raising home producer prices relative to wages, with an impact on industrial profitability in selling to foreigners at the same dollar prices and in selling at home at prices that can rise to match much more expensively home-priced foreign products. No wonder that we have been hearing nothing but good news from industry, on sales, investment and output.

This devaluation has powered up an economy that was doing perfectly well already. On top of this world growth is strengthening, with even the euro-zone perking up and Trump's America straining at the leash and slavering over the prospect of an Obama-free world of deregulation and tax cuts. Interest rates are rising in the US; QE will continue for a time in the euro-zone but with inflation there over 2% this will not go on for long now. Here it can only be a matter of time before the Bank moves to tighten monetary conditions, if only modestly in 2017. Inflation here is already over 2% and likely to rise further over the next year as price rises filter through from the devaluation and also push up wages. The Liverpool Macro Research forecast is for growth over 2% in 2017; it could well get up to 3% p.a. or more by the year-end depending on just how much wages respond. So far it looks as if the response will be fairly muted, and that money and credit have also not responded as strongly as they would have in a less regulated world. Rather like in the post-ERM period from 1992, when also there was a large devaluation, there may be enough cooling sentiment around, due to fear of the unknown, to prevent a precipitate boom.

Meanwhile it is salutary to look at a table of post-Brexit manufacturing profitability.

Table 2: Post-Brexit manufacturing profitability

Post-Brexit manufacturing profits	Home Market (£100 bn)	EU Market (£110 bn)	ROW Market (£115 bn)	TOTAL
Price Impact	-20%	0	0	
EU Tariff Impact	0	-3.5%	+15%	
Sterling Impact	+15%	+15%	+15%	
TOTAL	-£5 bn	+£12.6 bn	£17.2 bn	+£25 bn

Source: Patrick Minford and Edgar Miller, 2017, What shall we do if the EU will not play ball? UK WTO strategy in a non-cooperative continent, downloadable from www.economistsforfree trade.com.

Notes on Table: The WTO Option in our World Trade Model assumes that initially, following the loss of EU protection, UK manufacturing prices will fall by 20% in the home market compared with current EU prices but eventually over, say 10 years will settle to 10% lower than prices within the EU. This is because the EU is assumed to follow a slow trend towards reduced protectionism. It also assumes that our exports to the EU face the current EU MFN tariff but that a general pro-business industrial strategy support package is put in place by the government to allow industry to absorb this without putting up EU prices. The Sterling exchange rate has fallen about 15% post-Brexit. The total manufacturing home market is around £100 billion; total manufacturing exports to the EU are around £110 billion and to the ROW about the same at £115 billion. So while the exchange rate stays down, manufacturing makes profit gains of £25 billion, on total gross value added of about £160 billion equating to 16% extra gross margin on value added.

Manufacturing gets an immediate uplift once Brexit occurs of no less than 16% on its £160 billion value added, a huge rise in its margins. This is after assuming that the EU levies a tariff on UK exports, while the UK negotiates free trade agreements with the Rest of the World implying that manufactures from the ROW enter here at world prices, 20% lower than current. It is no wonder that UK manufacturing is in high spirits.

The economy after the Brexit devaluation

The sharp devaluation that followed Brexit was a response in some degree to uncertainty but mainly to the need to penetrate new markets in order to sell more goods.

The uncertainty concerns policy on many aspects of the economy which after Brexit will be determined by the relatively unknown preferences of the UK government instead of the well-known ones of the EU. Nevertheless Mrs. May's government has been clear in saying that it will pursue free trade abroad and be rather sensitive to worker needs at home- a mixture that is easy for markets to appreciate. The uncertainty now arises most from what exactly the EU is up to. Until negotiations get under way we will remain in the dark on this. Even so, as we have argued before, the UK is in a strong position to have no agreement with the EU and still pursue free trade. This policy will boost consumer welfare, competition and growth. Most indicators now suggest that companies, workers and markets are all rather calm about any remaining uncertainty.

The main reason for devaluation was the need to penetrate new markets in the medium term for various reasons. First, productivity will rise and more goods and services produced; these must be sold. Second, there may well be some protectionist action from the EU which will reduce EU demand for UK product; this will need to be diverted to new markets. Third, there is the existing current account deficit which needs correcting and since this is on top of the first two factors, it has swum into focus after some years of neglect. Fourth, this deficit will worsen in the short run as free trade policies lower import barriers and so encourage imports.

All four factors point to the need to make UK products more attractive worldwide to generate bigger export sales. In our longterm trade model we forecast this as happening without any need for export prices to fall in the long run, because world markets are highly competitive and in principle will easily absorb the extra UK supply of exports; so in the long run we expect the exchange rate to revert to its previous level. Nevertheless in the short and medium term there has to be a factor pushing open this door; this is the exchange rate. It is playing its necessary role in the UK economy as vigorously as ever.

All the evidence from recent indicators tells us that the devaluation has indeed stimulated the economy substantially. A 15% devaluation is the external equivalent of a 15% surge in the money supply: indeed the two things should accompany each other over time. It is a strong monetary stimulus which works through the external channel in the first instance: whereas a monetary stimulus in the form of lower interest rates and more money printing works through the domestic spending channel.

We are seeing strong CBI export survey returns and also strong Purchasing Managers Index reports in all sectors. Thus demand is coming from exports and from import substitution, and the domestic consumption component that was strong in 2016 is weaker in 2017, again a result of devaluation which transfers income from consumer pockets into corporate profits. Given that we wish to divert output into export markets and away from imports we should expect this pattern of demand and supply. Output growth remains strong; even if the first quarter may have slowed a bit. The latest surveys suggest the second quarter will be stronger and also we expect some upward revision of the first quarter as more data comes in on net exports.

Some ink has been spilt on the sluggishness of investment. But this is not surprising as capacity is under used; until capacity is used up, there will be little pressure to invest. Since the financial crisis the labour market has picked up fast, with people pushing to get jobs and forcing employment upwards. We have a flexible labour market and this has shown itself in the form of real wages falling during the crisis and staying low since. This in turn has produced poor productivity figures: but these need to be seen as the other side of the labour flexibility coin. As is now well known, productivity is in any case poorly measured in an economy dominated by services and new goods such as smart phones; price measures simply do not allow properly for quality from the new consumption possibilities.

In our forecast for the UK we see continued steady growth, with demand shifting more towards net exports. Investment growth will wait until current capacity is absorbed. Monetary policy will remain relatively easy but we have long argued that interest rates need to be raised to allow money markets to work properly, without the discrimination against savers that we have been seeing since the crisis.

Fortunately in the US growth continues to be steady, with the first quarter's sluggishness a regular feature suggesting something is wrong with the seasonal adjustment. A tax-cut package is likely in due course as the Republicans reach some consensus on its shape and on the repeal of Obamacare. Meanwhile President Trump is busy repealing a large swathe of regulations passed under President Obama. Among them are the Dodd-Frank regulations of banking which continues to cramp bank lending and money growth.

The Fed is continuing to raise interest rates which suggests that we will be seeing some normalisation of money markets over the next two years.

As we have argued before the continued excess capacity in raw material supply will keep raw material prices down and this bids fair to maintain a good growth climate for the next decade.

The Bank worries about credit card debt but will not raise rates

Nothing more clearly illustrates the muddle at the heart of UK monetary policy today than the Bank's agonised public comments on the strong growth of credit card debt. It worries about this; and yet in the next breath it says it has no intention of raising interest rates from the 'zero bound'. It also treats the low level of sterling- some 15% below its pre-Brexit rate- as if it has nothing to do with monetary policy.

Yet, as argued above, a 15% devaluation under fixed exchange rates is the equivalent of a 15% boost to the money supply. Both have the effect in the long run of raising prices by 15%. In the short run both stimulate the economy via the burst of inflation that raises profits at the expense of wages until eventually wages catch up. We deploy these tools to stimulate a flagging economy.

Today we have not got a flagging economy; it is growing steadily and in the context of the post-financial crisis world rather strongly. Among developed countries the UK is one of the fastest growing, if not the fastest. All developed economies have suffered from a banking system that, presented with highly unwelcome demands by tightening regulators for more equity capital, have reacted by shrinking their balance sheets and twisting their loans towards areas where the capital requirements are lowest, such as mortgages, and car finance packages that can be sold off. Credit growth in general has been slow but with interest rates on 'safe' assets unusually low, monetary ease has spilt over into channels where the regulative demands could be minimised.

What a mess! Credit channels are hugely distorted by regulators and in general credit growth has been sabotaged, and with it the animal spirits that fire up economies, when they have access to credit. Central banks have printed vast amounts of money under QE, with the aim of sparking off

credit growth but the banks have simply parked the cash at the central banks. The result is anaemic, distorted growth. Then the regulators try to pick off bits of the picture of which they disapprove, such as credit card growth, whose behaviour has directly resulted from central bank actions.

We need to get totally away from this distorted world. President Trump, in his clumsy way, has identified bank regulation as one of the evils he wishes to abolish. How right he is and how we must hope he is successful in reversing the mad regulative backlash after the crisis. Basel regulations number 4 and the Bank for International Settlements' ever-increasing regulative scope is in his sights.

But here in the UK, as we leave the EU, we have the chance to set out and create a new regulative structure. We should begin by raising interest rates slowly so that we get money markets working more normally again. We should withdraw the Bank from its role as credit controller on each and every channel of monetary policy; credit controls always had a bad name but when they are renamed as 'macro-prudential policy', people are duped into thinking that this time they are different.

As the Bank's panic over credit card debt growth reveals, monetary policy does need to tighten. A 15% devaluation plus near-zero rates and continued QE adds up to a highly stimulative policy overall. So far the inflation response has been muted. But as inflation continues to exceed 2% the alarm bells should be ringing for the Monetary Policy Committee.

The world environment

Monetary policy is highly stimulative in all major economies and yet the world economy's growth rate is only now edging above 3% per annum. This is a puzzle; but its resolution lies along the lines just discussed for the UK. The way money has been printed has been distortionary. We have credit growth to 'normal companies' stunted by the ridiculous Basel risk-weightings which force banks to raise much more capital that would wreck their profitability. Meanwhile the dreadful balance sheets of many private banks are propped up all over the world by governments for whom massive bond buying has forced down real interest rates deep into negative territory. Think of near-bankrupt Deutsche Bank and Monte dei Paschi di Siena; or consider how many basically bankrupt Chinese state companies are being kept alive by the Chinese state. Governments have money to burn while decent private companies with good projects cannot borrow it. Basel has utterly wrecked the credit mechanism, blocking the major private credit channel and making it entirely cheap for bureaucrats to play God with useless banks or other clients.

To call this 'financial repression' seems too kind; but in essence the modern regulative agenda combined with massive QE amounts to exactly this where governments can play any games they like with impunity while good private companies, especially smaller ones, struggle and are repressed.

Meanwhile the world business cycle carries on along a long wave in which commodity prices continue depressed by past overprovision, benefiting final output producers in the developed world. We compute the typical length of these wave half-cycles at 20-30 years. This one began at the commodity price peak of 2007. If it hews to the typical pattern the next commodity price peak will not be until 2027-2037, and ironically the weak growth of the current upswing implies that it could well be towards the later end of that range. For companies that can survive, this is a reassuring prospect.

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THE UK ECONOMY

Vo Phuong Mai Le

Economic growth has slowed. Real GDP rose by 0.2% in Q1, after 0.7% in the previous quarter. There was slower growth in all sectors. Positive contributions came from the expansion of agriculture (0.3% in Q1 after +1% in Q4 2016) and total production (0.1% after 0.4% in Q4 2016). Both construction and total services increased by 0.2%, after increasing 1% and 0.8% , respectively, in Q4 2016.

On the demand side the highest positive contribution came from strong domestic demand. There was a big rise in the gross capital formation (1.2% in Q1 compared to 0.1% in Q4 2016) and a modest growth in private consumption (0.3% compared to 0.7% in Q4 2017). The main negative contribution to growth came from net trade. It reduced growth by 1.4 percentage points, as exports collapsed (falling 1.6% after rising 4.6% in Q4 2016) and imports surged (2.7% compared to -1.0% in Q4 2016). Trade can be volatile and there are well-known lags before devaluation kicks in to stimulate net trade; the CBI survey pointed to export optimism, which points to better prospects ahead.

In regards to Q2 2017, recent data and surveys signal a further expansion in economic activity. The UK manufacturing Purchasing Managers' Index (PMI) was at 56.7 in May, close to its three year-high level of 57.3 in April. The sector has been greatly benefited by higher domestic demand and the devaluation effect. The construction PMI rose to its highest level since December 2015, posting 56.0 in May, up sharply from 53.1 in April.

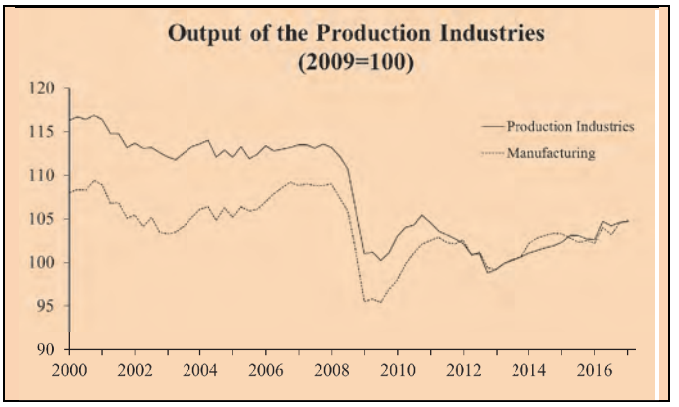
Labour market, Costs and Prices

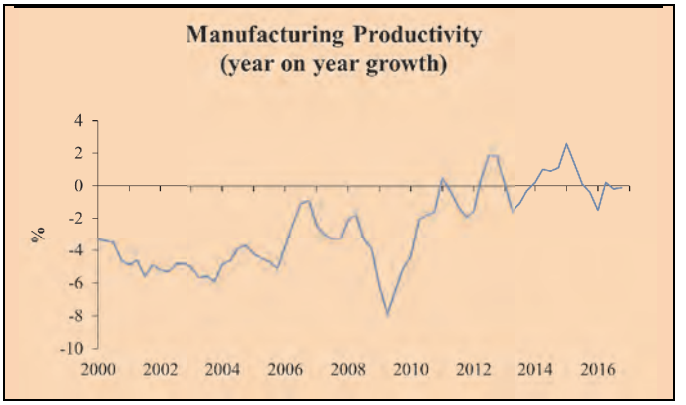
The labour market continued to improve. For Q1 2017, the employment rate was 74.8%, the highest ever since the data was collected. The unemployment rate fell to 4.6%, from 4.8% for the period of October-December 2016. Average weekly earnings rose by 2.4% yoy in Q1, up from 2.3% in the period from December to February.

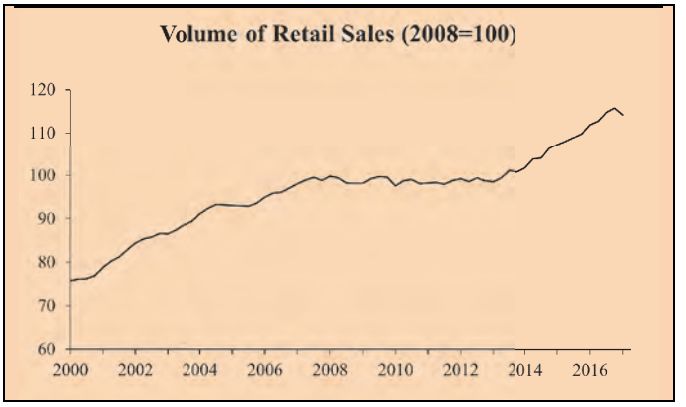
Annual CPI inflation has been rising steadily. It was 2.7% in April, up from 2.3% in March. The main contributor to this increase was air fares during the early Easter period. Lower sterling continued to drive up the annual input price inflation, but at a slower pace (16.6% in April, compared to the peak of 19.9% in January). Output price inflation was 3.6% yoy in April as producer pass-through got into its stride.

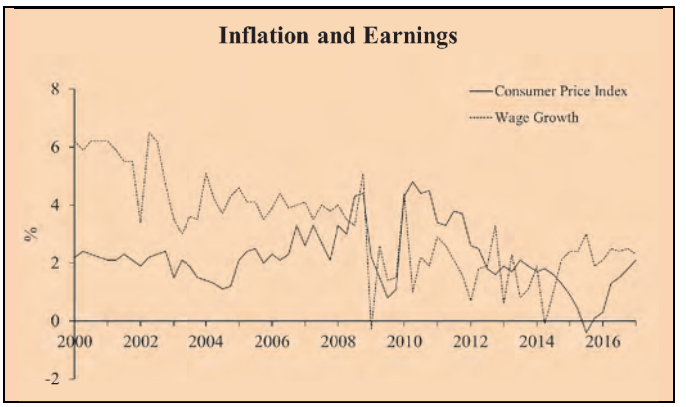
Fiscal and Monetary Developments

In the fiscal year to March 2017, public sector net borrowing excluding financial intervention decreased to £48.7 billion from £71.1 billion in the same period in 2016.





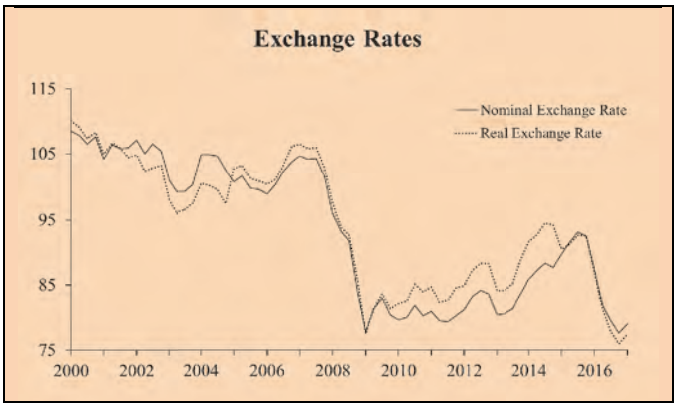


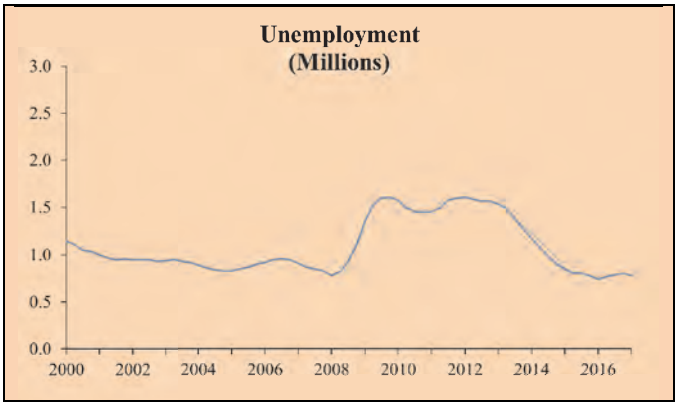


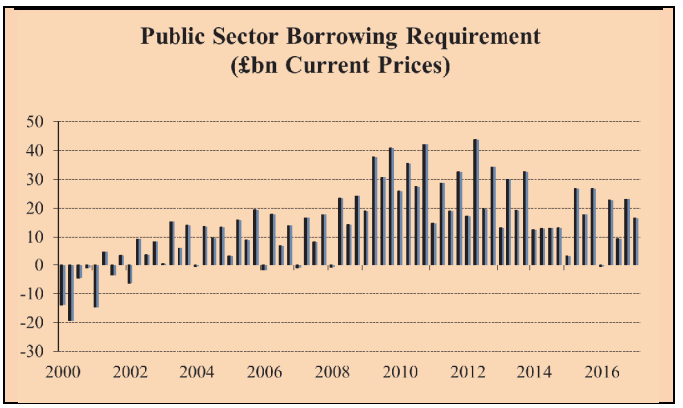
The public sector debt was £1593.2 billion (79.5% of GDP) at the end of April 2017. This is down from 81.1% of GDP at the end of April 2016.

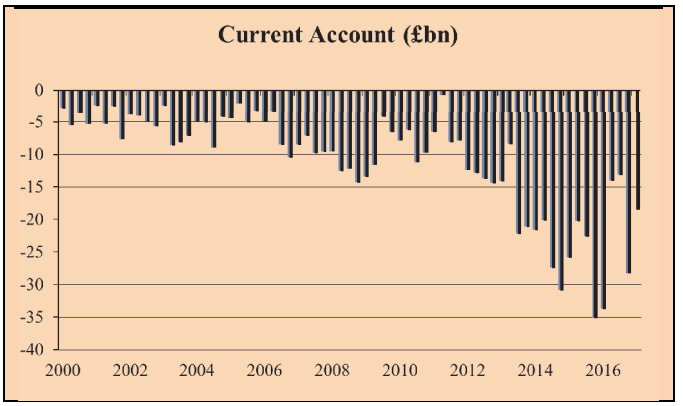
Given the slower Q1 growth the Bank of England at the May meeting decided to maintain its official Bank rate at 0.25%. It does not plan to run down its government bond holdings, now at £435 billion, nor its corporate bond holdings, currently at £10 billion.

The Bank is expecting inflation to be above the 2% target for the next three years due to the fall in sterling. The yoy growth of broad money (M4 excluding intermediate OFCs) was 7.3% in April, up from 6.7% in March. Credit to the private sector grew 4.9% yoy in April, compared to 4.6% in March. Overall the monetary conditions are therefore relatively loose; and so we expect the Bank to start tightening policy sooner rather than later.









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]
2015	0.2	1.3	0.6	91.6	91.6	0.5	1.0	-1.0
2016	1.2	0.9	0.4	81.5	80.4	-1.6	2.1	-1.5
2017	2.6	1.1	0.9	77.8	76.4	-1.7	3.2	-1.7
2018	2.6	2.0	1.5	76.1	75.1	-1.3	3.1	-1.0
2019	3.0	2.9	2.5	74.7	74.6	-0.1	3.4	0.0
2020	3.0	3.0	3.0	73.4	74.4	0.5	3.5	0.0
2015:1	0.9	1.1	0.5	89.6	90.3	0.2	1.0	0.8
2015:2	0.4	1.3	0.5	91.4	91.1	1.0	1.0	0.7
2015:3	-0.4	1.4	0.5	93.0	92.5	0.5	1.0	0.4
2015:4	0.1	1.3	0.6	92.3	92.4	0.3	1.1	0.0
2016:1	0.3	0.9	0.7	87.2	86.8	-1.1	1.4	-0.7
2016:2	1.3	0.9	0.5	81.8	81.2	-1.3	2.2	-0.9
2016:3	1.5	0.9	0.2	79.4	77.8	-1.7	2.3	-1.0
2016:4	1.8	0.9	0.2	77.6	75.9	-1.8	2.5	-1.2
2017:1	2.1	1.0	0.5	79	77.4	-1.6	2.8	-1.9
2017:2	2.6	1.2	0.5	78.7	77.4	-1.5	3.2	-1.9
2017:3	2.8	1.2	1.0	76.9	75.4	-1.5	3.3	-1.8
2017:4	3.0	1.2	1.5	76.6	75.4	-1.5	3.5	-1.3
2018:1	2.4	1.5	1.3	76.8	75.4	-1.5	3	-1.5
2018:2	2.4	2.0	1.5	76.5	75.4	-1.4	3	-1
2018:3	2.8	2.0	1.5	75.3	74.4	-1.5	3.3	-1
2018:4	2.8	2.5	1.5	75.7	75.4	-1.5	3.3	-0.5
2019:1	3.0	2.5	2.5	75.8	75.4	-0.5	3.4	-0.5
2019:2	3.0	3.0	2.5	74.7	74.4	-0.5	3.4	0.0
2019:3	3.0	3.0	2.5	74.2	74.4	-0.5	3.4	0.0
2019:4	3.0	3.0	2.5	73.9	74.4	-0.5	3.4	0.0
2020:1	3.0	3.0	3.0	74	74.4	0.5	3.4	0.0
2020:2	3.0	3.0	3.0	73.6	74.4	0.5	3.4	0.0
2020:3	3.0	3.0	3.0	73.2	74.4	0.5	3.5	0.0
2020:4	3.0	3.0	3.0	72.9	74.4	0.5	3.5	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)
2015	247.1	2.4	2.3	0.8	141.1
2016	254.3	2.9	2.1	0.7	143.5
2017	260.8	2.6	2.2	0.8	146.3
2018	270.1	3.6	2.1	0.8	150.8
2019	282.7	4.7	2.0	0.7	155.6
2020	295.3	4.5	1.9	0.7	159.5
2015:1	246.5	2.4	2.4	0.8	140.7
2015:2	245.7	2.4	2.3	0.8	140.4
2015:3	248.3	3.0	2.3	0.8	142.2
2015:4	247.7	1.9	2.2	0.8	141.1
2016:1	252.0	2.1	2.1	0.7	143.2
2016:2	252.1	2.5	2.2	0.8	142.7
2016:3	254.4	2.4	2.2	0.8	143.5
2016:4	254.3	2.5	2.3	0.8	142.5
2017:1	257.7	2.3	2.2	0.8	143.8
2017:2	259.8	3.1	2.2	0.8	144.6
2017:3	261.9	3.0	2.2	0.8	145.0
2017:4	263.4	3.6	2.2	0.8	144.6
2018:1	266.0	3.2	2.1	0.8	145.0
2018:2	267.9	3.1	2.1	0.8	145.6
2018:3	271.4	3.6	2.1	0.8	146.2
2018:4	275.0	4.4	2.0	0.7	147.0
2019:1	277.5	4.7	2.0	0.7	146.5
2019:2	281	4.8	2.0	0.7	147.2
2019:3	284.4	4.6	2.0	0.7	147.5
2019:4	287.8	4.5	2.0	0.7	148
2020:1	289.7	4.4	2.0	0.7	148.6
2020:2	293.3	4.4	2.0	0.7	149.2
2020:3	297.4	4.6	1.9	0.7	149.8
200:4	300.9	4.6	1.9	0.7	150.3

[1] Whole Economy
[2] Average Earnings
[3] Wholly unemployed excluding school leavers as percentage of employed and unemployed, self employed and HM Forces
[4] Wage rate deflated by CPI

Estimates and Projections of the Gross Domestic Product[1] (£ Million 1990 Prices)

	Expenditure Index	£ Million '90 prices	Non-Durable Consumption[2]	Private Sector Gross Investment Expenditure[3]	Public Authority Expenditure[4]	Net Exports[5]	AFC
2015	156.6	749967.5	431566.6	302272.7	196715.2	-55478.9	125108.2
2016	159.4	763130.9	440238.4	297248	198473.7	-55145.2	117683.9
2017	162.8	779402.5	446095.3	298827.5	200306.8	-42005.9	123820.5
2018	167	799576.9	454472.1	301227.3	202244.4	-31221.1	127143.1
2019	171.8	822562.9	464450.3	299441.2	204673.1	-14990.3	131002.4
2000	177.7	851177.9	475121.2	310937.8	208527	-7612.7	135809.6
2015/14	2.2		1.6	3.8	1.1		-2.3
2016/15	2.3		3.3	-6.3	1..0		-3.7
2017/16	2.1		1.3	0.5	0.9		3.5
2018/17	2.6		1.9	0.8	1.0		2.7
2019/18	2.9		2.2	-0.6	1.2		3.0
2020/19	3.5		2.3	3.9	1.9		3.7
2015:1	155.5	186173.7	106852.9	76506.7	50170.8	-14505.3	32851.5
2015:2	156.2	186957.5	107512.3	73634.8	48473.5	-12870.7	29792.5
2015:3	156.8	187777.3	108377.3	75591.7	48980.7	-14141.8	31030.6
2015:4	157.9	189059.0	108824.1	76539.6	49090.3	-13961.2	31433.8
2016:1	158.1	189138.4	108678.4	72398.4	50736.1	-13542	29132.6
2016:2	158.9	190275.7	109825.3	73785	48907.3	-12813.4	29428.6
2016:3	159.7	191226.4	110456.6	75298	49388.4	-16711.1	27205.5
2016:4	160.8	192490.5	111278.1	75766.5	49441.8	-12078.7	31917.3
2017:1	161.3	193068.3	110289.9	73007.2	51174.2	-10116.5	31287.1
2017:2	162.2	194226.4	111206.1	74520.6	49141.5	-10103.9	30538.0
2017:3	163.3	195469.2	111967	75369.8	49891.8	-11094.1	30664.8
2017:4	164.2	196638.6	112632.2	75930	50099.3	-10691.5	31330.6
2018:1	165.6	198242.7	112567.2	73572.7	51892.3	-8179.1	31610.3
2018:2	166.6	199460.3	113264.8	76217	49423.6	-7778.1	31666.7
2018:3	167.2	200136.3	113966.8	74803.9	50232.4	-7096.8	31769.2
2018:4	168.5	201737.9	114673.1	76633.7	50696.1	-8167.1	32097
2019:1	170.9	204654.6	115038.7	75470.1	52228.7	-5496.3	32586.1
2019:2	171.2	205014	115751.7	75678	50111.4	-3888.0	32638.2
2019:3	171.6	205473.1	116469	73868.5	50931.5	-3072.7	32721.9
2019:4	173.3	207426.6	117190.9	74424.6	51401.6	-2533.3	33056.1
2020:1	176.2	210945.3	117681.8	75501.8	53807.3	-2411.1	33635.6
2020:2	176.7	211555.9	118411.1	78040.4	50859.3	-2010.1	33746.6
2020:3	178.2	213320.4	119144.9	78256.8	51691.6	-1731.3	34043.3
2020:4	179.9	215347.9	119883.4	79138.9	52168.8	-1460.2	34384.1

[1] GDP at factor cost. Expenditure measure; seasonally adjusted
[2] Consumers expenditure less expenditure on durables and housing
[3] Private gross domestic capital formation plus household expenditure on durables and clothing plus private sector stock building
[4] General government current and capital expenditure including stock building
[5] Exports of goods and services less imports of goods and services

Financial Forecast

	PSBR/GDP %[1]	GDP[1] (£bn)	PSBR (£bn) Financial Year	Debt Interest (£bn)	Current Account (£ bn)
2015	4.6	1533.1	71.2	52.0	-103.7
2016	4.3	1592.4	69.0	52.3	-89.0
2017	3.2	1662.4	53.4	55.7	-63.7
2018	2.5	1756.4	44.8	61.6	-44.9
2019	2.0	1861.6	37.2	66.6	-14.4
2020	0.7	1477.6	12.8	51.5	0.5
2015:1	0.8	383.9	3.1	12.6	-25.8
2015:2	7.1	379.3	26.9	12.8	-20.2
2015:3	4.7	382.0	17.8	13.0	-22.6
2015:4	7.0	387.2	26.9	13.1	-35.1
2016:1	-0.1	384.6	-0.5	13.1	-33.7
2016:2	5.8	392.0	22.9	13.1	-14.0
2016:3	2.4	394.5	9.5	12.9	-13.1
2016:4	5.8	402.2	23.2	13.0	-28.2
2017:1	4.1	403.3	16.6	13.1	-18.4
2017:2	3.0	407.5	12.2	13.2	-17.6
2017:3	3.2	412.4	13.1	13.7	-17.2
2017:4	3.1	419.3	13.1	14.3	-10.4
2018:1	3.6	423.3	15.1	14.4	-15.3
2018:2	2.4	429.2	10.2	14.9	-13.8
2018:3	2.6	434.9	11.3	15.1	-10.1
2018:4	2.6	442.2	11.4	15.7	-5.7
2019:1	2.7	450.1	12	15.8	-10.5
2019:2	1.8	454.7	8.2	16.4	-6.7
2019:3	2.1	460.2	9.5	16.6	-2.4
2019:4	1.9	468.6	8.9	16.8	5.2
2020:1	2.2	478.1	10.7	16.9	-4.7
2020:2	0.9	483.6	4.4	17.0	-3.0
2020:3	0.9	492.5	4.6	17.2	0.4
2020:4	0.8	501.5	3.8	17.3	7.7

[1] GDP at market prices (Financial Year)

THE WORLD ECONOMY

US

The economy continued to grow, but at a slower pace. The quarter-on-quarter (qoq) GDP growth was 0.4% in Q1 2017, compared to over 0.5% in Q4 2016. The overall Q1 growth was driven by increases in domestic and foreign demand. Real consumption increased 0.15% qoq, down from 0.9% in Q4 2016. Fixed investment rose sharply, by 3%, up from 0.75% in the previous quarter. Net exports contributed positively, as exports rose by 1.45% (from -1.1% in Q4 2016), dominating the increase in imports of 0.95% (compared to 2.25% in Q4 2016).

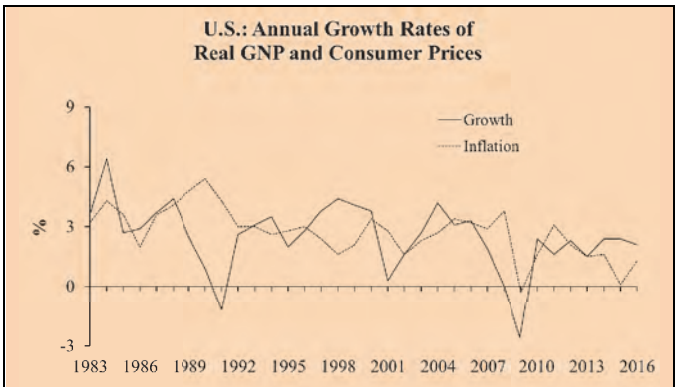
The labour market also continued to strengthen. Total non-farm payroll employment increased further by 211,000 in April. The unemployment rate was 4.4%, down from 4.7% and 4.5% in February and March, respectively. A strong labour market generated a further increase in wages. Average hourly earnings rose by 2.5% yoy in April.

The economic outlook for the second quarter continues to be positive. The Markit US composite PMI output index was 53.9 in May (compared to 53.2 in April). This is the strongest increase in private sector output since February. This faster business activity growth was driven by the expansion in the service sector (its PMI was 54.0 in May, up from 53.1% in April). The manufacturing sector continued to grow, but at the lowest pace in 8 months; its PMI was 52.5 in May, down from 52.8 in April.

In March, the FOMC increased the Fed funds target rate by 25 basis points. The Fed started its process of normalising monetary policy by slowly increasing its official bank rate. In the May meeting, the committee recognised that economic growth was slower in the first quarter which could have been caused by changes in monetary policy. The adjustments would continue. Other judgements were that the labour market would strengthen further and inflation would stabilise at 2% over the medium term. The policy aims to be accommodative and thus the rates were kept unchanged from the previous meeting..

Japan

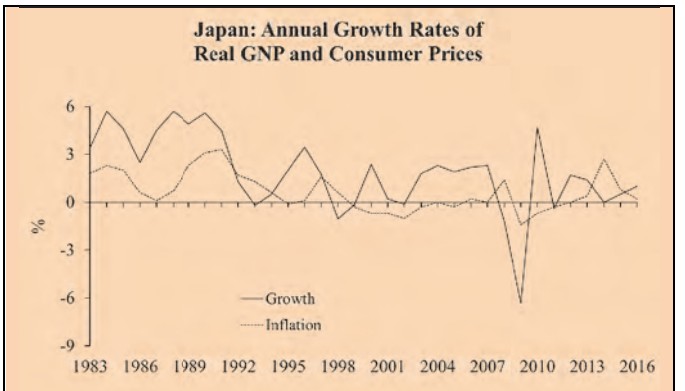
Economic growth accelerated at the beginning of 2017. Real GDP grow 0.5% after 0.3% in Q4 2016. The growth was due to a further expansion in foreign demand and a return of growth in domestic demand. Private consumption rose 0.4% after 0% in Q4 2016. Investment grew 0.7% from 0.4% in the previous quarter. Net exports continued to expand, but at a slower pace. They contributed 0.1 percentage points to the Q1 growth rate, compared to 0.4% to the previous quarter's. Exports rose 2.1% (down from 3.4% in Q4 2016), while imports decreased 0.2% (down from +1.3% in Q4 2016).



US

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	1.5	2.4	2.4	2.1	2.1	2.4
Inflation (% p.a.)	1.5	1.6	0.1	1.3	2.4	2.2
Real Short Int. Rate	–1.5	–0.1	–1.1	–1.4	–1.1	–0.4
Nominal Short Int. Rate	0.1	0.0	0.2	1.0	1.3	1.5
Real Long Int. Rate	1.6	0.7	0.3	0.3	0.5	1.0
Nominal Long Int. Rate	3.0	2.2	2.2	2.4	2.8	3.0
Real Ex. Rate (2000=100)[1]	82.1	83.9	93.0	94.0	94.5	94.8
Nominal Ex. Rate[2]	86.00	89.40	99.94	101.9	102.0	102.4

[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 of the real exchange rate.
[2] The series for the USA is a trade weighted index (1990=100)



Japan

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	1.4	–0.1	0.5	1.0	1.4	1.1
Inflation (% p.a.)	0.4	2.7	0.8	0.2	.07	1.0
Real Short Int. Rate	–2.5	–0.6	0.0	–0.7	–1.0	–1.5
Nominal Short Int. Rate	0.2	0.2	0.2	0.0	0.0	0.0
Real Long Int. Rate	–0.8	–1.1	–1.3	–1.2	–1.3	–1.5
Nominal Long Int. Rate	0.7	0.3	0.3	0.0	0.1	0.1
Real Ex. Rate (2000=100)[1]	63.5	59.8	56.0	58.4	58.3	58.1
Nominal Ex. Rate	98.2	106.7	120.0	118.4	113.5	115.2

[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 of the real exchange rate.

The inflation rate was still far below the target of 2%. The yoy CPI inflation was 0.4% in April, up from 0.2% in March. Therefore, the Bank of Japan at the April meeting left its monetary policy unchanged. It stuck with its expansionary measures by keeping its target for 10-year bond yields at around zero, leaving a short-term interest at -0.1%. It committed to continue to buy government bonds at around 80 billion yen per year.

Germany

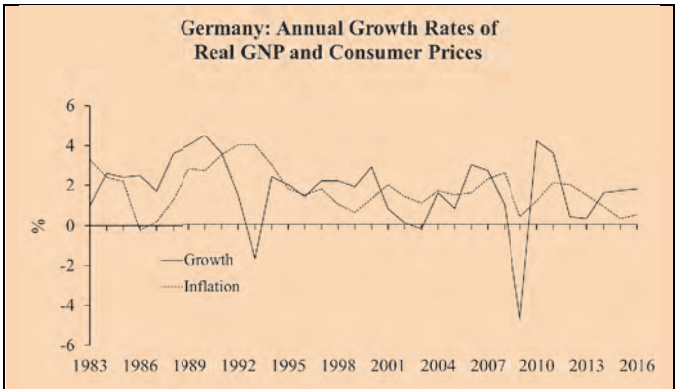
The economy continued to expand. Real GDP rose 0.6% in Q1, up from 0.4% in Q4 2016. The positive contributions came from strong domestic and foreign demand. Private consumption rose 0.3%, up from 0.2% in Q4 2016. Gross capital formation increased 1.7% in Q1, up from 0.4% in Q4 2016. Net exports contributed 0.4 percentage points to quarterly growth, as exports continued to expand (1.3% after 1.7% in the previous quarter), while imports decelerated (0.4% down from 2.5%).

Economic conditions are favourable. The labour market continues to be robust. Germany enjoys a very low rate of unemployment (3.9% in April, unchanged from March). The German business confidence index increased to 114.6 in May from 113.0 in April- it is now at its highest level for six years. The consumer confidence index was 10.2 in May, up from 9.8 in April. The composite PMI index rose to 57.3 in May, up from 56.7 in April. This is also the highest reading in over six years. All in all, recent indicators signal that the growth momentum is set to continue.

France

Economic growth lost a bit of momentum in Q1 2017. Real GDP grew 0.3% compared to 0.5% in Q4 2016. The general election uncertainty impacted on the economic outcome at the beginning of the year. Private consumption increased 0.1%, down from 0.6% in Q4 2016. However, investment accelerated again with a 0.9% increase in Q1, up from 0.4% in Q4 2016. Overall, domestic demand excluding inventory investment contributed 0.4 percentage points to GDP growth, marginally down from 0.5% in the previous quarter. The negative contribution to growth came from net trade (-0.7 points, after +0.2 points in Q4 2016), as exports fell significantly (-0.7% after 1.4% in Q4 2016) and imports increased (1.5% after 0.8% in Q4 2016).

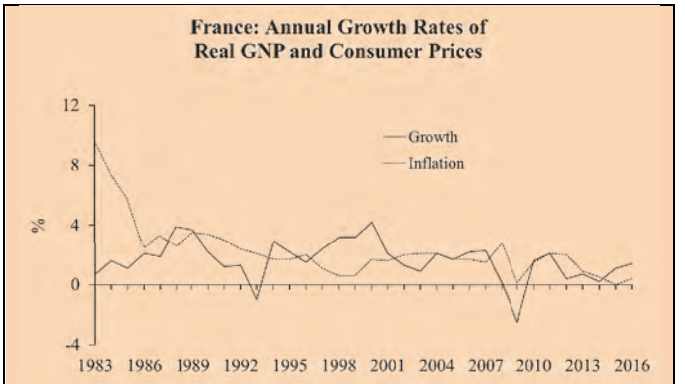
The labour market showed some signs of strengthening. The unemployment dropped sharply to 9.6% in Q1 2017, from 10% in Q4 2016. This is the lowest rate for five years. This improvement is expected to continue. Both growth and employment prospects looked stronger and better in Q2 than in Q1. The business sentiment index rose to 105 in May from 104 in April, and the employment climate index was 108, up from 106 in April.



German

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	0.3	1.6	1.7	1.8	1.6	1.6
Inflation (% p.a.)	1.5	0.9	0.3	0.5	1.8	1.7
Real Short Int. Rate	–0.6	–0.2	–0.6	–2.0	–2.0	–2.2
Nominal Short Int. Rate	0.3	0.1	–0.1	–0.2	–0.3	–0.2
Real Long Int. Rate	0.8	–0.8	–1.0	–1.6	–1.4	–1.2
Nominal Long Int. Rate	1.9	0.5	0.6	0.4	0.5	0.8
Real Ex. Rate (2000=100)[1]	99.0	99.9	94.7	95.0	94.3	94.9
Nominal Ex. Rate	0.75	0.76	0.90	0.95	0.93	0.92

[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 of the real exchange rate.



France

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	0.7	0.2	1.1	1.4	1.4	1.5
Inflation (% p.a.)	0.9	0.5	0.0	0.4	1.3	1.3
Real Short Int. Rate	–0.2	0.1	–0.5	–1.5	–1.6	–1.8
Nominal Short Int. Rate	0.3	0.1	–0.1	–0.2	–0.3	–0.2
Real Long Int. Rate	1.1	–0.5	–0.8	–1.4	–1.0	–0.8
Nominal Long Int. Rate	1.9	0.5	0.6	0.4	0.9	1.2
Real Ex. Rate (2000=100)[1]	100.7	100.8	96.2	96.0	95.4	95.2
Nominal Ex. Rate[2]	0.75	0.76	0.90	0.95	0.93	0.92

[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 of the real exchange rate.

Italy

Economic activity continued to expand modestly at the beginning of 2017. Real GDP grew 0.2% after +0.2% in Q4 2016. Recent surveys however signal a very uncertain economic prospect for Q2. The confidence climate index was 105.4 in May, down from 107.4 in April. The composite business confidence climate index fell to 106.2 from 106.8 in April.

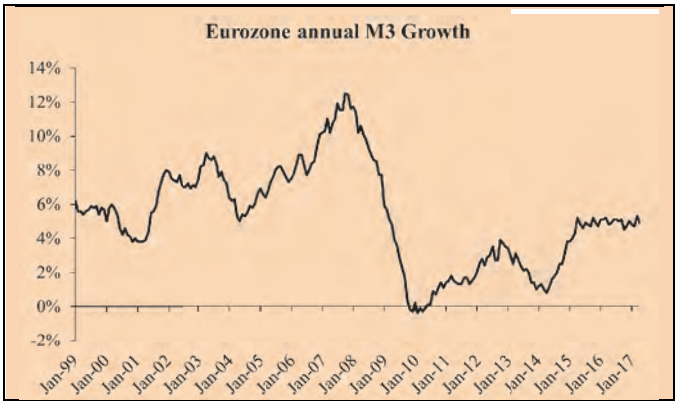
Euro-zone monetary policy

There was no change in monetary policy at the April ECB meeting. The ECB decided to maintain its interest rates on the main refinancing operations, the marginal lending facility and deposit facility at 0.0%, 0.25% and -0.4%, respectively. It expects to continue with these interest rates levels for an extended period of time. On the nonconventional monetary policy, it confirmed that its net asset purchases at the newly approved monthly of 60 billion euro would run beyond the end of December 2017 if necessary to adjust the path of inflation to be consistent with its inflation target.

Italy

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	–1.7	–0.3	0.8	1.1	0.9	0.9
Inflation (% p.a.)	1.2	0.2	0.1	0.2	1.4	1.7
Real Short Int. Rate	0.1	0.0	–0.3	–1.6	–1.6	–1.9
Nominal Short Int. Rate	0.3	0.1	–0.1	–0.2	–0.3	–0.2
Real Long Int. Rate	1.2	–0.5	–0.7	–1.3	0.4	0.6
Nominal Long Int. Rate	1.9	0.5	0.6	0.4	2.3	2.6
Real Ex. Rate (2000=100)[1]	106.9	107.5	102.1	102.0	101.2	101.1
Nominal Ex. Rate[2]	0.75	0.76	0.90	0.95	0.93	0.92

[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 of the real exchange rate.



WORLD FORECAST DETAIL

Growth Of Real GNP

	2013	2014	2015	2016	2017	2018
U.S.A.	1.5	2.4	2.4	2.1	2.1	2.4
U.K.	2.2	2.9	2.2	1.8	2.3	2.7
Japan	1.4	–0.1	0.5	1.0	1.4	1.1
Germany	0.3	1.6	1.7	1.8	1.6	1.6
France	0.7	0.2	1.1	1.4	1.4	1.5
Italy	–1.7	–0.3	0.8	1.1	0.9	0.9

Growth Of Consumer Prices

	2013	2014	2015	2016	2017	2018
U.S.A.	1.5	1.6	0.1	1.3	2.4	2.2
U.K.	2.3	1.7	0.2	1.2	2.6	2.6
Japan	0.4	2.7	0.8	0.2	0.7	1.0
Germany	1.5	0.9	0.3	0.5	1.8	1.7
France	0.9	0.5	0.0	0.4	1.3	1.3
Italy	1.2	0.2	0.1	0.2	1.4	1.3

Real Short-Term Interest Rates

	2013	2014	2015	2016	2017	2018
U.S.A.	–1.5	–0.1	–1.1	–1.4	–1.1	–0.4
U.K.	–0.8	–2.2	-1.0	–1.6	–1.7	–1.3
Japan	–2.5	–0.6	0.0	–0.7	–1.0	–1.5
Germany	–0.6	–0.2	–0.6	–2.0	–2.0	–2.2
France	–0.2	0.1	–0.5	–1.5	–1.6	–1.8
Italy	0.1	0.0	–0.3	–1.6	–1.6	–1.9

Nominal Short-Term Interest Rates

	2013	2014	2015	2016	2017	2018
U.S.A.	0.1	0.0	0.2	1.0	1.1	1.6
U.K.	0.6	0.6	0.6	0.4	0.9	1.5
Japan	0.2	0.2	0.2	0.0	0.0	0.0
Germany	0.3	0.1	–0.1	–0.2	–0.3	–0.2
France	0.3	0.1	–0.1	–0.2	–0.3	–0.2
Italy	0.3	0.1	–0.1	–0.2	–0.3	–0.2

Real Long-Term Interest Rates

	2013	2014	2015	2016	2017	2018
U.S.A.	1.6	0.7	0.3	0.3	0.5	1.0
U.K.	–0.8	–0.7	–1.0	–1.5	–1.7	–1.0
Japan	–0.8	–1.1	–1.3	–1.2	–1.3	–1.5
Germany	0.8	–0.8	–1.0	–1.6	–1.4	–1.2
France	1.1	–0.5	–0.8	–1.4	–1.0	–0.8
Italy	1.2	–0.5	–0.7	–1.3	0.4	0.6

Nominal Long-Term Interest Rates

	2013	2014	2015	2016	2017	2018
U.S.A.	3.0	2.2	2.2	2.4	2.6	3.0
U.K.	1.3	1.8	1.3	0.7	1.1	2.0
Japan	0.7	0.3	0.3	0.0	0.1	0.1
Germany	1.9	0.5	0.6	0.4	0.5	0.8
France	1.9	0.5	0.6	0.4	0.9	1.2
Italy	1.9	0.5	0.6	0.4	2.3	2.6

Index Of Real Exchange Rate(2000=100)[1]

	2013	2014	2015	2016	2017	2018
U.S.A.	82.1	83.9	93.0	94.0	94.5	94.8
U.K.	86.5	93.1	91.6	80.4	76.4	75.1
Japan	63.5	59.8	56.0	58.4	58.3	58.1
Germany	99.0	99.9	94.7	95.0	94.3	94.9
France	100.7	100.8	96.2	96.0	95.4	95.2
Italy	106.9	107.5	102.1	102.0	101.2	101.1

[1] The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation in the real exchange rate.

Nominal Exchange Rate (Number of Units of Local Currency To $1)

	2013	2014	2015	2016	2017	2018
U.S.A.[1]	85.61	89.04	103.08	101.91	102.20	102.40
U.K.	1.55	1.65	1.53	1.35	1.28	1.26
Japan	98.20	106.70	120.00	118.40	113.50	115.20
Eurozone	0.75	0.76	0.90	0.95	0.93	0.92

[1] The series for the USA is a trade weighted index (1990=100); the series for the UK is $ per £

* Forecasts based on the Liverpool World Model

EMERGING MARKETS

Anupam Rastogi

India

The Indian economy grew 6.1% in the first three months of the year compared with the same period last year. This compared with 7% growth in the previous quarter. The economy was hurt by weaker manufacturing and construction activity. GDP growth for the fiscal year ended March 31, however, was in line with the government's 7.1% projection made in February 2017. The economy grew 8% in the previous year. We expect the economy to grow 7.5% in the current fiscal year despite introduction of the nationwide Goods and Services Tax (GST) which may disrupt the economy marginally.

The optimism related to the Government continues as the BJP-led government enters the 4th year. Electorates have given the Government a pat on the back, applauded them for GST — a major tax reform. There is enough political stability and investors are hoping that the present government will continue for another five years after 2019. Markets are going up sensing the long-term political stability in India. FIIs are exuding confidence in the Indian economy. Corporate earnings in some sectors have been encouraging. Prediction of normal monsoon has further boosted optimism. Moreover, the US Federal Reserve is not in a hurry to raise interest rates.

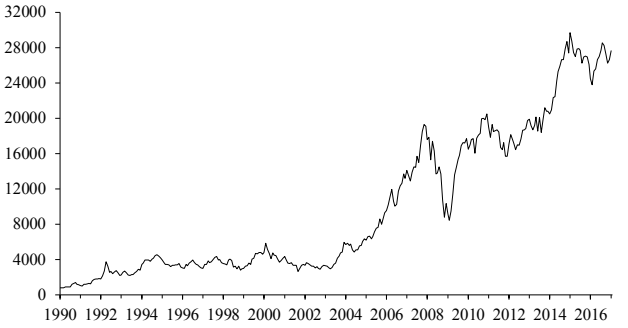
The central bank expects retail inflation to fall to 2–3.5% in the first half of the current fiscal and move up to 4.5% in the second half. In its bi-monthly Monetary Policy Committee meeting, warned the government that rush for farm loan waivers might have inflationary spillovers. The rise in the rupee is helping the central bank to control inflation.

Exports grew 17% during the quarter and the agricultural area sown during the winter crop rose about 6%.

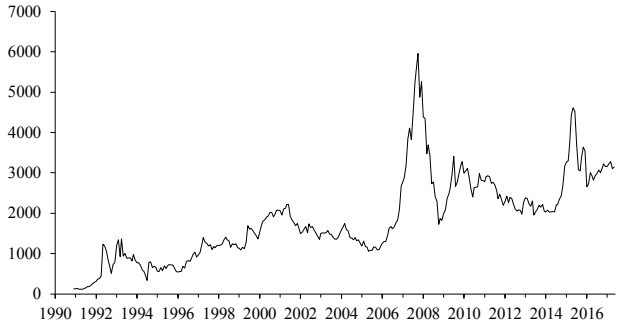
In order to deal with the stressed assets' in the banking system, the government has amended some sections of the Banking Regulations Act, empowering the Reserve Bank of India to issue directives to commercial banks to resolve the issue of nonperforming assets in a "time-bound manner". The new law also permits the RBI to prod banks to initiate insolvency proceedings against debtors in an effort to speed up debt recovery.

Indian equities have been performing well since Modi's party won state elections in April. Investors are now looking forward to the rollout of India's new goods-and-services tax on July 1. The tax neutral rates and

India: BSE Sensitive



China: SSE Composite Index



simplification of the tax structure may boost India's growth rate by as much as 2 percentage points.

	15–16	16–17	17–18	18–19	19–20
GDP (%p.a.)	8.0	7.1	7.5	8.0	8.1
WPI (%p.a.)	5.2	4.5	4.0	4.0	4.1
Current A/c(US$ bill.)	-24.0	-24.0	-26.0	-28.0	-30.0
Rs./$(nom.)	66.5	68.2	67.0	68.0	69.0

China

China is preparing for its next National Congress in October 2017, where a reshuffle in the Politburo and further consolidation in the hands of President and Party Chairman Xi Jinping is expected. China may exceed the six and a half percent growth target this year as the government seeks to create a very positive backdrop ahead of this important political event. However, for the time being we maintain our forecast for GDP growth at 6.3%. The Caixin China manufacturing purchasing managers index fell to 49.6 in May from 50.3 in April, indicating a decline in manufacturing activity.

There are many signs on the horizon indicating that China's massive economic engine is losing steam after achieving 6.9% growth in the first quarter. Industrial metal prices have fallen in recent weeks; auto sales declined at twice the pace in April as in March; Official purchasing managers'

indexes weakened last month; and inventory restocking has slowed.

Property sales also decelerated sharply in April year on year, increasing at their slowest pace in over two years, and construction starts have weakened.

Besides short-term fluctuations, Beijing is grappling with two thorny structural problems: soaring property prices and debt levels after years of fiscal spending and easy-money policies.

Moody's Investors Service cut China's sovereign credit rating for the first time in nearly three decades, citing expectations that the country's financial strength will deteriorate in the coming years as debt keeps rising and the economy slows. Moody's downgraded China's rating to A1 from Aa3, while changing its outlook to stable from negative. In March 2016, it had cut China's outlook to negative from stable.

An accommodative monetary policy and robust state spending over many years have also fuelled excess production capacity in industries such as glass and steel, which has diverted funding to "zombie" companies rather than to promising firms in the real economy. Once Chinese companies run into trouble with their overseas debt, the yuan will be under pressure.

Moody has highlighted that the problems faced by China today are the same Japan faced in the early 1990s. Like Japan, heavy capital-spending levels have been central to China's growth — investment accounted for nearly half of China's annual growth by 2010, up from a third in 1990. A sharp run-up in real-estate prices, far outpacing any rises in family income or office rents, is one common point between China of today and Japan of the late 1980s. After Moody's decision to downgrade China, the two countries at least now have sovereign credit ratings, at A1, to match.

On June 1, the central bank set the dollar's daily midpoint for trading at 6.8090 yuan, the strongest level since November 10. The sharply higher "fix," which came on top of the currency's surge a day earlier, has helped the yuan register a 2% gain against the dollar so far this year. Keeping the yuan relatively stable versus the dollar, is critical for Beijing prior to the congress meet in October. The central bank's move suggests that "coping with capital outflows remains a key challenge for Chinese authorities".

Consumer inflation in China remained mild in April, edging up on higher costs for rent, education and other nonfood items, while producer prices rose at a slower pace in a sign of weak underlying demand. The consumer-price index was up 1.2% from a year earlier. China's trade surplus widened in April, though both exports and imports grew less than expected. Exports rose 8% from a year

Korea: Composite Index

earlier compared with 16.4% in March. Imports climbed 11.9%, also below forecasts, after a 20.3% rise in March. China's trade surplus increased to $38.05 billion from $23.93 billion the previous month. Nevertheless, China remained the world's largest exporter in 2016 for the eighth consecutive year, accounting for 13% of the global total even as exports become a less-important growth driver for the country. Exports accounted for 18% of China's economy last year, down from a peak above 32% in 2006.

	15	16	17	18	19
GDP (%p.a.)	6.9	6.5	6.3	5.8	5.5
Inflation (%p.a.)	1.4	2.0	2.2	2.0	2.1
Trade Balance(US$ bill.)	550	510	400	380	350
Rmb/$(nom.)	6.4	6.7	7.1	7.3	7.5

South Korea

The economy is forecast to grow 2.5% this year after expanding 2.8% in 2016. The economy is gaining from strength in exports, but its domestic demand remains weak. The extra budget spending may add 0.2 percentage point to annual growth this year and next. Funding for the extra budget will mainly come from surplus tax revenue and state funds from the previous fiscal year. South Korea's new liberal administration under President Moon Jae-in announced a $10 billion supplement to its national budget to create more jobs and spur economic growth. The slightly bigger-than-expected additional government spending plan, which is scheduled to be sent to the National Assembly for approval, comes as job creation takes centre stage in Mr. Moon's economic policy.

The left-leaning leader was elected last month on a pledge to create 810,000 new public-sector jobs during his five-year term, underlining a bigger government role in boosting soft domestic demand and reversing high youth unemployment. Mr. Moon wants to raise taxes on the wealthy and large companies, increase the minimum wage, and force companies to give temporary workers permanent status and reduce working hours.

The Bank of Korea left interest rates unchanged for the time being, maintaining its support for the economy for

now. The bank in April said it expects gross domestic product to expand 2.6% in 2017, slightly faster than its earlier estimate of 2.5% growth. But, the U.S. policy tightening points toward an eventual rate increase in the coming months.

Exports, which account for around half of the country's economy, jumped 24% year over year in April for a sixth-straight month of growth. Overseas shipments are likely to expand in May.

South Korea's new president has appointed an outspoken critic of the country's family-controlled business empires to a key government post, a move that signals a tougher regulatory approach to conglomerates such as Samsung, Hyundai Motor and LG. He will head the Korea Fair Trade Commission, the country's antitrust watchdog. Under Mr. Kim, the regulator is expected to aggressively curb common chaebol practices, such as internal deals within conglomerates and the use of cross-shareholdings by family owners to expand their hold over companies

Mr. Moon's desire to appease North Korea marks a return to the Sunshine Policy that failed in the mid-2000s when he was an aide to centre-left President Roh Moo-hyun. Mr. Moon wants to pursue reunification based on economic integration, offering a formal peace process if the North will give up its nuclear weapons.

The Kospi Composite Index has been performing strongly this year. It has gained more than 13% since January 1, 2017.

	15	**16**	**17**	**18**	**19**
GDP (%p.a.)	2.6	2.8	2.5	2.5	2.5
Inflation (%p.a.)	0.7	1.0	1.6	1.2	1.3
Current A/c(US$ bill.)	90.0	88.0	88.0	86.0	80.0
Won/$(nom.)	1180	1160	1140	1140	1130

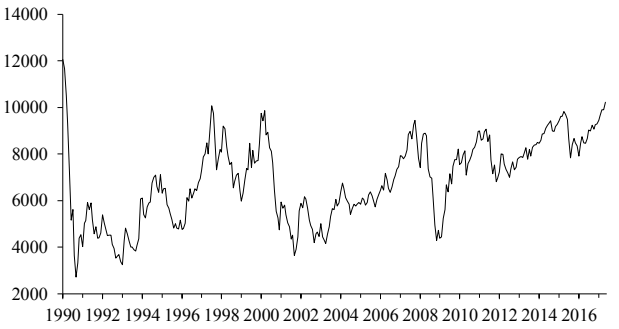
Taiwan

The Nikkei-Markit manufacturing purchasing managers' index dipped to 53.1 in May, down 1.3 points from April's reading. However, Taiwan is benefitting from the improvement of world trade and we expect it to expand 2.5% in 2017.

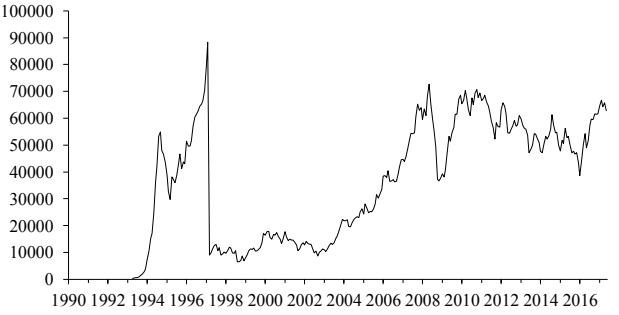
Inflation in Taiwan slowed down further in April as price growth for fuels, lubricants, tobacco and betel nuts were offset by falling food prices. The consumer price index rose 0.12% year on year in April, slowing from a 0.18% pace in March.

Taiwan's central bank acknowledged in March that a stronger new Taiwan dollar "has put domestic financial conditions under strains," and said it would step in if capital flows lead to extreme volatility or disorderly moves.

Taiwan: Weighted TAIEX Price Index



Brazil: Bovespa



The Taipei stock market index breached 10,000 and it remains to be seen if it would sustain it. Of the Taiex's previous periods above that level — in 1990, 1997, 2000 and 2015 — the latter three lasted no more than 20 days and all gave way to corrections or bear markets. The most dramatic of those saw it shed four-fifths of its value in just eight months after hitting its all-time high at 12,495.3 in February 1990.

	15	**16**	**17**	**18**	**19**
GDP (%p.a.)	0.8	1.4	2.5	2.6	2.3
Inflation (%p.a.)	0.7	1.0	1.0	1.0	1.2
Current A/c(US$ bill.)	60.0	64.0	68.0	68.0	70.0
NT$/$(nom.)	32.8	32.5	32.0	32.0	32.0

Brazil

Brazil's economy expanded 1.0% quarter on quarter in the three months of 2017, even though the economy shrank 0.4% in the first quarter from a year earlier. With this the economy has emerged from its worst recession on record. A rebound in trade growth from post-Lehman crisis lows should help perk up the Brazilian economy in 2017. Stabilized commodity prices are allowing Brazil pull out of a two-year long recession.

The outlook for other parts of the economy is still poor. Joblessness hit 13.6% in the three-month period through April, compared with 7.1% in the same period in 2015. Household spending fell 0.1% in the first three months of the year. Business investment declined 1.6%, and

government spending shrank 0.6%. Services were stagnant in the quarter.

Brazil's central bank continues its cycle of rate cuts as a political crisis threatens to cripple a budding economic recovery. The bank cut its benchmark Selic rate to 10.25% from 11.25%, continuing a reduction in borrowing costs started in October. The year-end Selic rate may be as low as 8.5%.

Moody's Investors Service lowered its outlook on Brazil credit to negative from stable. The credit rating agency maintained its Brazil issuer rating of Ba2, two notches below investment grade. The S&P Global Ratings has warned Brazil that that it may cut the country's sovereign debt rating because of its troubled political situation. S&P currently rates Brazil at BB, two steps below investment grade.

President Michel Temer faces his biggest test as Brazil's top electoral court begins a landmark trial to rule on whether to strip him of the presidency over alleged illegal campaign financing. It is widely believed that the conservative court was reluctant to topple the business-friendly president and plunge Brazil into a new crisis just as the country emerges from its worst recession on record. Jury is out whether Mr. Temer can survive politically and win public opinion.

The pension plan, though unpopular with many Brazilians, won the approval of financial markets, and investment money has flowed into the country's stock market this year, helping it to lift the benchmark Ibovespa stocks index by 14% from the start of the year through May 16.

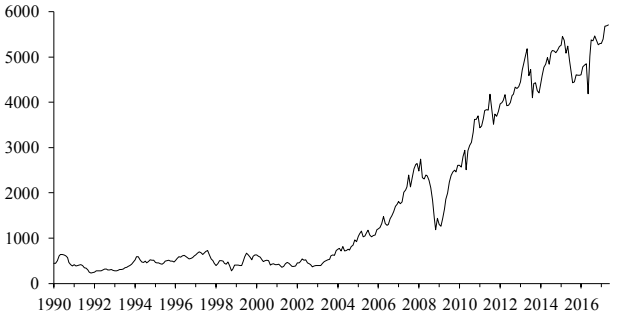
The real weakened 7% against the dollar on fears that the political crisis would torpedo the government's crucial reform programme to overhaul Brazil's sinking public finances.

	15	**16**	**17**	**18**	**19**
GDP (%p.a.)	-3.8	-3.6	0.5	1.5	3.0
Inflation (%p.a.)	10.7	6.3	4.4	4.5	4.0
Current A/c(US$ bill.)	-70.0	-28.0	-25.0	-25.0	-32.0
Real/$(nom.)	3.9	3.5	3.4	3.2	3.2

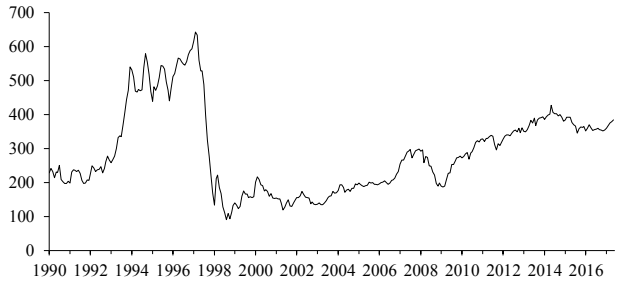
Other Emerging Markets

Hong Kong: FT-Actuaries

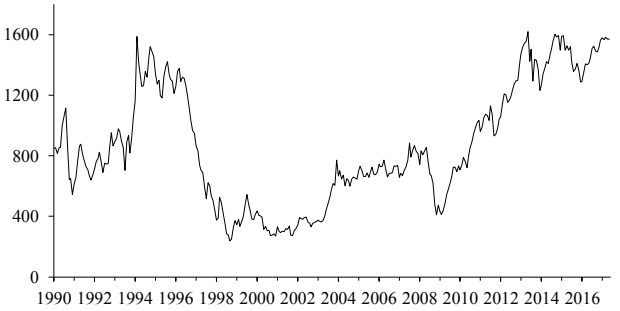
Indonesia: Jakarta Composite



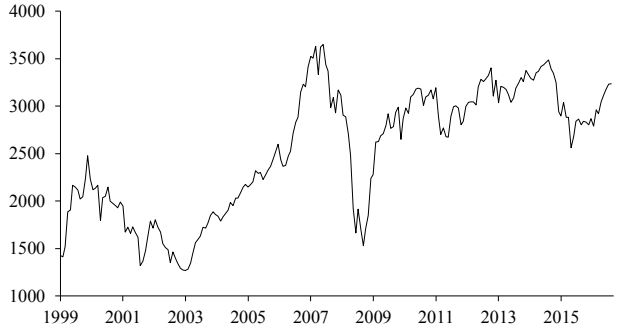
Malaysia: FT-Actuaries (US$ Index)



Thailand: Composite Index



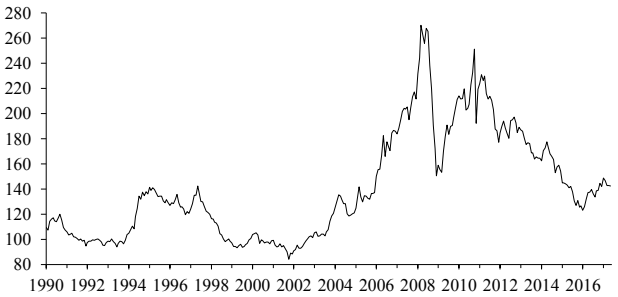
Singapore: Straits Times Index



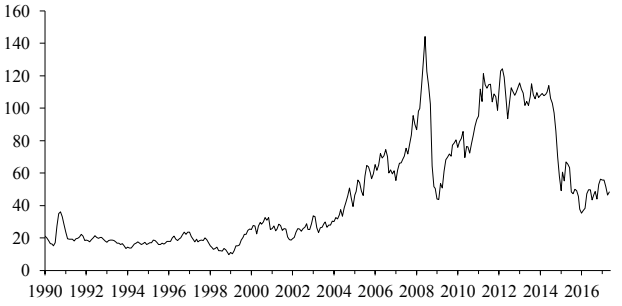
Philippines: Manila Composite

COMMODITY MARKETS

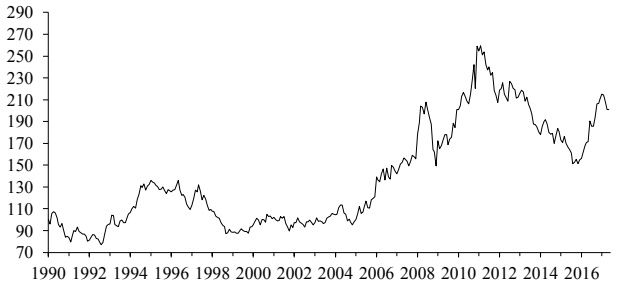
Commodity Price Index (Dollar)
(Economist, 2000=100)



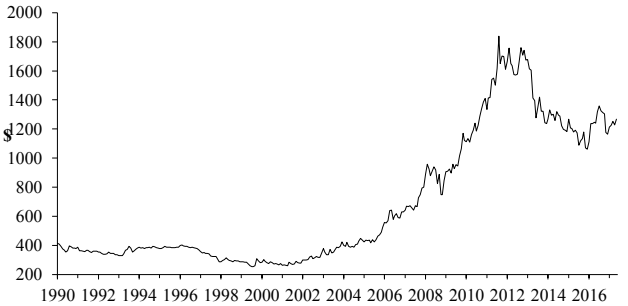
Oil Price: North Sea Brent (in Dollars)



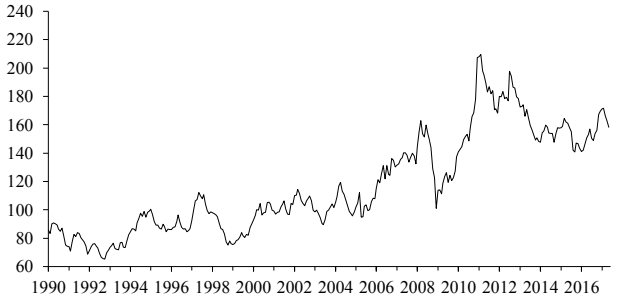
Commodity Price Index (Sterling)
(Economist, 2000=100)



Gold Price (in Dollars)



Commodity Price Index (Euro)
(Economist)



ECONOMIC FORECASTS IN THE POST-BREXIT ECONOMY: AN ANALYSIS OF THE CONSENSUS

Kent Matthews

On the eve of the Brexit vote, the forecasting community predicted UK growth in 2016 at a median of 1.8%, with the lowest at 1.5% . The forecast for 2017 was a median of 2.1% and lowest 1.2%. Following the Brexit vote the consensus changed to a median of 1.6% and a lowest of 1.0% for 2016, and a median of 0.7% and a lowest of -1.3% for 2017 . Quite clearly for the consensus the Brexit vote was an unanticipated event, which made them downgrade the growth forecast for the remainder of 2016 and for 2017. In contrast, the Liverpool (LVPL) forecast was 2.3% and 2.4% for 2016 and 2017 in June 2016 prior to the vote, and largely unchanged in July 2016 with 2.3% for 2016 and 2.7% for 2017. By October when it was clear that the bottom had not dropped out of the UK economy, there was a rapid reassessment by the forecasting fraternity with the median forecast for 2016 being raised to 1.9% and the lowest raised to 1.5%. However, the median forecast for 2017 remained bleak at 1.0% and the lowest being 0.0%. By January 2017, the consensus had adjusted to a median of 2.0% and lowest at 1.8%, and for 2017 the median was 1.3% with the lowest 0.6%, whereas the LVPL forecast at the same time had dropped to 2.2% for 2016 and 2.6% in 2017. The outcome for 2016 was 1.8% but could be revised upwards at the next release date of 30 June 2017.

This paper addresses the question why the two groups made such distinctly different forecasts following the post-Brexit vote. While the LVPL forecast was, and remains bullish about the post-Brexit prospects for the UK, the consensus is exactly the opposite. How can professional economic forecasters come to such starkly different forecasts? We may accept that the remaining half year of 2016 did not give clear room for both camps to sufficiently distinguish themselves with the median consensus under-predicting growth and LVPL slightly over-predicting. However, the forecast for 2017 shows a much greater difference.

Errors in forecasting

Forecast errors can be decomposed into errors in forecasting the driving variables (the assumptions) plus errors in the model (the difference between the real world and what the model says about the real world) plus unpredictable shocks which the forecaster cannot predict (random errors). [1] Box 1 below shows how this decomposition is constructed. Let's look at the assumptions used in the forecast first.

On the eve of the Brexit vote, the forecasts of the consensus were conditioned on victory for the remainers. The consensus forecast assumed a negative effect on demand from Brexit. This is the outcome of the accumulation of a number of negative shocks, both *short-run* and *long-run*.

Box 1 Forecast Error Decomposition

Let the true representation of the world be described by the following linear equation, where y is the variable being forecasted, X is the driving variable that y is conditioned on, β is the parameter that measures the response of y to a change in X, and ε is a random error term which is assumed to be normally distributed with a mean of zero and a given variance σ_ε^2 .

$$y = \beta X + \varepsilon \qquad \varepsilon \sim N(0, \sigma_\varepsilon^2) \tag{1}$$

The forecast is described by the equation;

$$\hat{y} = \hat{\beta}\hat{X} \tag{2}$$

Subtracting (2) from (1)

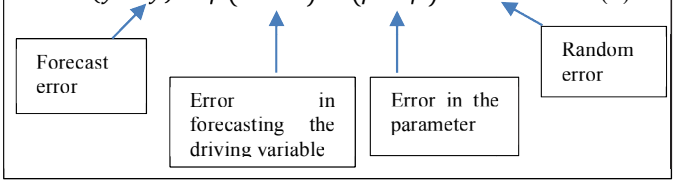
$$(y - \hat{y}) = \beta X + \varepsilon - \hat{\beta}\hat{X} \tag{3}$$

Adding and subtracting $(\beta\hat{X})$ to (3) gives;

$$(y - \hat{y}) = \beta X + \varepsilon - \hat{\beta}\hat{X} + \beta\hat{X} - \beta\hat{X}$$

And rearranging gives;

$$(y - \hat{y}) = \beta(X - \hat{X}) + (\beta - \hat{\beta})\hat{X} + \varepsilon \tag{4}$$



[1] *Forecasts for the UK economy: a comparison of independent forecasts*, HM Treasury, no 350, June 2016.
Forecasts for the UK economy: a comparison of independent forecasts, HM Treasury, no 351, July 2016.
Forecasts for the UK economy: a comparison of independent forecasts, HM Treasury, no 354, October 2016.

https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/ihyp/pn2

Clearly it would be impractical to review the assumptions of all the forecasting institutions that make up the consensus, so we may take the NIESR forecast as indicative of the consensus view. There are three reasons why this makes sense. First, both the NIESR and LVPL models employ forward rational expectations which gives them a certain degree of commonality in that both allow for expectations of future events to influence the current and near term forecast. Second, while there are differences in modelling philosophy, both models have a supply side which is necessary for a general equilibrium. Third, the NIESR model has provided relative transparency in the assumptions used in its forecast (Baker et al, 2016). Table 1 below shows the pre- and post-Brexit vote forecasts of NIESR and LVPL for inflation and growth in 2016 and 2017.

Table 1: NIESR/LVPL forecast comparisons

	2016		2017	
May	LVPL	NIESR	LVPL	NIESR
GDP	2.3	2.0	2.4	2.7
INF	1.5	0.3	1.8	1.3

	2016		2017	
Sep	LVPL	NIESR	LVPL	LVPL
GDP	2.3	1.7	2.4	2.3
INF	1.8	0.8	1.8	1.8

Table 1 shows that the NIESR forecast pre-Brexit vote was more optimistic on growth and inflation in 2017 than LVPL was. Following the Brexit vote the NIESR forecast was for a sharp slowing down in the economy and an uptick in inflation. The assumptions that underlie the *long-run* impacts of Brexit according to Ebell and Warren (2016) are:

1. A reduction in EU trade and a modest rise in tariff barriers.
2. A reduction in FDI.
3. A reduction in the UK net fiscal contribution to the EU budget.

However, it is assumed that the UK will continue to operate with the existing Common External Tariff (CET). Which means that the reduction in EU trade is not met by any, never mind stronger, counter effect from an increase in non-EU trade. As Minford (2016) has stated, when challenged about this Brexit protectionist assumption, the consensus and NIESR view was that 'unilateral free trade was politically impossible'. In addition to the reduction in net trade, a negative shock to FDI is estimated from a 'synthesis of the existing academic literature'. These shocks are not part of the model but part of the assumptions used by the forecaster to tie down the long-run effect of Brexit. Forward Rational Expectations has the effect of telescoping the future into the present.

No such assumptions are made by the LVPL forecasters. Following the work of Minford et al (2015), it is argued that the removal of all EU-type protection reduces prices to households boosting real income and increasing consumer purchasing power. The net effect on aggregate demand is positive which offsets some of the negative implications of the massive existing trade deficit. The removal of the UK from the EU and the regulatory systems that stifle productivity growth, will also have a positive supply shock. Again with forward Rational Expectations, these long-run implications are fed back from the future into the current forecast.

Short-run shocks and model errors

In addition to the assumptions about the long-run implications the NIESR forecasters employ a number of temporary short-run shocks related to an increase in uncertainty. Particularly, they reflect an increase in borrowing costs (credit premium), bond financing costs (term premium), foreign exchange volatility (exchange rate premium), and a fall in the stock market (equity premium). But all these shocks are driven by an 'off-model' externally derived measure of uncertainty extracted from the first principal component [2] from the joint correlations of various market measures of risk (Baker et al, 2016).

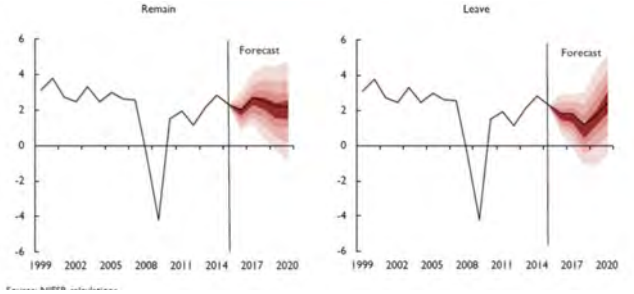
It can be argued that the use of such an 'off-model' measure of uncertainty violates the assumptions of Rational Expectations used in the NIESR model. Rational Expectations is based on the notion that the subjective expectations of the future by decision makers based on available information are the same as the objective expectations. What this means is that the central expectation is the average of a subjective probability distribution which coincides with the objective distribution and decision makers do not make systematic forecast errors. In other words the average of the forecast errors is zero so that decision makers do not expect to make errors in their expectations (forecasts). Of course this does not mean that they always get it right, as there is a dispersion of errors. This notion of an expectation of a zero error in forecasting and a constant dispersion is encapsulated in the assumption of a normal distribution of the error term in equation (1) of Box 1.

An increase in uncertainty widens the dispersion (increases the variance). This will then give wider bounds for outcomes from Brexit. Clearly pre-Brexit vote expectations were conditional on a greater than 50% chance of a Remain vote. Once the vote was known, the probabilities were for a Brexit and the range of probabilities varying from a soft Brexit to a WTO trading option. The NIESR recognises the consistency of allowing for uncertainty by wrapping their

[2] Technically, a statistical procedure (PCA) that converts a series of correlated variables into a vector of linear uncorrelated components. The largest principal component has the highest variation in the joint variation of the correlated variables.

point forecast with a set of confidence intervals (Jadha, 2016) as shown in Chart 1 below. But the confidence interval shown in the chart is derived from bombarding the NIESR model with historical shocks drawn at random. However, this is based on historical outcomes and not the range of probabilities of different Brexit scenarios, as it should be. But even with the NIESR exercise, it can be seen that they accept that Brexit may not lead to a slowdown in growth but a lower probability is attached to this possibility.

Chart 1: The GDP distribution under Remain or Leave.



Forecast errors due to model errors are also about the structure and philosophy of the economic model. The LVPL model is strongly new classical with a well-defined supply-side (Minford et al, 1984). Unlike the NIESR model, the LVPL model allows for greater openness following Brexit and freedom from regulation to affect productivity and increase aggregate supply. Box 2 shows an open economy aggregate demand curve and open economy supply curve which illustrates the implications of Brexit on both models.

The NIESR assumptions about the long-run result in a decrease in the equilibrium level of output and a decrease in the real exchange rate. The LVPL assumptions lead to a supply induced improvement in competitiveness and an increase in equilibrium real output. The forward Rational Expectations mechanism in both models feeds back from the expectation of the future to influence the forecast of the near period. This difference in assumptions about the long-run in the NIESR and LVPL forecasts explain the difference in forecast for 2017.

Conclusion

The Brexit vote has seen the economy respond in a way that was not expected by the mainstream forecasters. The predicted recession or slowdown did not occur. But where LVPL and the consensus did agree is that the exchange rate was predicted to depreciate. In the case of the LVPL forecast the decline in the equilibrium real exchange rate gets translated through the forward Rational Expectations mechanism to a decrease in the spot real exchange rate. In a world of sticky prices this can only come about through a depreciation of the nominal exchange rate. However, where LVPL and the consensus disagree is on the long term for output and growth. This has produced starkly different forecasts for 2017.

The outcome of the June 2017 election may well add an additional element of uncertainty that will feed into revised forecasts. The probability of compromises over agricultural support, the Common External Tariff, the control of immigration and EU regulation may have increased and this would necessarily affect the possible long-run outcomes. Forecasters have to keep an open mind and use their models consistently with scientific best practice. So watch this space!

References

Baker J, Carreras O, Ebell M, Hurst I, Kirby S, Meaning J, Pigott R, & Warren J (2016), 'The Short-Term Economic Impact of Leaving the EU', *National Institute Economic Review*, 236, May, 108-120

Chadha J (2016), 'The Referendum Blues: Shocking the System', *National Institute Economic Review*, 237, August, F4-F8

Ebell M & Warren J (2016), 'The Long-Term Economic Impact of Leaving the EU', *National Institute Economic Review*, 236, May, 121 - 137

Minford P (2016), *Trading Places: Consumers v Producers in the New Brexit Economy*, Politea: London

Minford P, with Gupta S, Mai Le V P, Mahambre V & Xu Y (2015), *Should Britain leave the EU? An Economic Analysis of a Troubled Relationship* (2n Ed), December, Edward Elgar

Minford P, Marwaha S, Matthews K & Sprague A (1984), 'The Liverpool Macroeconomic Model of the United Kingdom', *Economic Modelling*, 1, 1, 24-62

Box 2 Open economy aggregate demand and supply.

Let Y represent real GDP, D represent domestic demand, X represent exports, M represent imports, and e be the real exchange rate. The real exchange rate is defined as the relative price of domestic goods relative to foreign goods adjusted for a common currency. So $e = \frac{P.S}{P_f}$, where P is the domestic price level, P_f is the foreign price level and S is the nominal exchange rate (foreign currency per unit of domestic). A rise in S is an appreciation of the exchange rate and a fall is a depreciation. Similarly a rise in e is a loss of competitiveness and a fall is an improvement in competitiveness. The open economy aggregate demand schedule can be derived from the following equation;

$$Y = D(Y, \alpha) + X(e, \theta) - M(e, Y) \qquad (1)$$

Where α and θ are shift factors. Equation (1) describes an inverse relationship between the real exchange rate and real GDP. A fall in e improves competiveness and increases exports X. To maintain trade balance and a rise in imports, real GDP needs to rise.

An open economy aggregate supply curve has the real exchange rate responding to the real costs of factors of production and real output. For firms to supply more output profit their margin has to rise by domestic prices rising above foreign prices leading to an increase in the real exchange rate. So equation (2) describes the open economy supply curve, where w represents the unit cost of the domestic factors of production. An improvement in productivity decreases w and improves competitiveness.

$$e = \rho w + \mu Y \qquad (2)$$

Figure 1 shows the effect on the real exchange rate and real GDP from the NIESR assumptions on the long-run. The leftward shift in the AD schedule arises because of the expected fall in trade with the EU. The result is a fall in the equilibrium real exchange rate and a fall in equilibrium output.

Figure 2 shows the LVPL assumptions about the long-run. The AD schedule does not shift to the left but shifts to the right because in the long-run trade with the rest of the world improves more than the decline in EU trade, and the AS schedule shifts to the right because an improvement in productivity reduces domestic unit costs of production. The result is a decrease in the equilibrium real exchange rate and an increase in equilibrium output.

Figure 1

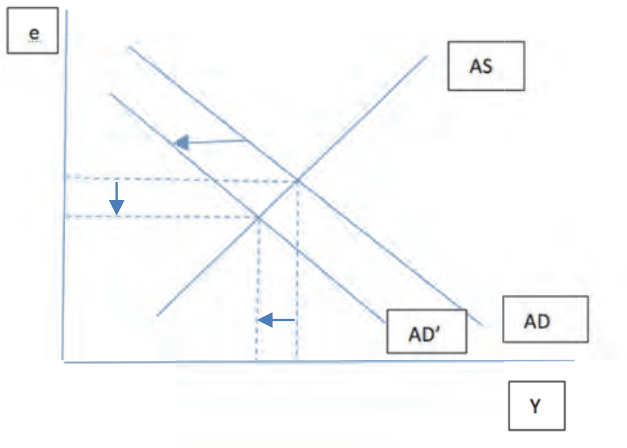
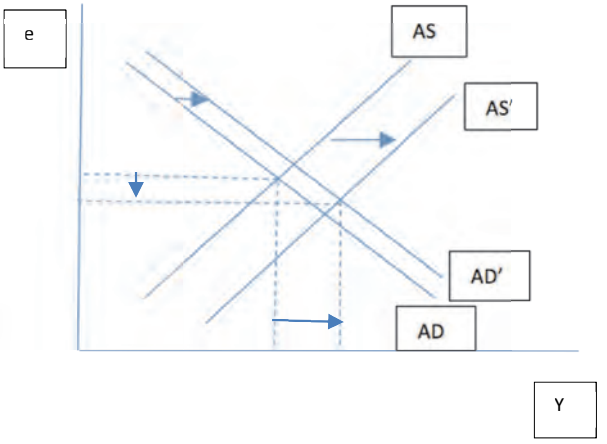


Figure 2



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The Julian Hodge Institute of Applied Macroeconomics was launched in autumn 1999 in a new collaboration between the Cardiff Business School of Cardiff University and Julian Hodge Bank. 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. This research has been given added urgency by the ongoing discussions about the UK's adoption of the Euro in place of the Pound. The new Institute has aimed to develop research relevant to this important debate.

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