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“Consensus negativism towards Brexit, led sadly by HM Treasury in its two Brexit Reports (short and long term)... consisted of two strands of thinking: Brexit would cause damaging uncertainty in the short term which would cause a collapse in demand, with a likely recession, and would also inflict long-term damage on the potential growth in the economy due to a contraction of trade with the rest of the EU. The broad picture turned out quite differently on both counts... First demand did not collapse... Second, there is no evidence of long term decline in potential growth.”



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The UK economy has defied the gloom of the ‘consensus’ since the Brexit referendum. It has grown steadily, with the latest figures showing growth strengthening in the second half of 2017 and the ONS admitting to serious underestimates of growth, both on exports and on service productivity. The Brexit devaluation has caused an upsurge in net exports accompanied by a slowing in consumption, as was needed to correct a current account deficit running at over 6% of GDP. The world is now growing more strongly as the Trump administration ushers in deregulation and tax cuts in a resurgent US economy. With substantial excess capacity in commodities and still a slack labour market there is little sign of rising inflation. US monetary policy is getting slowly away from its emergency loose settings and this will be soon be copied in the UK and in the eurozone. Emerging markets are benefiting from the stronger world recovery which has a long way to go yet.

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Now that a preliminary agreement has been reached with the EU attention has shifted to a future UK-EU trade agreement. This must not destroy the gains from Brexit which come from free trade with the rest of the world, and from restoring UK control of domestic regulations and borders; hence any agreement implies leaving the Customs Union and the Single Market. A simple ‘Canada-plus’ agreement not to levy tariffs on goods across the UK-EU border would be sufficient to achieve this, with services continuing to enjoy no EU or UK trade barriers as now. The City will expand as regulation returns to the UK and as input prices are driven down by free trade; ‘equivalence’ would replace ‘passporting’ and some EU business could be replaced by more worldwide business if the EU decides against its own interests to raise some barriers. Should no trade deal be negotiable the UK would gain at the expense of the EU as Brexit would be brought forward in time and tariffs would be levied.

Patrick Minford



REVIEW OF THE POST – REFERENDUM ECONOMY– DESPITE BREXIT

Conveniently for Consensus economists, the mandatory end-of-year reviews of 2016 and 2017 never included the forecasts they made in August 2016 at the height of their panic over Brexit. The 2016 forecasts they reviewed were all made at the end of 2015 when they did not expect Brexit and the 2017 forecasts they reviewed at the end of last year were all made at the end of 2016 when their panic had largely subsided and been replaced by sullen expectation of slowdown in some vaguely-specified future.

It is instructive to evaluate how the economy has turned out since the referendum since it is a good test of the Consensus negativism towards Brexit, led sadly by HM Treasury in its two Brexit Reports (short and long term). This consisted of two strands of thinking: Brexit would cause damaging uncertainty in the short term which would cause a collapse in demand, with a likely recession, and would also inflict long-term damage on the potential growth in the economy due to a contraction of trade with the rest of the EU.

The broad picture turned out quite differently on both counts. First demand did not collapse but continued to grow rather normally; during 2017 the consequences one would expect from a large devaluation showed themselves, with consumption slowing and net exports rising on the back of enhanced profits in the traded sector- the so-called ‘expenditure-switching’ effect of a devaluation. While a number of economists pounced on the slowdown of consumption as evidence of the forecast ‘demand slowdown’, this was plainly a misinterpretation of that usual expenditure-switching effect, now more obvious in the data as CBI and PMI surveys reveal the extent of the new upswing in manufacturing and other traded sales.

Second, there is no evidence of long term decline in potential growth. Much has been made of the ‘productivity puzzle’ whereby since the financial crisis UK measured productivity has grown well below its past trend of around 2% a year: the Office of Budget Responsibility notoriously revised down its projections for future UK productivity growth in its November 2017 Budget forecasts. Without ascribing this to Brexit, it managed to fit into the general Treasury-inspired gloom about the consequences of Brexit with this forecast.

Yet there are two key issues involved here which should inspire scepticism about the supposed UK productivity slowdown- discussed at some length in my ‘A Budget for Brexit’ (Minford, 2017). First, measured productivity (i.e. output per person) is highly responsive to the business cycle; bad recessions like the Great Recession in the financial crisis have a huge effect on it. This is due to the fact that labour is more and more like a fixed asset, in which like capital the firm’s own specific knowledge and

‘human’ capital is lodged. In recessions it is much under-utilised. Then in the slow recovery we have had where labour became extremely

Table 1: Summary of Forecast

	2016	2017	2018	2019	2020	2021	2022
GDP Growth ¹	1.8	2.1	2.0	1.9	1.9	2.2	2.3
Inflation CPI	1.1	2.6	2.7	2.2	2.1	2.1	2.8
Wage Growth	2.4	2.2	2.4	1.8	1.7	3.0	3.6
Unemployment (Mill.) ²	0.8	0.8	0.8	0.7	0.7	0.6	0.5
Exchange Rate ³	80.6	74.9	75.0	74.5	73.1	72.4	71.7
3 Month Interest Rate	0.5	0.4	0.6	1.2	2.4	3.1	3.1
5 Year Interest Rate	0.7	1.1	1.4	2.5	3.5	2.9	2.6
Current Balance (£bn)	-87.4	-65.5	-53.9	-49.0	-38.7	-26.2	-15.2
PSBR (£bn)	45.1	40.1	33.4	24.2	6.6	-6.6	-10.8

¹Expenditure estimate at factor cost

²U.K. Wholly unemployed excluding school leavers (new basis)

³Sterling effective exchange rate, Bank of England Index (2005 = 100)

cheap as people were desperate to find jobs, firms acquired more labour- a ‘good time to buy’- and essentially hoarded it, building it into its capital stock. It is particularly significant that in the second half of 2017, when employment has stopped growing with an increasingly tight labour market and little available spare supply, output has grown solidly and with it productivity has ‘taken off’!

Second, the productivity of a service economy is plainly under-measured, even when one gets past this problem of cyclicity. Service quality is notoriously hard to measure; and Statistics Offices do not even try (as they have started to try with the quality of goods like computers and washing machines). Yet there are plenty of reasons to think it is rising steadily as services incorporate the effects of computerisation into their product- think of how much easier it is to book hotels or travel or of wifi with your coffee or to do research via the internet. Even government services have become more productive- think of getting your car licensed or your fines paid.

Of course the problem for the UK is that services are now 80% of GDP: the easily-measurable productivity gains in manufacturing, only 10% of GDP, now contribute only a small proportion of growth in GDP. The same is true of the US and of most advanced economies, hence the ubiquity of the productivity puzzle in the developed world.

Table 2: Consensus Forecast

Consensus Forecast Aug 2016				Consensus Forecast Dec 2016	Outturn		
2016	H2*	2017		2017	2016	H2*	2017
GDP	1.6	0.1	0.6	1.3	1.9	0.65	1.8 ⁺

^{*}Second half average quarterly growth rate

⁺Based on 0.5% growth in Q4

When one looks at the Consensus forecasts for August 2016 in Table 2 one can see that it greatly underestimated the growth rate since Brexit. For 2016 they expected a near recession in the second half worth 0.1% growth in each quarter whereas in fact the quarterly growth rate was 0.65%; the Treasury notoriously predicted an immediate recession after the Brexit vote. For 2017 the Consensus expected growth to continue at a similarly slow rate, 0.6% per annum, whereas in fact growth has proceeded at 1.8% per annum. By December 2016, the Consensus forecast for 2017 had risen to 1.3%; however this was still well below the 1.8% outturn.

Our own forecasts were for the continuation of previous growth rates in the 2-3% range through the rest of 2016 and for 2017. In fact, soon after August 2016 the ONS sharply revised downwards its estimate of Q1 growth, from 0.4% to 0.2%; this meant that growth in the first half of 2016 was now estimated to be at around 1.8% per annum. Essentially what this revealed was that the pre-Brexit growth rate had slowed below the 2-3% rate. In our subsequent forecasts we revised down our growth projections closer to 2%. However, we remain doubtful about the ONS' estimates for 2017 (and also 2016) and expect them to be revised upwards, as they often are; they have been systematically below what would have been implied by the PMI surveys. Also as noted later the ONS has just (December) discovered a large error (£3.6 billion) in its estimate of net exports in Q3: on its own, correcting this would add 0.7% to Q3 GDP, nearly tripling the Q3 quarterly growth rate! The ONS has also just announced the discovery that it has greatly under-recorded Telecoms output for the last five years. We await the next revisions of GDP with interest!

As for any Brexit effect, it will have come through the Brexit devaluation. Projecting exactly how rapidly a devaluation will work on each of the different spending categories is fraught with difficulty; the lags are variable though typically longer for business spending and net exports than for consumption.

The main point to come out of all this for the economy's behaviour is that it has not reacted much in its overall growth to Brexit. The gloom of the Consensus was not justified: growth has remained pretty much unaltered, and certainly has not dived to near-recession rates as the Consensus forecast. Moreover it is reacting rather healthily to the Brexit devaluation, with a consumption slowdown, some investment growth and an improvement in net exports; were it not for the feverish 'despite Brexit' atmosphere that has gripped the forecasting community such a short term trend would have been widely welcomed.

How the latest indicators look

Let us end this backward look at forecasting outcomes with a forward look at where available surveys suggest the economy is headed.

Starting with productivity where so much ink has recently been spilt, we may note that in Q3 and Q4 growth looks as if it will have been around 0.9% for the second half of 2017, at least as seen by the ONS at this time. Meanwhile the latest estimates of employment suggest that it has fallen by 0.2% between May-July and August-October. Supposing there is no further fall in employment by the year end, this would imply that in the second half of the year measured productivity per man jumped by 1.1%, an annual rate of 2.2%, roughly around its previous trend pre-crisis. Just for the third quarter the latest ONS estimate of productivity per manhour is +0.9%, an annual rate of 3.6%! (Hours worked dropped 0.5% in Q3 while output rose 0.4% on the estimates so far.)

How strong is current growth, going into 2018? Fairly strong according to two major sets of indicators. The CBI survey of private sector business across distribution, manufacturing and services reported a positive balance of +19% in the quarter to December, strengthening from +6% in the quarter to November- any positive balance indicates growth. Its recent surveys of manufacturing have been the best since 1988, underlining strong optimism on export orders.

The Purchasing Managers' Indices where a number over 50 indicates growth are similarly positive. The manufacturing for November was 58.2, for services it was 53.8 and for construction it was 53.1. These all support the idea of growth continuing for now at its current rate of 2% or so.

An important element in all this is the movement of net exports, which we would expect a large devaluation to push upwards especially when world growth is proceeding at a moderately good rate, just below 4%. The goods and services trade balance was averaging -£10 billion a quarter during 2016. In the third quarter this was down to -£5.8 billion, almost half the 2016 rate. This is an improvement of no less than 1.0% of GDP in just over a year. In volume terms the improvement is around £4 billion, about 0.8% of GDP, this being the contribution to the growth rate over the period.

A similar improvement is occurring in the net income balance of the current account. This has been running at a deficit since the financial crisis, before which it was in surplus; in 2016 this averaged -£18.25 billion a quarter. By Q3 2017 this had improved to -£16.9 billion, a 0.4% boost to Gross National Income.

These are all encouraging figures which suggest that the UK economy is entering a period of steady growth and an improving balance of payments. Plainly given that the current account deficit was running before Brexit at around



7% of GDP, this had to be corrected since it revealed that the economy was spending this much above its income, an unsustainable situation. It is encouraging that since the Brexit devaluation this situation is improving and the current account deficit is in 2017 Q3 down to 4.5% of GDP. It is a further unfortunate manifestation of Brexit fever that the economic forecasting community is hardly picking this up in its ongoing commentary.

It remains true that answers to ‘confidence’ questions remain either uncertain or negative. This is true for example of the CBI and the Bank of England agents’ surveys of confidence, as well as consumer confidence surveys. However it must be said that these surveys generally mirror media commentary on the outlook and do not correlate well with what businesses and people actually do in reaction to their own situation. With media, especially BBC, comment relentlessly downbeat, with the constant refrain of ‘despite Brexit’, it is entirely natural that when questioned businesses and people express doubt and concern about the future. This is clearly worsened by the general ‘noise’ of the political process both here and in the EU over trade negotiations. Nevertheless what is clear is that people and businesses are weathering this process and carrying on robustly with their own business and personal agendas. We often forget that uncertainty is endemic in the economy even in the best of times and that it is usually dealt with pragmatically on the basis of direct individual circumstances and judgements; ‘general confidence’ indicators on their own are often for this reason a poor guide to actual intentions.

The overall state of the economy

The economy is performing robustly in the face of a Brexit process which is still incomplete. The sooner the negotiations with the EU can be successfully concluded the better in terms of general confidence factors. As I argue in Chapter 3 of this Bulletin the UK would do well under ‘No Deal’, indeed it would in purely economic terms do better than with a Canada-plus trade deal, in that there would be less financial payments to the EU and a quicker movement to free trade. However what is important is that a united government proceeds to deliver its current clear policy to get agreement with the EU and non-EU trade partners on free trade, with the UK resuming control of its domestic regulations and its borders. That will pave the way for a decade of faster growth.

The Budget and the Office of Budget Responsibility- a strange pas de deux between OBR and HM Treasury

In this Budget the OBR dramatically lowered its forecast for GDP growth and said it was due to a new assessment it had made on productivity growth prospects. In so doing it moved from its intended status as an independent ‘watchdog’ providing uncontroversial forecasts of the public finances, and into the spotlight as the purveyor of a

forecast widely regarded as biased downwards in a serious way for a serious period, the next five years; so scuppering the well-meaning hopes of Philip Hammond to provide an upbeat Budget. It has told all and sundry that this was forced on it by the behaviour of productivity growth underperformance. However even the gloomy Treasury must be unhappy that its freedom of manoeuvre has been so restricted by the OBR on these productivity grounds.

There are three questions to be asked about this.

- 1) On the OBR forecast: Is the poor OBR forecast really due to poor productivity?

The OBR model of the economy published online is, as the document says (OBR, 2013) based on the Treasury Model of 1970 vintage, plainly brought up to date through reestimation of the equations on fresh data, from time to time.

This model has backward-looking expectations and includes only a small effect on wage inflation of output being higher than trend (i.e. productivity- related output). Otherwise productivity works through unit labour costs on inflation.

So how exactly does this lower productivity growth work through the model? Does it drive inflation to unsustainable levels so forcing the government to restrain demand? As inflation in the OBR forecast is round about the inflation target and interest rates rise little, it does not seem as if this drop in productivity growth is actually affecting the forecast!

Is it perhaps instead simply the OBR view that demand growth will be slowed by a Brexit effect on exports, consumption and investment, as well as by government responding with slow spending growth?

In our attempt to answer this question we must have legitimate doubts about whether ‘lower productivity growth’ actually forced down the OBR forecast of GDP growth. The OBR’s macroeconomic model, on which it says it bases its forecast, barely mentions productivity. Yes, there are unit costs where it enters to help determine prices and there is an assumed ‘trend output’ where it presumably enters indirectly into the judgement about what this should be. But there is a weak connection between trend output and the economy in their model because there is a particularly weak relation between ‘excess demand’ (the ‘output gap’ difference between actual output and trend output) and inflation. This relation only operates via wages inflation. It is weak anyway and at the present time is of course hardly operating and so may well have been overridden by the OBR forecasters; this also means that unit labour costs have been weak in contributing to inflation. So trend output and productivity seem to have had no effect on inflation which is the only way they have an effect in the OBR model.

So how does the OBR model determine output? From demand! In fact this model dates back to 1970 and is an 'Old Keynesian' model. Some may be familiar with the Item Club forecasts which use a variant of this model. The Keynesian set-up is popular with forecasters because they can build up their view of the demand side of the economy- consumption and investment spending, exports, and government spending and then add them up to get output growth. Supply is determined by demand. Forget expectations of inflation or the exchange rate. All such things are determined implicitly by the past.

This sort of Old Keynesian model may be convenient but it is most unlikely to match the behaviour of the economy, not to speak of its deep violation of modern theory. But leave that on one side: the point here is that the OBR has used its assumptions about demand to create a forecast of output, which has nothing at all to do with productivity. These demand assumptions seem to be heavily influenced by the Treasury's own views of Brexit: that it is damaging to consumption, investment and exports; and that government spending must be held back also to prevent more damage to the public finances. All of this is a recipe for dismal growth. The OBR says it has been 'neutral' in its view of Brexit, by which it seems to mean that it has reduced export forecast growth but also reduced import forecast growth by a similar amount due to Brexit; so the two offset each other in their effect on demand for UK output. But this is disingenuous because in these models exports are a 'driver' of demand from the outside while imports respond to demand inside the economy. As a result their export assumption due to Brexit is lowering output growth and in so doing also lowering import growth: not 'neutral' at all!

In short it looks as if the OBR has made what it thinks is a 'reasonable' forecast of demand based on Brexit uncertainties, which it constantly refers to. And has 'buttressed' this with an estimate of an 'output gap' which is says implies no excess capacity in the economy, plus a forecast of 'trend output' based on its assessment of productivity growth. It then suggests that the economy will follow the path of 'potential output' from here to 2023- an astonishing coincidence. At all points its methods look highly questionable: a) on the demand projection which is entirely gloomy b) on the absence of any excess capacity which is most questionable given labour availability in firms and capital availability which slow investment suggest is highly ample c) on the growth in underlying productivity (which is hugely uncertain but very probably much underestimated- see below). The OBR has managed to use three interlocking assessments which happen between them to provide a miserable backdrop to policy at a time of crucial change, playing to the story that Brexit has damaged the economy and needs to be tamed into a 'soft' (i.e. no) Brexit to be redeemed.

- 2) On the matter of productivity growth: Is the outlook for productivity really so bad?

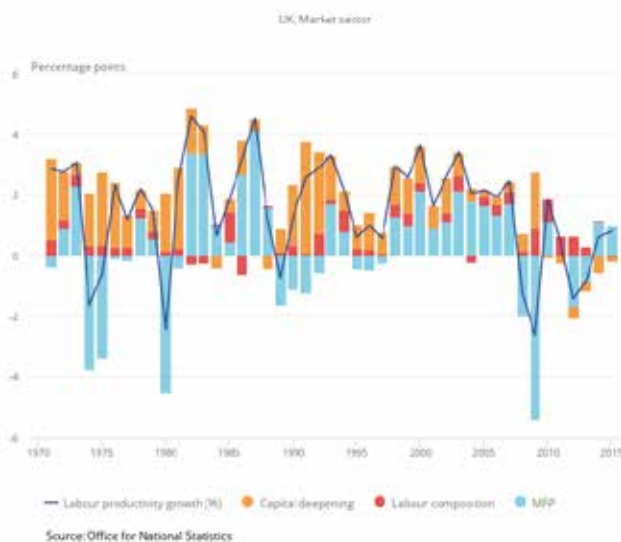
The OBR will no doubt agree that it varies greatly with the state of the economy and the labour market, because firms treat labour more and more like capital, owing to the 'human capital' embodied in it that is vital for the firm. Hence labour utilisation can vary greatly. Growth has hitherto been driven by a flexible labour market where people have been anxious to create jobs in a situation of excess labour supply. Is it not more likely that as the labour market tightens, aided by Brexit in stopping the inflow of taxpayer-subsidised unskilled EU labour, firms will increase their utilisation of their labour holdings? The OBR will have seen that in the third quarter productivity rose 0.5% as labour participation fell. Could this be a harbinger of the future?

On this question suppose we take the OBR's story about productivity at face value. It is a flimsy thing to use for a forecast u-turn like this. Productivity (i.e. output per employee or per hour) responds strongly to the economy as you can easily see from the ONS chart of productivity shown below. In recessions it plunges because output falls faster than firms lay off workers. It did so particularly badly in the financial crisis recession. Firms hang on to a lot of workers even when output falls because workers these days are like capital: they are often hard to find again and their knowledge is vital to the firm. Then also in recessions in a flexible wage economy like ours they become a lot cheaper to hire because they want to keep jobs and to be hired where they don't have jobs. In the recovery jobs rise as fast or even faster than output because of this. But at a certain point the labour market gets tight and firms have to use their workers more intensively, just like they raise their utilisation of capital as demand rises.

For this reason even measuring 'underlying productivity' in manufacturing is hard because you have to allow for this variable utilisation. Even on our current poor measures productivity seems to have risen sharply in the third quarter, as employment among 16-64 year olds fell 0.1% while the ONS final estimate for output growth looks like being 0.4%. This 0.5% rise in productivity in the third quarter is an annualised 2% growth rate! We may well be on the verge of seeing a shortage of labour developing that will force firms to use their labour stock more intensively.



Figure 3: Decomposition of annual labour productivity growth, 1971 to 2015



3) On the measurement of productivity Is the OBR sure that we have sensible measurement of productivity?

Is the OBR concerned about its measurement in the 80% of our economy that consists of services? Is it aware that the ONS has yet to implement any of the findings of the institute that was set up (ONS, 2008) to examine the measurement of public service output whose valued added is still measured simply by the wage bill? Or that the ONS has no plans to measure the quality of private sector services which would seem to have steadily improved over the past two decades owing to computerisation, the mobile phone and so forth? The ONS has an active programme of work improving its measures of the quality of goods such as washing machines and computers; does the OBR not think it is time the ONS turned more actively to measuring the quality of services when they are so important to our GDP and the productivity measure OBR are using to determine their forecast?

We need to be aware of our total inability to measure quality of services, now 80% of our economy; this makes one realise we know next to nothing about true productivity. The ONS is bravely trying to measure 'hedonic' (i.e. quality-adjusted) prices of key goods like computers and mobile phones; it has an institute (see ONS, 2008) to measure public services quality (20% of GDP) which so far is in the discussion phase. And nothing at all for the other 60% of GDP in the private services sector where it is likely productivity has soared (but not according to ONS measures).

The difficulty of relying on productivity growth as a guide to the future growth of GDP is one of measurement. It is relatively easy to measure non-services productivity, such as manufacturing, where the UK made huge strides in productivity in the 1980s and 1990s as it contracted low-value manufacturing in favour of high-tech manufacturing,

shrinking the labour force employed substantially from 25 per cent of total employment in 1980 to only 8 per cent today. However, by the time of the financial crisis, the economy was dominated by services where productivity measurement is notoriously bad. This can be seen from the second chart from ONS, 2017, 'Figure 4', which shows productivity growth by sector from 1998 to 2000. The sectors from Distribution (denoted GI) and to its right are the service sectors of the market economy, as listed below the chart. (Public sector productivity by definition grows at zero because output is actually measured by the number of employees times their real wages.) But plainly some of these numbers are completely absurd: consider for example education (PQ) and health, and the arts (RSTU), respectively third and second from the right, where productivity supposedly plunged.

Figure 4: Decomposition of annual average labour productivity growth, 1998 to 2015



Sectors in 'Figure 4' above, by industry from left to right
Industry1

	Industry Description
ABDE*	Agriculture; forestry and fishing;
C	Mining and quarrying; Utilities
F	Manufacturing
	Construction
GI	Wholesale and retail trade;
H*	Accommodation and food services
J*	Transportation and storage
K	Information and communication
	Financial and insurance activities

LMN*	Real estate activities; Professional and scientific activities; Administrative and support activities
PQ*	Education; Health and social work
RSTU*	Arts and entertainment; Other services
Total MS	Total Market Sector

Source: Office for National Statistics

Notes:

1. Standard Industrial Classification (2007)
2. * Denotes industry affected by removal of non-market sector components

This is a point that has been made carefully by Hal Varian, a distinguished academic, now the chief economist of Google. He argues that GDP - which cannot capture the huge gains in quality of services such as those of a mobile phone, not to speak of goods now available freely (such as free software) - should be abandoned in favour of measuring the value to consumers of their expenditure.

In the past year, nominal GDP has grown 3.7 per cent and the 'GDP deflator' (representing the 'price' of GDP) by 2.1 per cent. Interestingly, the public finances are improving as revenues have risen around 4 per cent with public spending rising by only 3 per cent (reflecting weak growth in public employee wages). By looking at these facts in terms of real GDP growth, one misses the point that wage growth is weak partly because prices quality-adjusted are not rising as much as the CPI indicates while revenues are rising because the Government can afford for the same reason not to 'index' them to the CPI.

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Carney's volte-face and monetary policy

One of the ideas behind inflation targeting was creating predictability in monetary policy and enabling the 'forward guidance', implicit in the target and the actions promised to make it happen, more effective. It must be said that the

Canadian governor, Mark Carney's, tenure has been marked by a great downgrading of predictability. Governor Carney has been unable to resist the temptation to talk a lot about what he might do, and then promptly to change direction.

Only a few months ago the Governor was talking about prolonged monetary ease in the face of 'Brexit uncertainty'. This looked quite strange given that the economy was growing strongly throughout 2016, even if softer consumer spending was apparently reducing 2017 growth.

However, now the Monetary Policy Committee seems to have ganged up on him, and reached a more robust view of the economy, closer to ours: that it is growing steadily and that ultra-loose monetary conditions look inappropriate therefore. Effectively monetary policy has been on 'emergency loose' status since the financial crisis struck hard after the Lehman bankruptcy in September 2008. The MPC has finally decided enough is enough: monetary policy must return gradually to normal as befits a normal economy.

To keep the Governor onside the argument is being put about on Brexit that the Bank 'cannot offset' the effects of a long-term regime change such as Brexit. This is rich considering the Governor has been arguing that it must on every possible occasion. However it seems to have done the trick and the Bank line is now seamlessly to 'renormalise'.

This process is coming online just as the Basel Committee adjusts to the Trump administration's demands for a softening of bank regulation- at last some reversal of the draconian demands for ever-higher capital injections into banks, with their result in the near-aborting of the recovery from the crisis, itself caused mainly by central bank incompetence.

So there will be a gradual raising of interest rates and an even more gradual selling-off of the huge amounts of government bonds held by the Bank (round about a third of the national debt). This must be welcomed as a step away from a market in savings that has been hopelessly mucked around by monetary policy: returns to savers have been tiny, while the government has paid negative real interest rates for its massive borrowing and medium to largeish companies with weak prospects have been allowed to survive on essentially free money. All the while small companies where disruptive innovation is potentially strong have been denied credit because the rulebook says they are 'risky' and banks must hold a lot more capital when they lend to them. This has been a mad bad world of credit.



THE UK ECONOMY

Vo Phuong Mai Le

The economy continued to expand. Real GDP rose by 0.4% in Q3, after 0.3% in the previous quarter. Output expansion happened in most sectors. Positive contributions came from the expansion of agriculture (0.2% in Q3, following 0.4% in Q2), services (0.4% after 0.5% in Q2) and production (1.1% after falling 0.3% in Q2). Meanwhile, construction output decreased by 0.9% following -1.3% in the previous quarter.

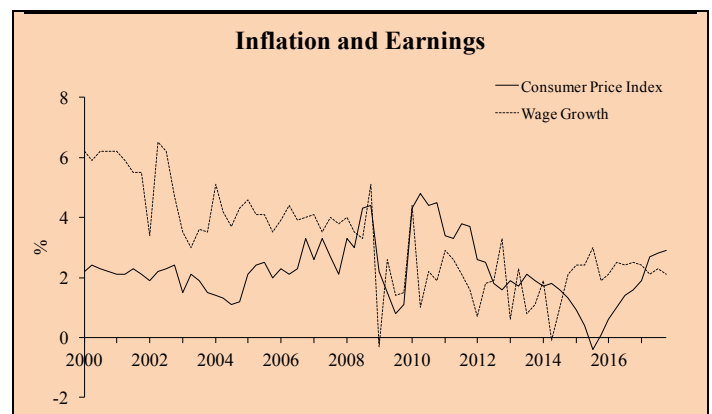
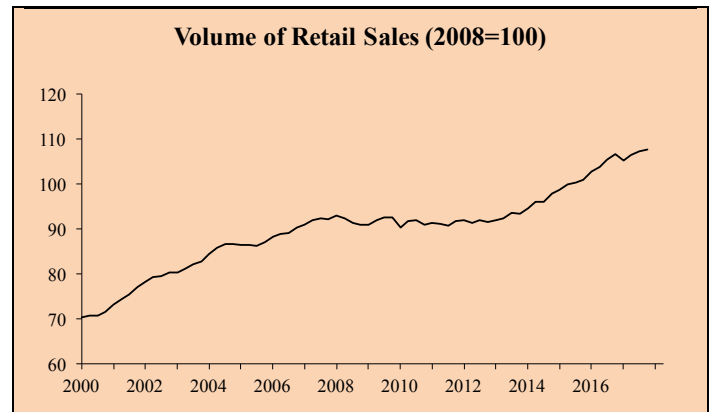
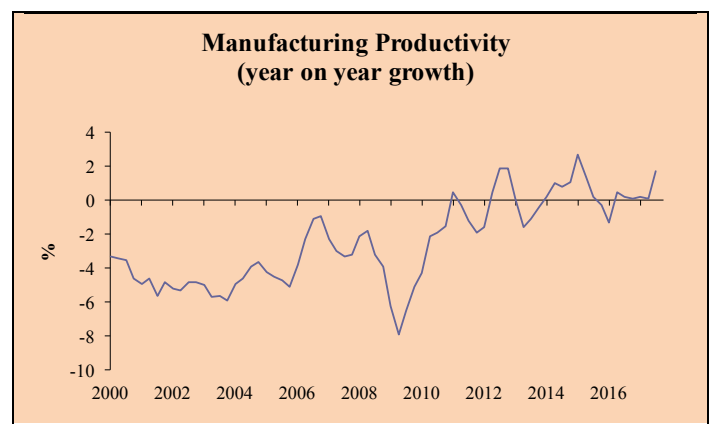
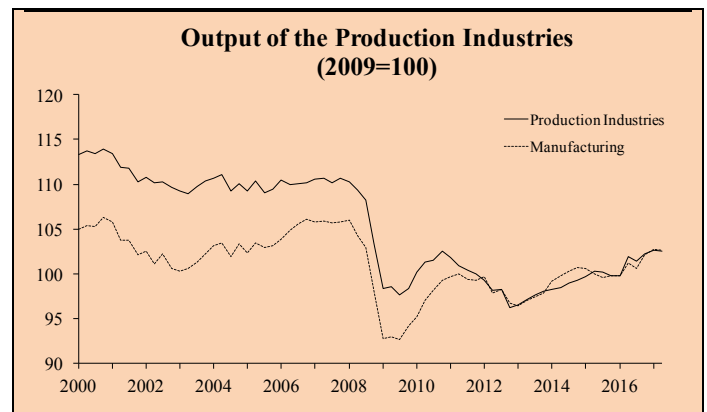
On the demand side, the positive contribution came from strong domestic demand. There was a recovery in the growth in private consumption (0.6% compared to 0.2% in Q2) and a weak rise in the gross capital formation (0.2% after 0.6% in Q2). The negative contribution to growth came from net trade. It took away 0.5 percentage points from growth, as exports shrank (-0.7%, after 1.7% in Q2) and imports rose (1.1% following 0.2% in Q2). However, following the ONS' discovery in December of an extra 0.7% of GDP in net exports in Q3, mainly of services, it seems likely there will be an upward revision of Q3 growth.

Recent data and surveys signalled that the economy was continuing to expand in Q4. The UK manufacturing Purchasing Managers' Index (PMI) was at 56.3 in December, after 58.2 in November. Though the pace of manufacturing expansion may have been slower, it remained above the 50.0 threshold mark for the 17th consecutive month. Strong growth was also seen in the services sector. The Markit services PMI Business Activity index was 54.2 in December, up from 53.8 in November. Construction output recovered from the drop in Q3. The construction PMI was 52.2 in December and 53.1 in November, indicating an output expansion. Throughout 2017 there has been some divergence between the PMI readings and the ONS' early estimates of sectoral growth. These also suggest that we should expect further upward revisions of the growth estimates for 2017.

Labour market, costs and prices

Labour market conditions remained strong. The employment rate was 75.1% in the period between August to October, slightly lower than 75.3% for May to July. Not only however is there a slight fall in total employment; in Q3 the ONS found that manhours fell 0.5% so that productivity per manhour rose 0.9% over the quarter, apparently reversing recent weakness in productivity growth. The unemployment rate fell to 4.3%, from 4.8% for the period of August-October 2016. Average weekly earnings rose by 2.5% yoy in Q3, up from 2.3% in Q2.

Annual CPI inflation has continued to be higher than the 2% target. It was 2.8% in November, unchanged from

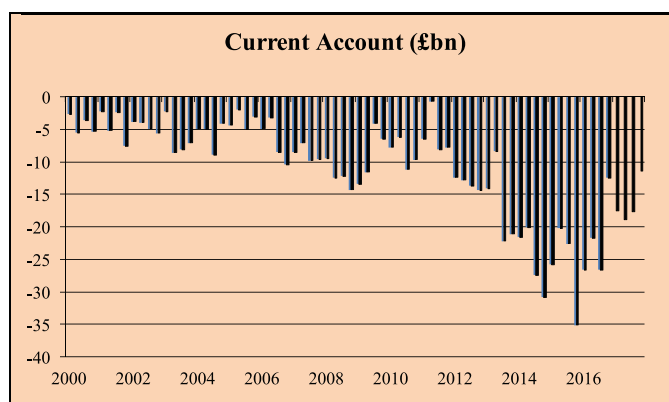
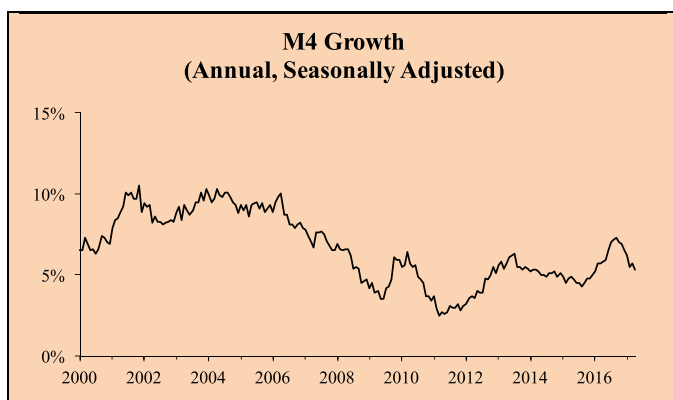
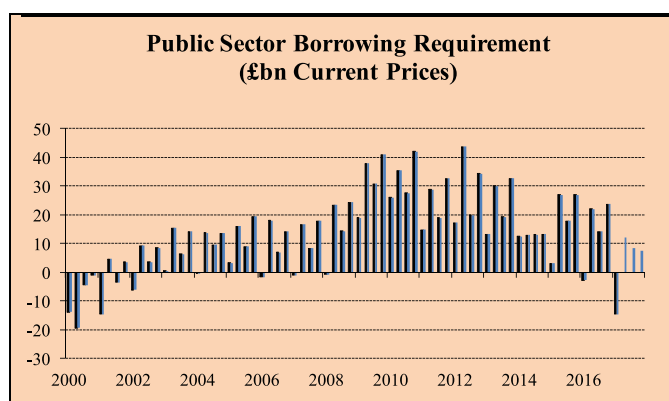
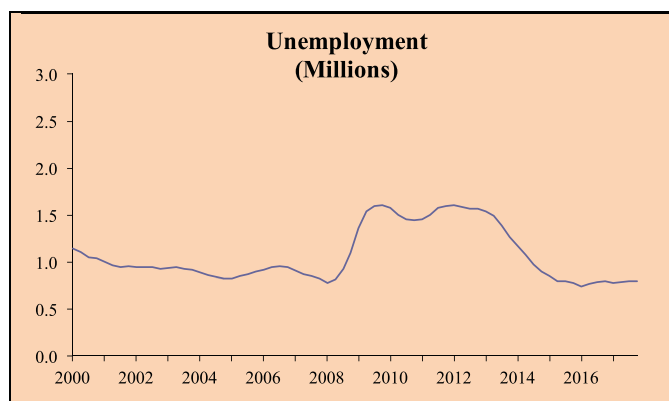
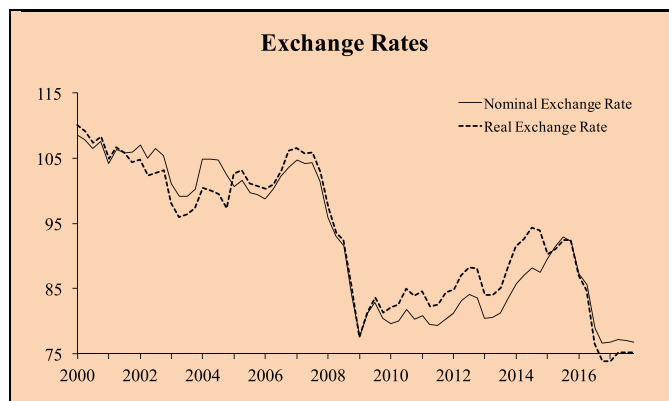


October. The Brexit devaluation has continued to push up annual input price inflation. It was 7.3% yoy in November, up from 4.8% in October. As a result, producers have continued to pass it on the consumers. Output price inflation was 3.0% yoy in November, up from 2.8% in October.

Fiscal and Monetary Developments

For the current fiscal year to November, public sector net borrowing excluding financial intervention was £48.1 billion, down by £3.1 billion compared with the same period in the previous fiscal year. With the reduction in net borrowing in the current fiscal year, net debt has begun to fall as a percentage of GDP. Public sector net was £1574.5 billion (76.7% of GDP) at the end of November, compared to 80.2% in November 2016.

Given the favourable economic conditions and inflation above the official target, at the November meeting the Bank of England Monetary Policy Committee raised the Bank rate to 0.5%, from 0.25%. This is the start of a normalisation process for monetary policy, which is expected to occur at a gradual pace. As for nonconventional monetary measures (QE), they maintained the total Bank balance sheet at £566.347 billion, implying that the Bank still holds around a third of outstanding public debt. At the latest meeting in December, there was no change in the monetary policy stance.



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
2016	1.1	0.7	0.5	82.1	80.6	-1.0	1.9	-1.6
2017	2.6	0.6	0.3	77.0	74.9	-2.1	3.6	-1.6
2018	2.7	1.4	0.6	76.3	75.0	-1.6	3.3	-0.7
2019	2.2	2.5	1.1	75.5	74.5	-1.0	2.8	0.5
2020	2.1	3.4	2.5	75.0	74.3	0.3	2.7	1.4
2021	2.1	2.8	3.2	75.2	75.1	0.3	2.8	0.8
2016:1	0.6	0.9	0.6	87.2	87.0	-0.3	1.4	-1.4
2016:2	1.0	0.8	0.6	85.6	84.7	-0.8	2.0	-1.5
2016:3	1.4	0.3	0.4	78.9	76.6	-1.2	2.1	-2.0
2016:4	1.6	0.6	0.4	76.6	73.9	-1.5	2.2	-1.7
2017:1	1.9	0.6	0.3	76.8	73.9	-2.1	3.3	-1.6
2017:2	2.7	0.4	0.4	77.2	75.2	-2.2	3.8	-1.8
2017:3	2.8	0.6	0.3	77.1	75.2	-2.2	4.0	-1.6
2017:4	2.9	0.8	0.4	76.8	75.2	-2.1	3.3	-1.4
2018:1	2.8	1.3	0.5	76.9	75.2	-1.7	3.2	-0.8
2018:2	2.6	1.5	0.5	76.5	75.2	-1.6	3.3	-0.6
2018:3	2.6	1.5	0.7	75.6	74.3	-1.5	3.4	-0.6
2018:4	2.6	1.5	0.7	76.1	75.3	-1.5	3.4	-0.6
2019:1	2.2	2.5	0.8	76.6	75.3	-1.3	2.7	0.5
2019:2	2.2	2.5	0.8	75.4	74.3	-1.3	2.8	0.5
2019:3	2.1	2.5	1.1	75.2	74.3	-1.0	2.8	0.5
2019:4	2.1	2.5	1.8	75.0	74.3	-0.2	2.8	0.5
2020:1	2.1	3.0	2.2	75.4	74.3	0.1	2.8	1.0
2020:2	2.1	3.0	2.2	75.0	74.3	0.1	2.8	1.0
2020:3	2.0	3.8	2.2	75.0	74.3	0.1	2.7	1.8
2020:4	2.0	4.0	3.3	74.7	74.3	0.8	2.7	2.0
2021:1	2.0	3.0	3.3	75.9	75.3	0.7	2.7	1.0
2021:2	2.0	2.8	3.1	75.5	75.3	0.3	2.7	0.8
2021:3	2.0	2.8	3.0	74.7	74.3	-0.1	2.7	0.8
2021:4	2.5	2.8	3.2	74.8	75.3	0.3	3.1	0.8

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)
2016	253.2	2.4	2.2	0.8	142.9
2017	258.6	2.2	2.2	0.8	142.1
2018	263.9	2.4	2.1	0.8	141.7
2019	268.7	1.8	2.0	0.7	141.2
2020	273.2	1.7	1.9	0.7	140.6
2021	281.4	3.0	1.6	0.6	141.9
2016:1	252.0	2.1	2.1	0.7	143.1
2016:2	252.1	2.5	2.2	0.8	142.7
2016:3	254.4	2.4	2.2	0.8	143.4
2016:4	254.3	2.5	2.3	0.8	142.4
2017:1	255.8	2.4	2.1	0.8	143.9
2017:2	257.3	2.1	2.2	0.8	141.2
2017:3	260.2	2.3	2.2	0.8	142.3
2017:4	261.1	2.1	2.2	0.8	141.1
2018:1	261.2	2.1	2.1	0.8	142.9
2018:2	262.8	2.6	2.1	0.8	141.1
2018:3	265.6	2.2	2.1	0.8	141.7
2018:4	266.2	2.6	2.0	0.7	141.0
2019:1	265.3	1.6	2.0	0.7	142.1
2019:2	268.5	2.1	2.0	0.7	141.1
2019:3	270.0	1.7	2.0	0.7	141.1
2019:4	271.1	1.9	1.9	0.7	140.6
2020:1	269.3	1.5	1.9	0.7	141.2
2020:2	273.4	1.9	1.9	0.7	140.7
2020:3	274.7	1.7	1.9	0.7	140.6
2020:4	275.4	1.6	1.9	0.7	140.0
2021:1	276.6	2.7	1.8	0.6	142.2
2021:2	282.0	3.1	1.7	0.6	142.3
2021:3	282.7	2.9	1.6	0.6	142.0
2021:4	284.3	3.2	1.5	0.5	141.0

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 Product¹ (£ Million 1990 Prices)

	Expenditure Index	£ Million '90 prices	Non-Durable Consumption ²	Private Sector Gross Investment Expenditure ³	Public Authority Expenditure ⁴	Net Exports ⁵	AFC
2016	159.4	763130.9	440238.4	292912.0	198473.7	-55145.2	113348.0
2017	162.8	779446.0	447196.7	297271.9	199478.8	-49648.7	115403.4
2018	165.9	794266.3	455569.6	299321.0	200245.3	-43063.6	117805.8
2019	169.0	809284.0	465551.7	303456.2	200695.7	-40178.1	120240.3
2020	172.3	825045.7	476228.9	305006.6	201423.9	-34802.1	122812.0
2021	176.1	843313.3	485866.8	308915.0	202752.9	-28450.9	125770.4
2016/15	1.8		2.3	-1.9	1.0		-3.7
2017/16	2.1		1.6	1.5	0.5		2.0
2018/17	2.0		1.9	0.7	0.4		2.1
2019/18	1.9		2.2	1.4	0.2		2.1
2020/19	1.9		2.3	0.5	0.4		2.1
2021/20	2.2		2.0	1.3	0.7		2.4
2016:1	158.0	189138.4	108678.4	72398.4	50736.1	-13542.0	29132.6
2016:2	158.9	190275.7	109825.3	72789.1	48907.3	-12813.4	28432.6
2016:3	159.7	191226.4	110456.6	74570.9	49388.4	-16711.1	26478.4
2016:4	160.8	192490.5	111278.1	73153.7	49441.8	-12078.7	29304.4
2017:1	161.6	193453.0	111073.9	73556.2	51435.0	-14278.1	28888.6
2017:2	162.3	194331.9	111480.4	73920.5	49462.3	-11897.2	28632.2
2017:3	163.2	195409.3	111938.0	74713.5	49336.1	-11823.3	28751.4
2017:4	163.9	196251.9	112704.5	75081.7	49245.4	-11650.1	29131.3
2018:1	164.7	197180.3	112842.1	74226.7	50854.4	-11466.6	29277.6
2018:2	165.5	198138.0	113539.6	74540.3	49963.7	-10545.7	29359.6
2018:3	166.3	199090.9	114240.8	74810.1	49779.7	-10233.2	29506.0
2018:4	166.9	199857.1	114947.1	75743.9	49647.5	-10818.1	29662.6
2019:1	167.8	200836.8	115313.5	75213.2	50223.8	-10087.2	29826.0
2019:2	168.6	201822.9	116027.2	75454.1	50207.6	-9889.1	29976.5
2019:3	169.4	202812.6	116744.0	75458.1	50155.0	-9408.9	30135.7
2019:4	170.2	203811.8	117466.9	77330.8	50109.3	-10793.0	30302.2
2020:1	171.0	204746.7	117958.3	76550.5	50356.4	-9662.0	30456.7
2020:2	171.9	205754.3	118687.9	75671.7	50332.2	-8317.7	30619.9
2020:3	172.7	206767.1	119422.2	75670.8	50311.9	-7853.1	30784.9
2020:4	173.5	207777.5	120160.5	77113.6	50423.3	-8969.3	30950.5
2021:1	174.8	209267.8	120533.9	77326.2	50770.2	-8174.8	31187.5
2021:2	175.7	210306.9	121156.1	76637.7	50690.0	-6819.7	31357.2
2021:3	176.5	211349.5	121777.7	76880.0	50680.9	-6461.6	31527.7
2021:4	177.4	212389.1	122399.1	78071.2	50611.8	-6994.8	31697.9

¹ GDP at factor cost. Expenditure measure; seasonally adjusted

² Consumers expenditure less expenditure on durables and housing

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

⁴ General government current and capital expenditure including stock building

⁵ Exports of goods and services less imports of goods and services

Financial Forecast

	PSBR/GDP % ¹	GDP ¹ (£bn)	PSBR (£bn) Financial Year	Debt Interest (£bn)	Current Account (£ bn)
2016	2.3	1941.6	45.1	58.7	-87.4
2017	2.0	2040.9	40.1	61.8	-65.5
2018	1.6	2133.2	33.4	64.2	-53.9
2019	1.1	2221.8	24.2	68.2	-49.0
2020	0.3	2313.7	6.6	73.3	-38.7
2021	-0.3	2420.2	-6.6	75.9	-26.2
2016:1	-0.6	476.4	-2.7	14.1	-26.6
2016:2	4.6	479.0	22.0	14.3	-21.7
2016:3	2.9	478.7	14.1	14.6	-26.6
2016:4	4.8	490.8	23.7	14.8	-12.5
2017:1	-3.0	493.2	-14.6	15.0	-17.5
2017:2	2.4	501.6	12.0	15.3	-18.9
2017:3	1.6	507.5	8.4	15.4	-17.7
2017:4	1.4	514.1	7.4	15.6	-11.4
2018:1	2.4	517.7	12.4	15.6	-12.2
2018:2	1.8	525.4	9.6	15.8	-16.7
2018:3	1.6	531.2	8.4	16.0	-15.1
2018:4	1.4	537.5	7.3	16.1	-9.9
2019:1	1.5	539.1	8.0	16.3	-9.7
2019:2	1.3	547.1	7.0	16.4	-15.7
2019:3	1.1	553.1	6.2	16.7	-13.6
2019:4	1.0	560.1	5.6	17.4	-10.0
2020:1	1.0	561.5	5.4	17.6	-9.0
2020:2	0.4	569.9	2.0	17.8	-12.8
2020:3	0.1	575.4	0.9	17.9	-10.6
2020:4	0.4	582.7	2.3	18.8	-6.4
2020:1	0.2	585.7	1.4	18.8	-6.2
2020:2	0.0	594.4	-0.1	18.8	-10.0
2020:3	-0.2	600.1	-1.4	18.8	-7.9
2020:4	-0.3	610.7	-2.1	19.2	-2.2

¹ GDP at market prices (Financial Year)



THE WORLD ECONOMY

US

Economic activity remained robust. The quarter-on-quarter (qoq) GDP growth was 0.8% in Q3, marginally up from just under 0.8% growth in Q2. The growth was driven by increases in both domestic and foreign demand. Real consumption increased 0.55% qoq, after 0.83% in Q3. Gross private investment rose sharply to 1.83%, up from 1.0% in the previous quarter. Net exports contributed 0.09 percentage points to the Q3 growth, as exports rose by 0.5% (after 0.9% in Q2) and imports decreased 0.2% (after +0.4% in Q2).

The labour market continued to strengthen. Total non-farm payroll employment increased further by 148,000 in December. The unemployment rate was 4.1% in December, unchanged from the previous 2 months. A strong labour market generated a further increase in wages, with average hourly earnings rising by 2.5% yoy in December.

The economic data for Q4 continued to signal a further expansion due to stronger external demand, and the recent depreciation of the US dollar. For 2018, the tax reform should also boost domestic demand. The services sector experienced slightly slower growth with the business activity index at 52.4 in December (compared to 54.5 in November), while manufacturing output expansion was stronger with PMI at 55.0 in December (after 53.9 in November).

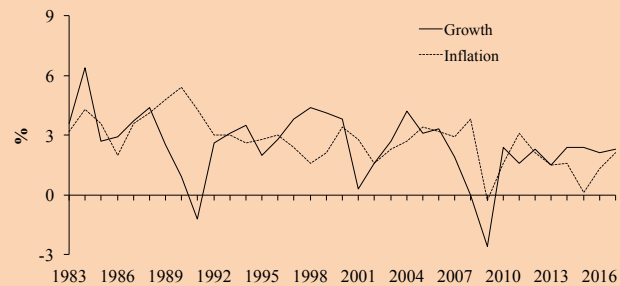
At the November meeting, the FOMC increased the Fed funds target rate by 25 basis points, from 1.25% to 1.5%. Even so, the policy remains accommodative and supportive for the labour market, with the aim of ensuring the return to 2% inflation in the medium term.

Japan

Economic activity continued to expand. Real GDP grew 0.6% in Q3 after 0.7% in the previous quarter. The growth was due to strong foreign demand that compensated for a decrease in domestic demand. Private consumption fell by 0.5% (after rising 0.9% in Q2) and investment grew 0.2% (down from 1.2% in the previous quarter). Net exports contributed 0.5 percentage points to the Q3 growth rate, as exports rose 1.5% (compared to -0.1% in Q2), while imports shrank 1.6% (after rising 1.5% in Q2).

The inflation rate remained below the target of 2%. The yoy CPI inflation was 0.5% in November, up from 0.2% in October. Therefore, at the last meeting of 2017, the Bank of Japan left its monetary policy unchanged. It maintained its expansionary measures by keeping its target for 10-year bond yields at around zero and its short-term interest rate at -0.1%. It committed to purchase government bonds at an

U.S.: Annual Growth Rates of Real GNP and Consumer Prices



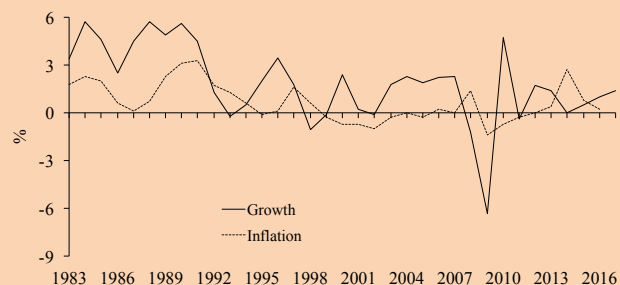
US

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	1.5	2.4	2.4	2.1	2.3	2.7
Inflation (% p.a.)	1.5	1.6	0.1	1.3	2.1	2.1
Real Short Int. Rate	-1.5	-0.1	-1.1	-1.4	-0.7	-0.5
Nominal Short Int. Rate	0.1	0.0	0.2	1.0	1.4	1.8
Real Long Int. Rate	1.6	0.7	0.3	0.3	0.7	0.6
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	93.5	93.7
Nominal Ex. Rate ²	86.00	89.40	99.94	101.9	101.7	101.9

¹The 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.

²The series for the USA is a trade weighted index (1990=100)

Japan: Annual Growth Rates of Real GNP and Consumer Prices



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	0.5	0.9
Real Short Int. Rate	-2.5	-0.6	0.0	-0.7	-0.8	-1.0
Nominal Short Int. Rate	0.2	0.2	0.2	0.0	0.1	0.1
Real Long Int. Rate	-0.8	-1.1	-1.3	-1.2	-0.8	-1.0
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	58.2
Nominal Ex. Rate	98.2	106.7	120.0	118.4	117.7	113.8

¹The 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.

annual pace of around 80 trillion yen (equivalent to 15% of GDP).

Germany

Economy activity accelerated in Q3. Real GDP rose 0.8% in Q3, up from 0.6% in Q2. The main positive contributions came from strong foreign demand. Net exports contributed 0.4 percentage points to the quarterly growth (compared to -0.4 percentage point in Q2), as an expansion in exports (1.7% after 1.0% in the previous quarter) dominated the rise in imports (0.9% down from 2.4% in Q2). Meanwhile, domestic demand slowed down in Q3. Private consumption contracted 0.1%, down from 0.9% in Q2. Gross capital formation increased 0.4% in Q3, down from 1.5% in Q2.

The economic outlook remained bright regardless of the political uncertainty following the election and the loss of seats by the main parties to the euro-sceptic AfD. The labour market stayed robust as unemployment fell to 5.3%, from 5.4% in October. The consumer confidence index was 10.8 in January 2018, up from the 10.7 in both December and November. The composite PMI index was at an 80-month high of 58.7 in December, up from 57.3 in November. The economy ended the year on the highest growth in business activity for nearly seven years.

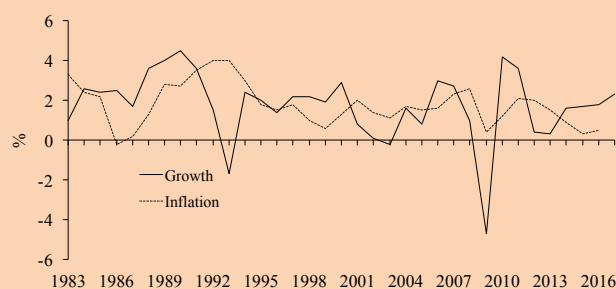
France

Economic activity continued to expand. Real GDP grew 0.5% after rising 0.6% in Q2. Strong domestic demand drove the growth in Q3. Private consumption increased 0.6%, up from 0.2% in Q2. Fixed investment decelerated but remained strong, rising 0.9% in Q3, compared to 1.1% in the previous quarter. A negative contribution to growth came from net trade (-0.6 points, after +0.5 points in Q2), as imports growth accelerated (2.8% in Q3, compared to 0.3% in Q2) and the growth in exports decelerated (1.1% in Q3, after 2.3% in Q2).

Recent surveys signal a further growth in Q3. The business confidence index fell from a ten-year high of 112.8 in November to 112.1 in December. It is still above the 100 long-term average, showing an improvement in business expectations. The Markit composite PMI was 60.0 in December, compared to 60.3 in November. It remained at a very high level, indicating strong expansion.

Despite the economic expansion in Q3, the labour market suffered a setback as a result of an announced reduction in government-subsidised job contracts and the elimination of job support measures that were designed to reduce labour costs. The unemployment rate was 9.7%, up from 9.5% in Q2. The employment rate fell to 65.1% from 65.3% in the previous quarter.

Germany: Annual Growth Rates of Real GNP and Consumer Prices

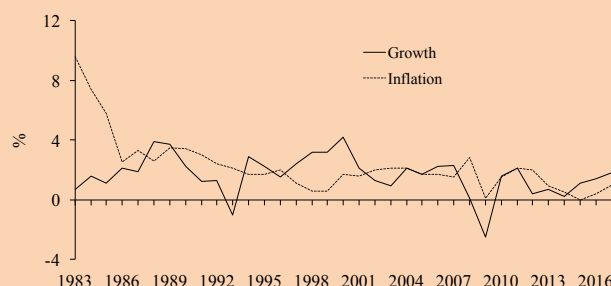


German

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	0.3	1.6	1.7	1.8	2.3	2.2
Inflation (% p.a.)	1.5	0.9	0.3	0.5	1.7	1.7
Real Short Int. Rate	-0.6	-0.2	-0.6	-2.0	-2.0	-2.0
Nominal Short Int. Rate	0.3	0.1	-0.1	-0.2	-0.3	-0.3
Real Long Int. Rate	0.8	-0.8	-1.0	-1.6	-0.8	-0.5
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	94.1	94.6
Nominal Ex. Rate	0.75	0.76	0.90	0.95	0.83	0.85

¹The 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: Annual Growth Rates of Real GNP and Consumer Prices



France

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	0.7	0.2	1.1	1.4	1.8	1.8
Inflation (% p.a.)	0.9	0.5	0.0	0.4	1.0	1.3
Real Short Int. Rate	-0.2	0.1	-0.5	-1.5	-1.6	-1.5
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	-0.4	-0.1
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	95.2	95.0
Nominal Ex. Rate ²	0.75	0.76	0.90	0.95	0.83	0.85

¹The 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.



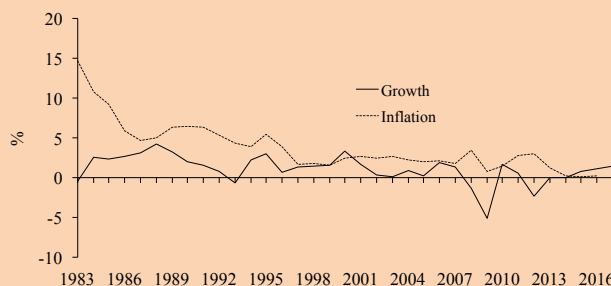
Italy

The economic recovery continued finally- Italy has still not reached its pre-crisis GDP level. Real GDP grew 0.4% in Q3 after +0.3% in Q2. The growth is driven by a recovery in domestic demand. Investment rose sharply by 3.0% in Q3, following 1.1% in the previous quarter. Private consumption increased 0.3%, up from 0.2% in Q2. Net trade also contributed positively to the quarterly growth (0.2 percentage point, after -0.4 points in Q2) as exports grew (1.6%, up from 0.1% in Q2) faster than imports (1.2% following 1.6% in Q2). The recent surveys signal good economic prospects in Q4. The consumer confidence index rose to 116.6 in December from 114.4 in November. The business confidence index was 108.9, marginally up from 108.8 in November.

Euro-zone monetary policy

At its December meeting, the ECB made no change to its monetary policy. The ECB maintained the interest rates on the main refinancing operations, the marginal lending facility and deposit facility at 0.0%, 0.25% and -0.4%, respectively. On Quantitative Easing, it plans to continue with net asset purchases at a monthly pace of €30 billion euro (around 2.5% of GDP) in the period from January to the end of September 2018, and beyond if necessary to ensure the path of inflation to be consistent with its inflation target.

Italy: Annual Growth Rates of Real GNP and Consumer Prices



Italy

	2013	2014	2015	2016	2017	2018
Real GDP Growth (% p.a.)	-1.7	-0.3	0.8	1.1	1.5	1.3
Inflation (% p.a.)	1.2	0.2	0.1	0.2	1.3	1.1
Real Short Int. Rate	0.1	0.0	-0.3	-1.6	-1.4	-1.3
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	1.2	1.3
Nominal Long Int. Rate	1.9	0.5	0.6	0.4	2.3	2.4
Real Ex. Rate (2000=100) ¹	106.9	107.5	102.1	102.0	101.1	101.0
Nominal Ex. Rate ²	0.75	0.76	0.90	0.95	0.83	0.85

¹The 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.

Eurozone annual M3 Growth



WORLD FORECAST DETAIL

Growth Of Real GNP

	2013	2014	2015	2016	2017	2018
U.S.A.	1.5	2.4	2.4	2.1	2.3	2.7
U.K.	2.2	2.9	2.2	2.3	2.1	2.0
Japan	1.4	-0.1	0.5	1.0	1.4	1.1
Germany	0.3	1.6	1.7	1.8	2.3	2.2
France	0.7	0.2	1.1	1.4	1.8	1.8
Italy	-1.7	-0.3	0.8	1.1	1.5	1.3

Growth Of Consumer Prices

	2013	2014	2015	2016	2017	2018
U.S.A.	1.5	1.6	0.1	1.3	2.1	2.1
U.K.	2.3	1.7	0.2	1.2	2.6	2.7
Japan	0.4	2.7	0.8	0.2	0.5	0.9
Germany	1.5	0.9	0.3	0.5	1.7	1.7
France	0.9	0.5	0.0	0.4	1.0	1.3
Italy	1.2	0.2	0.1	0.2	1.3	1.1

Real Short-Term Interest Rates

	2013	2014	2015	2016	2017	2018
U.S.A.	-1.5	-0.1	-1.1	-1.4	-0.7	-0.5
U.K.	-0.8	-2.2	-0.5	-1.5	-2.2	-2.4
Japan	-2.5	-0.6	0.0	-0.7	-0.8	-1.0
Germany	-0.6	-0.2	-0.6	-2.0	-2.0	-2.0
France	-0.2	0.1	-0.5	-1.5	-1.6	-1.5
Italy	0.1	0.0	-0.3	-1.6	-1.4	-1.3

Nominal Short-Term Interest Rates

	2013	2014	2015	2016	2017	2018
U.S.A.	0.1	0.0	0.2	1.0	1.4	1.8
U.K.	0.6	0.6	0.6	0.4	0.4	0.6
Japan	0.2	0.2	0.2	0.0	0.1	0.1
Germany	0.3	0.1	-0.1	-0.2	-0.3	-0.3
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	0.7	0.6
U.K.	-0.8	-0.7	-1.0	-1.5	-1.7	-1.0
Japan	-0.8	-1.1	-1.3	-1.2	-0.8	-1.0
Germany	0.8	-0.8	-1.0	-1.6	-0.8	-0.5
France	1.1	-0.5	-0.8	-1.4	-0.4	-0.1
Italy	1.2	-0.5	-0.7	-1.3	1.2	1.3

Nominal Long-Term Interest Rates

	2013	2014	2015	2016	2017	2018
U.S.A.	3.0	2.2	2.2	2.4	2.8	3.0
U.K.	1.3	1.8	1.3	0.9	1.1	1.5
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	2.4

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	93.5	93.7
U.K.	86.5	93.1	91.6	80.4	74.9	75.0
Japan	63.5	59.8	56.0	58.4	58.3	58.2
Germany	99.0	99.9	94.7	95.0	94.1	94.6
France	100.7	100.8	96.2	96.0	95.2	95.0
Italy	106.9	107.5	102.1	102.0	101.1	101.0

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	101.69	101.89
U.K.	1.55	1.65	1.53	1.23	1.35	1.32
Japan	98.20	106.70	120.00	118.40	117.70	113.80
Eurozone	0.75	0.76	0.90	0.95	0.83	0.85

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

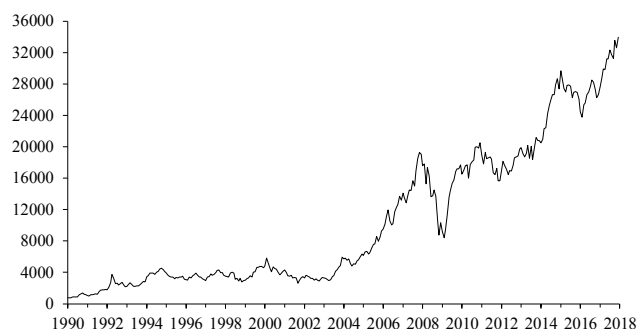
The Indian economy is expected to witness a sharp recovery in the January–March quarter and its GDP growth is likely to grow around 7.6% in the next fiscal year. The Nikkei Manufacturing Purchasing Managers' Index for December rose above its November mark, thus making it the fifth straight month above the 50 level. The IHS Markit, which compiles the index, says that the manufacturing sector witnessed higher payroll figures in December while the rate of job creation rose to its highest since August 2012.

As expected, the Monetary Policy Committee (MPC) of the Reserve Bank of India (RBI) kept the headline repo rate at 6%. Because of the rising food and fuel prices, inflation as measured by the consumer price index has accelerated to 3.58%. Though the central bank has announced that its stance is neutral, it is unlikely to ease monetary policy in a hurry.

The government has breached its fiscal deficit target given in the Budget for 2017–18 in November itself. During the April–November period, the fiscal deficit was 112% of its Rs 5.5 trillion target for the current fiscal year. This means that the government needs to have a fiscal surplus in the next four months combined if it has to meet its target, which is a difficult task. Consequently, the 10-year bond yield rose to 7.26%, the highest since July 2016. The bond market is also factoring in that the government might try to prepare for the 2019 election by announcing a slew of populist measures in the coming budget going to be tabled on February 1.

India's current account deficit widened to 1.2% of GDP in July–September or \$7.2 billion against 0.6% or \$3.4 billion in the same period a year ago. By the end of the fiscal year ending in March, the deficit may rise to 1.7% of GDP, as oil and other global commodity prices continue to gain,

India: BSE Sensitive



while exports remain stable. Notwithstanding a wider current account deficit, India's balance of payments posted a surplus of \$9.5 billion in July–September compared with \$8.5 billion a year ago, helped by a stronger capital account. The capital account surplus, which includes foreign direct investment and portfolio inflows, was at \$6.9 billion in the September quarter compared with \$4.3 billion a year ago.

The rupee started 2018 on a strong note, with the currency edging up to a five-month high of 63.65 against the US dollar. This is the highest value of the rupee against the US dollar since August 2017. The rupee had risen almost 6% against the US dollar in 2017, buoyed by strong inflows into Indian capital markets.

Indian equity markets haven't felt the heat of monetary policy normalization in the advanced nations, primarily because of unabated domestic inflows to the equity market. However, any global event rattling the investors' sentiment may quickly reverse this trend. The S&P BSE Sensex has delivered 27.9% returns in 2017, making it the best year for equities since 2014.

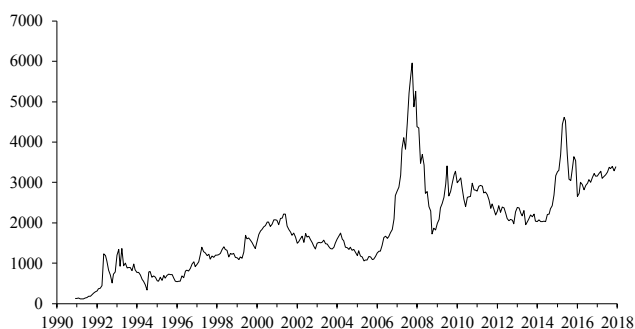
	16–17	17–18	18–19	19–20	20–21
GDP (%p.a.)	7.1	6.5	7.6	8.1	8.2
WPI (%p.a.)	4.5	3.5	4.0	4.1	4.0
Current A/c(US\$ bill.)	-24.0	-26.0	-20.0	-24.0	-26.0
Rs./\$(nom.)	68.2	65.0	66.0	67.0	68.0

China

China's economic growth is expected be about 6.9% in 2017 and 6.5% for 2018. The Chinese economy is beginning to gradually lose steam as a crackdown on air pollution and a slump in the property market have hit industrial output. However, signs of a sharper slowdown — a major fear among global investors — is unlikely to materialize. The official Purchasing Managers' Index (PMI) dipped to 51.6 in December, down from 51.8 in November.

China's central bank followed a U.S. interest-rate increase with one of its own to blunt the effect of the Federal Reserve move on the Chinese economy. The People's Bank of China raised two key short-term interest rates hours after the U.S. Fed's third interest-rate increase this year. Chinese economy is likely to undergo more pains of soaring funding costs in 2018 as the US Fed has pencilled in three quarter-point rate increases for the year and two such increases each in 2019 and 2020.

China: SSE Composite Index



China's exports and imports showed surprising strength in November, underpinned by a recovering global economy and resilient domestic demand. Exports were up 12.3% from a year earlier, accelerating from October's 6.9% pace and well above the 6% expected increase. China's imports in November were up 17.7% from a year earlier, driven by rising commodities costs and domestic demand.

The trade surplus widened to \$40.2 billion in November from \$38.1 billion in October. Even so, the cumulative trade surplus for the first 11 months of the year narrowed to \$376 billion from \$470 billion in the same period in 2016.

The central parity rate of the Chinese yuan strengthened 263 basis points to 6.5079 against the U.S. dollar. Overall the Chinese yuan appreciated more than 6% in 2017.

Stocks in China achieved double-digit gains in 2017 as domestic and global investors increased their exposure to Chinese markets despite worries about a slowing economy and further regulatory crackdowns. China's blue-chip

CSI300 index rose roughly 22% in 2017. Blue chips led gains in China's stock markets in 2017, while many small caps languished.

China is preparing to launch its own yuan-based oil futures contract, a move set to shake up the 96 million barrel-per-day global crude market, currently dominated by trading in London and New York. Uncertainties with this instrument persist as interest of foreign investors and oil majors remains unknown. But authorities in China, the world's biggest importer of crude, hope it will provide a benchmark price for oil in Asia that matches the region's voracious demand. A yuan-denominated oil contract could also challenge the role of the U.S. dollar — currently the dominant commodity-pricing currency — by making it possible for crude exporters to sell the oil in another currency.

	16	17	18	19	20
GDP (%p.a.)	6.5	6.9	6.5	6.0	5.6
Inflation (%p.a.)	2.0	2.2	2.0	2.1	2.0
Trade Balance(US\$ bill.)	510	400	380	350	300
Rmb/\$ (nom.)	6.7	6.6	6.5	6.6	6.7

South Korea

With the world economy growing, South Korea is able to have GDP growth of 3.2% in 2017. South Korea's government expects the economic recovery to continue in 2018 but sees growth at a slightly slower pace than the last year as fiscal stimulus is tapered and a shrinking workforce weighs on the economy. We also expect economic growth of about 3% in 2018, slightly below its 3.2% GDP growth in 2017. The world's fastest ageing population will slow growth and act as a burden on macroeconomic policies in coming years.

Consumer prices were largely stable in December in spite of an increase in petro-chemical goods. Inflation stayed below the BOK's target level for most of 2017, but the central bank sees inflation approaching the target as oil prices rise and the global economy recovers. Inflation for the whole of 2017 was 1.9%. The central bank is likely to keep monetary policy accommodative in 2018 because inflationary pressure is weak even as the economy is expected to continue growing in the coming year. The Bank of Korea had raised interest rates in November for the first time in more than six years to 1.5%, yet tempered market expectations for further hikes by raising concerns about the job market and other uncertainties.

Soaring global demand for memory chips and petrochemicals helped South Korea's exports surge 8.9% in December, lifting its 2017 shipments to the highest on record in value terms. However, exports growth is expected to moderate to 4% in 2018 from an estimated 15.8% expansion in 2017. Exports in 2017 jumped \$573.9 billion



last year, the best since relevant data began to be compiled in 1956.

Imports rose 17.7% in 2017, to \$478.1 billion, supported by an increase in equipment needed to produce memory chips and display products according to the trade ministry. Thus, South Korea posted a combined \$1 trillion in trade for the first time in three years. South Korea's trade surplus came to \$95.8 billion, up from \$89.2 billion in 2016.

Korea: Composite Index



The won appreciated 13% against the U.S. dollar last year, ending 2017 at a 32-month high of 1,074.1. The South Korean won was the best-performing currency of 2017, logging a yearly gain of 12.8% against the U.S. dollar. Investors are piling into South Korea's won, confident that the country won't weaken its surging currency because it fears being labelled a foreign-exchange manipulator by the U.S. The Bank of Korea officials have suggested that the U.S. watch list has influenced their policy toward foreign-exchange interventions.

South Korea's President Moon Jae-in called for a 'new era' in China relations and it has stepped up efforts to reassure Beijing over Thaad anti-missile system deployment. Mr Moon led a delegation of 300 executives on a four-day visit to China and it signals a thaw in diplomatic and business relations between the neighbours. The visit was aimed at bringing Seoul and Beijing closer on the thorny question of North Korea, whose nuclear program has raised tensions across the peninsula.

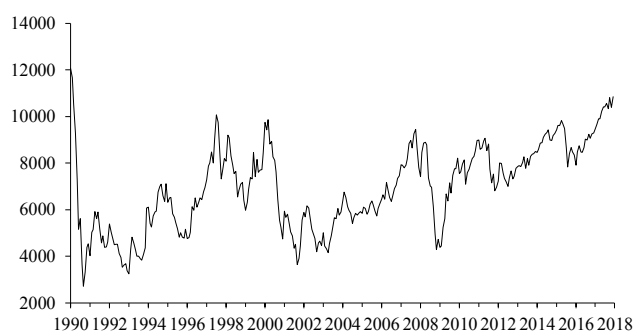
	16	17	18	19	20
GDP (%p.a.)	2.8	3.2	3.0	2.6	2.5
Inflation (%p.a.)	1.0	1.9	1.7	1.8	1.9
Current A/c(US\$ bill.)	88.0	88.0	86.0	80.0	78.0
Won/\$(nom.)	1160	1100	1120	1140	1150

Taiwan

With growing world trade, Taiwan is likely to grow much faster than what was estimated earlier. We expect Taiwan's GDP growth for 2018 to be 2.5%.

The central bank expects inflation to be mild and stable against a backdrop of rising pressure, with the 2018

Taiwan: Weighted TAIEX Price Index



consumer price index forecast to rise 1.12%. The central bank left its policy rate steady for the sixth straight quarter, as exports prove a bright spot for the economy and inflation remains mild. The discount rate was left at 1.375% at its board meeting in mid-December.

Taiwan's exports have grown for the 14th month thanks to a recovering global economy and strong demand for electronic products. Exports rose 14% from a year earlier in November, according to the Taiwan Institute of Economic Research (TIER). Taiwan's total exports in the first 11 months of this

year rose 13.1% compared with the same period of last year, while its imports grew 12.6%, with the trade surplus reaching 51.7 billion U.S. dollars.

The Taiwan dollar ended 2017 on a positive note, logging its biggest yearly gain against the U.S. dollar since 1989, with an 8.14% increase.

	16	17	18	19	20
GDP (%p.a.)	1.4	2.6	2.5	2.3	2.3
Inflation (%p.a.)	1.0	1.0	1.1	1.2	1.2
Current A/c(US\$ bill.)	64.0	68.0	68.0	70.0	71.0
NT\$/\$(nom.)	32.5	32.0	29.6	30.0	30.5

Brazil

The Brazilian government is upbeat about the economy now. It expects the economy to grow 1.1% in 2017 and 3.0% in 2018. Inflation also, seems to be well under control. The Brazilian central bank expects inflation to undershoot the official target range. Brazil targets 4.5% annual inflation, plus or minus 1.5 percentage points. In its quarterly inflation report, the central bank forecast inflation of 2.8% in 2017, down from a prior 2.9% estimate.

The central bank has cut its benchmark interest rate to a record low in mid-December. The bank lowered its Selic rate by half a percentage point to 7%, the lowest level since it was created in 1999. The cut was in line with market expectations and marked the bank's 10th straight reduction in interest rates since October 2016, when the Selic stood at 14.25%.

The bank hopes that it will give a boost to the economy as gross domestic product grew just 0.1% in the third quarter, reinforcing fears that Brazil’s recovery from its historic 2015–16 recession could be a sluggish one.

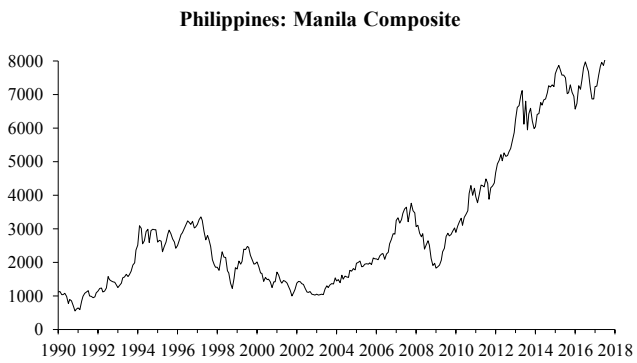
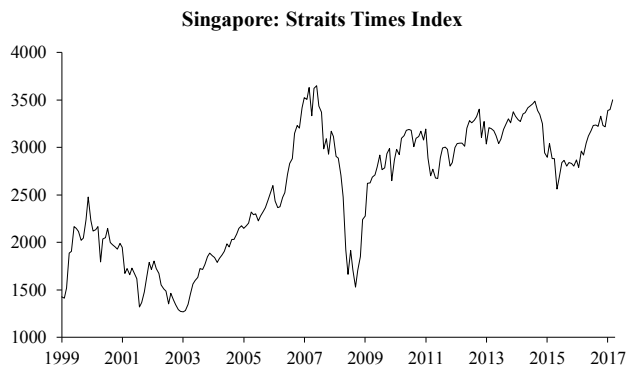
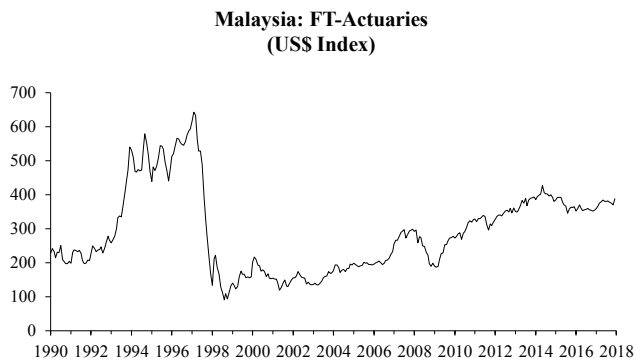
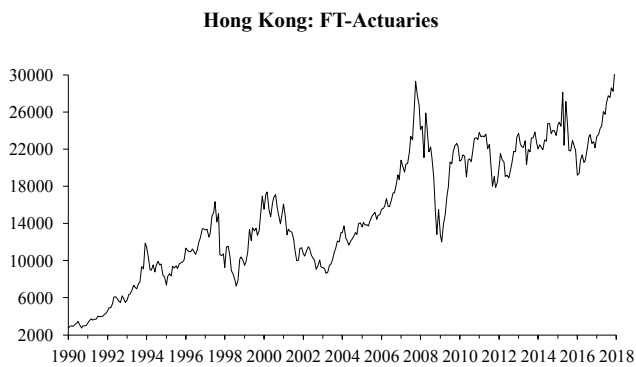


This year, Brazil recorded the largest trade surplus in history. It achieved trade surpluses of US \$62 billion. From January to November, exports reached US \$200 billion, 18.2% higher than in 2016; and imports were US \$138 billion, up 9.6% from the same period last year. Brazil’s currency has been stable for most of the year, contributing to benign inflation and allowing central bankers to focus on rekindling growth. So far, investors have given Mr. Temer the benefit of the doubt. The stock market index (BOVESPA) appreciated 21% in 2017.

	16	17	18	19	20
GDP (%p.a.)	-3.6	1.1	3.0	3.0	3.2
Inflation (%p.a.)	6.3	2.8	3.0	4.0	4.2
Current A/c(US\$ bill.)	-28.0	-25.0	-25.0	-32.0	-30.0
Real/\$ (nom.)	3.5	3.2	3.2	3.2	3.2

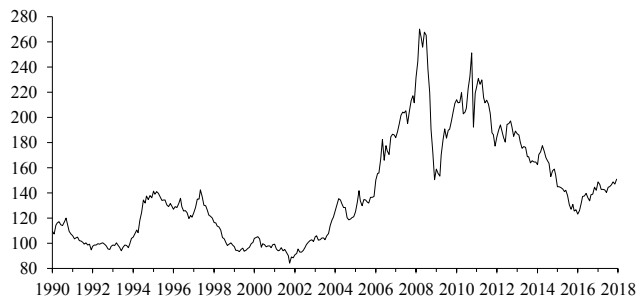


Other Emerging Markets

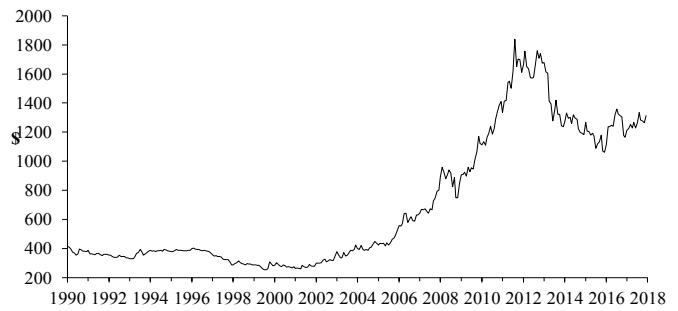


COMMODITY MARKETS

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



Gold Price (in Dollars)



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



Oil Price: North Sea Brent (in Dollars)



Commodity Price Index (Euro)
(Economist)



WHAT TRADE DEAL SHOULD WE NEGOTIATE WITH THE EU?

Patrick Minford

Norway, Switzerland, Canada, Japan? The formulae are rolled out daily in this debate and I suspect most of the people rolling them out have quite a vague idea of what each really means. In fact as David Davis has said many times, and in agreement with all members of this government, the UK is unique and should negotiate its own deal.

What should this be? First let us put it in the context of the gains the UK gets from leaving the EU's Customs Union and Single Market, which the referendum result endorsed. The EU's protectionism of food and manufactures raises prices for all those products by an average of 20% over the best available prices in the developed world; it could well be a lot more than that compared with best available in the developing world, especially China. Getting rid of this protection by setting our own tariffs against major world exporters of these products at zero via Free Trade Agreements gives us a big gain from the resulting free trade: on our Cardiff calculations for Economists for Free Trade, consumer prices would fall 8% and GDP be 4% larger. (Minford, 2017)

The EU's Single Market entails EU regulation across the whole of our economic life- our production methods, our labour relations, our energy market and our financial markets- even though only 12% of our GDP is involved in selling to the EU, the rest of the economy selling either here or in the rest of the world. By leaving the Single Market we can in time recalibrate that regulation to suit the UK economy, with gains we estimate at around 2% of GDP. The 12% who sell to the EU simply need to meet EU product standards, nothing else. We can also control immigration, especially of the unskilled where we are forced by the EU free movement within the Single Market to give a 20% wage subsidy to EU immigrants. This gives us another gain which is particularly significant for poorer households. These in fact benefit on our calculations by around a 15% rise in living standards from the trade and immigration changes.

Any trade deal we do with the EU needs to leave these gains from a 'clean' Brexit intact- this is an economic must but it is also a political one, since it honours the referendum result.

The simplest EU trade deal that achieves this is a simple zero reciprocal tariff agreement on goods. Since our product standards are already aligned, there can be no 'non-tariff barriers' either way. On this basis we would have 'Full Access' to the Single Market. Combined with our free trade agreements around the world this would ensure that

all goods from anywhere reach our consumers at the most competitive available prices- giving us the trade gains above. Because we would be free to regulate our economy as we wished we would also obtain the regulative gains above, and also control our border.

Do we need to add to this deal on goods a deal on services? Some City pressure groups are demanding convergence of regulation. However all that is needed is adherence to the WTO rules of non-discrimination under which we and the EU give each other's financial industries the same access to our financial markets as we give to other countries: mostly this takes the form of 'equivalence', effectively mutual recognition of regulative financial standards. This also makes sense since these standards are internationally agreed within the BIS and other finance industry forums. In fact strictly it does not even need to be in the deal since it just follows WTO law. (Reynolds, 2017)

There is therefore no case for this in the national interest whatever may suit particular firms or groups. The City sells all around the world in highly competitive markets, with no benefit of protection from the EU or the UK government. The EU uses the City markets too, with substantial gains. EU regulation of the City where it has occurred has been of dubious merit: we have had MIFID 1 and 2, caps on bonuses, the ongoing threat of a Financial Transactions tax, and much else. Better for the City to be helped to still greater efficiency by pragmatic UK-based regulation. The EU must under WTO rules give the City the same 'equivalence' that it gives other countries, such as the US.

I am not including in this 'deal' such routine things as airline agreements, tourism or visa arrangements; these are matters of simple cooperation which need to be concluded for ordinary people all over our continent to carry on their lives.

By contrast the idea being put around by some that we should 'shadow' EU regulation and Customs barriers in a 'soft Brexit' is incomprehensible. It loses us our Brexit gains; and for what? 'Access' to the Single Market that we would have anyway; and a compulsion to have industrial protection designed for the benefit mainly of continental industries, at the expense of both our and their consumers. Brexit can deliver us from such nonsense.

Evaluating UK gains and losses from various trade deals The position and protection of food and manufacturing

The key gain for the UK in getting trade deals with the non-EU world and the EU is getting to free trade. Currently the EU runs our tariff and non-tariff trade policies; the result is a high level of protection for agriculture and manufacturing, both of which represent major EU industries with vast lobbying power. Agriculture gets this power via the French government that fiercely protects French farmers; manufacturing gets it through the German government that is itself heavily lobbied by German manufacturers, whether the Mittelstand of small and medium-sized manufacturers or the large multinationals such as Siemens, VW and Bosch.

It is likely that the EU Commission will be under considerable pressure from these governments and lobbies to force the UK to continue with this protection in the UK market so that UK prices of food and manufactures for EU producers are not driven down by tariff-free imports from the non-EU world. However, for the UK to allow this would be to lose the trade gain of Brexit- which works by pushing down prices for consumers of food and manufactures and forcing up productivity in both these sectors while also allowing some resources (whose productivity where they currently are cannot be raised easily) to flow to more productive service sectors.

This gain arises whether one espouses a 'classical' model of trade (as we do) or a 'gravity' model, so beloved currently by many trade economists. It turns out that the concerns 'gravity modellers' had about Brexit was due partly to using not the gravity model itself but various associations in the data that embody a variety of effects of policies and trends over the data period but do not reveal the effects of Brexit. The other reason for their concern was that they simply did not assume the government's announced Brexit policy of moving to free trade. (Minford and Xu, 2017)

The government has announced that in any trade deal with the EU (outside the Single Market and Customs Union) it would not reduce its ability to make free trade deals with the non-EU world. Therefore in principle it could not sign a trade deal that guaranteed continuing the current protection of EU producers, since that would cut across the main feature of Free Trade Deals with the non-EU who would want access to our food and manufactured markets at their world prices, facing no protection from us. In this it will be opposed not just by the EU but also by large parts of the UK farming and manufacturing industry that also benefit from protection.

In order to push its case the EU will link this issue to the role of regulation. By leaving the Single Market the UK can set its own regulations across the domestic economy. Plainly any UK industry exporting to the EU must satisfy the product regulations of the EU for the products and only the products it sells to the EU. In principle this is straightforward. The EU has defined product regulations which it must register with the WTO; it can then in a non-

discriminating way impose these on all countries' industries exporting these products to the EU. Our industries, like those of Russia or the US or China, will simply come under these regulations.

Nevertheless there are some industries where regulation of exports goes 'behind the border'. For example for some foods the EU regulations extend to how the food is produced; for medicines the way in which they have been clinically tested is subject to EU regulations. In such industries if one want to export to the EU there is nothing for it but to obey these regulations. However of course there is nothing to stop these industries ignoring these regulations for home production or exports to other countries; they just have to make sure to keep the production processes separate if they do so.

This will be the first flash point of the EU trade negotiations. The EU is likely to press for UK protection and to threaten to withhold agreement on export product standards. However in the former it would damage UK interests too badly to be a possible basis for agreement; and on the latter it would be acting illegally.

Services trade

In all the sound and fury of lobbying by certain prominent City firms and banks it might have seemed that the EU provided some protection to the City's activities. However this is not the case. The City, as with all our service industries, has never had any protection from the EU. On the contrary the EU has been a source of trade liberalisation in services imports into the EU. For example it has restricted the rights of EU national governments to restrict access for financial services via its 'passporting' facility, and it has created competition for airlines across the EU. In general it has favoured competition within the EU. In finance it has championed free capital movements. The EU is therefore in general pro-free-market in services.

This might seem surprising given that it is protectionist in farming and manufacturing. However the political economy of protectionism suggests the reason: the lobbies in services are far less powerful relative to consumer lobbies than they are in farming and manufacturing. The EU does not have large producer interests in services. For example in finance there are few strong producers; such as there are have naturally migrated to London as their base. In travel apart from some remaining inefficient national airlines, such as Alitalia, there is strong competition between airlines whose main interest is in amalgamating and cutting costs so as to compete internationally.

Nevertheless the EU will use any leverage it can find in services to bolster its aims in goods trade to secure as much protection as it can in the UK market.

What leverage could that be? The EU has threatened to withdraw 'passporting' from UK financial firms after



Brexit, which indeed it can credibly do since passporting only applies within the Single Market. However, as has been noted by Reynolds (2017), 'equivalence' is a close substitute for passporting; and this must be granted for the EU not to violate the GATS non-discrimination clauses within the WTO. Furthermore most financial services are provided nationally via 'work-around' arrangements whereby subsidiaries meet national and EU standards inside the Single Market.

The EU, as we have seen above, uses the City to provide efficient financial services and benefits generally from a free market in services. Therefore it can only exert protectionist leverage, where it is legal by doing so non-discriminatively, by damaging itself in withdrawing world-class service supplies from its own consumers.

Should it do so UK suppliers would be able to divert their supplies to world markets at the same world prices they already face. The reason is that world prices should remain unaffected by the EU trade diversion; the EU diverts some of its demand to its own producers who are thereby unable to supply other world markets, and hence the total of world demand and supply is unaltered, leaving world prices the same. For the UK to penetrate a market it has sold little or nothing in before is also not a problem, given the high competition in all markets and the small share of the UK in virtually all its products, given that it is only some 3% of world GDP. This conclusion is supported by the policy simulations of either our classical model or the gravity model. It follows that any EU threat to use such protectionist leverage would lack credibility and should be dismissed by UK negotiators.

The scenario of negotiating breakdown: No deal

In any negotiation the key factor that determines which side gets the most of what it wants is the breakdown scenario. If one side loses nothing from breakdown, it can walk away from a deal; then if the other side would lose from breakdown, it will have to settle on its opponent's terms.

Most of the analysis one reads about 'no deal' simply looks at short term inconvenience and disruption. However, because this is just short term it is not a good guide because the long term net costs or gains are what continue, by definition, indefinitely: hence if one discounts these by an sensible measure such as the long run rate of interest they accumulate to a huge number that totally dominates any short term dislocation. For example if the net permanent gain is £10 billion and the rate of interest is 3%, then the present value of this is $10/0.03 = £333\text{billion}$. That pays for a lot of short term disruption.

It is possible that if no deal was reached about trade with the EU, then there could be a fair amount of non-cooperation in a variety of areas. However it must be remembered that by law there cannot be discrimination by either side. Also there must be professional, smooth

customs clearance (largely by computer with no hold-ups) again by law. Similarly there must be mutual recognition of product standards, again by law. When it comes to airline agreements these are concluded within international bodies: when there are no EU agreements they must be made bilaterally and a very large number of furious consumers could be involved on both sides.

In terms of general annoyance to consumers, producers and governments on both sides plainly 'no deal' could generate a lot. However this very annoyance and associated illegalities would force a quick series of practical solutions. Short term disruption is so infinitely annoying to ordinary citizens that governments on all side would feel extreme pressure to sort it out by all means available: such means are readily available under international agreements and do not require a trade deal. Hence under a no deal breakdown short term disruption is a negative for both sides but each side would know it could be quickly removed. It acts as a general moderate incentive to both sides to find a deal but does not affect relative bargaining power.

It might be thought that because the UK has a minority government it is more vulnerable to such disruption than the governments of the EU or the EU Commission itself. However there is no reason to think this. In the event of breakdown where the UK is seen at home as having been 'reasonable' in pursuit of its Brexit aims, as agreed in the referendum, public opinion which wants to see Brexit 'done and dusted' would be sympathetic to the government and likely to support its walk-away stance. In the EU there would be likely to be considerable conflict between governments, many of which individually want to see a deal for their own reasons. The EU Commission wants to see general agreement to make progress on broader union, and so would be uncomfortable with such controversy.

What about the long term effects of no deal? Here it is important to use a proper trade model. As noted in Minford and Xu (2017) the classical model is the best guide to the facts of UK trade, while the gravity model gives rather similar answers in practice to Brexit questions.

Under no deal, but one where the UK pursues its planned policy outside the Single Market and Customs Union, of creating free trade by signing agreements with the non-EU world, the key effect is to lower UK prices of food and manufactures and create competition inside the UK economy with these new prices. Plainly with an EU free trade deal with no reciprocal tariffs and other trade barriers, EU goods would also arrive free of any duty or other hindrance in the UK and would also compete with these world prices; we can assume that in order to preserve their sales their prices would fall in line. This would occur under high competition as then otherwise they would lose all their sales. However even under imperfect competition (as in the gravity model) it would be usual to assume that EU producers would price to get the maximum contribution to overheads which would imply a markup on variable cost:

under the usual assumption that the elasticity rises sharply when prices are equal to the competition this delivers a mark-up on variable cost pushing price close to the competitive price.

For UK producers selling in the EU home competition would force their EU prices to equality with world prices: were one UK producer to get more others would divert output to their market, driving prices into line. Under imperfect competition they would price at the same mark-up over home costs in all markets, so again prices would equal those at home.

Suppose instead there was no deal and this consisted of existing tariffs being levied mutually by both sides (this in fact is the most likely scenario since non-tariff barriers would be discriminatory, given that UK and EU regulations are currently identical and would likely remain so for some time.) Then the same logic would apply for pricing by EU producers selling in the UK: they would have to match the new competition, so that their UK prices would remain the same as with a deal. Similarly for UK producers selling into the EU; home competition or their common mark-up would force them to match home competition with their EU prices. So EU producers would now have to absorb the UK tariff; and EU consumers would have to pay the EU tariff on top of the invariant UK price. Hence the tariffs on both sides would be paid by the EU, the UK tariffs by EU producers, the EU tariffs by EU consumers; of course the EU would receive the tariff revenue from its own consumers, making its overall loss equal to the UK tariff revenue as well as some loss of consumer surplus-estimated at approximately £13 billion (Protts, 2016).

The outcome for the UK would be the same as with the full free trade solution. On top of this with no deal the UK financial settlement and the transition period would not occur. The EU would be short of some £28 billion over the rest of its budgetary septennial to 2020; it would also lose the longer term contribution to net liabilities, reported to be worth another £10 billion or so. Also because its customs union with the UK would stop immediately, it would lose two years' worth of the terms of trade gain its producers make on its balance of trade surplus with the UK- estimated at around £18 billion a year: so two years' worth of that would be another £36 billion one-off loss.

From the UK viewpoint paying no financial settlement would be a gain, avoiding the need to pay some £39 billion. Also with no transition period free trade, own-regulation and own-border-control would come two years earlier, bringing forward that long term gain- at roughly 6% of GDP excluding the budgetary transfer, that would amount to some 12% of GDP; assuming that it would otherwise arrive in 2030, bringing it forward to 2028, when discounted at 3% a year, means it would be worth around an extra one-off gain of 9% of GDP, around £180 billion. It would also gain that tariff revenue paid by the EU

producers to the UK Treasury, of £13 billion p.a.; which again, discounted, would be worth some £433 billion.

Of course the short run disruption would be unpopular on both sides of the Channel, with industry and consumers affected. However, UK farming and manufacturing industry has already gained massively from the Brexit devaluation and thereby been given substantial short term compensation for the efforts they must make to raise productivity; those efforts would have to be made rather earlier, but to the benefit of the national interest.

It would seem that overall the breakdown of talks would be positive for the UK to the tune of a one-off gain of £38 billion on the EU budget, plus £180 billion from bringing forward the non-budgetary Brexit gains, plus £433 billion from EU tariff revenue, some £651 billion in all. For the EU it would mean a one-off loss of £38 billion in financial settlement, plus another one-off loss of £36 billion in terms of trade gain, plus the permanent loss due to paying UK tariff revenue of some £13 billion a year which at a 3% discount rate would be equivalent to a one-off loss of £433 billion. So plus £651 billion for the UK versus minus £508 billion for the EU: it could not be more open and shut who least wants a breakdown. For the UK a breakdown would be a short term nuisance but a substantial economic gain; for the EU it is both a short term nuisance and a substantial economic loss.

Conclusions

Plainly both the UK and the EU will strive to conclude a trade deal and in the process wrap up many other administrative details of cooperation. Failure to reach a deal will be greeted by incredulity and annoyance by citizens of both sides faced with a lot of potential short run disruption. However a breakdown remains possible if either side makes intolerable demands. It is for this reason we have made some calculations about the costs and gains of breakdown, besides the short run disruption that would be inevitable to both sides.

These calculations suggest that the EU has a lot to lose from no deal, while on a purely economic calculus the UK would actually gain a fair amount. This suggests that the trade deal, if it occurs, will be concluded on terms close to those the UK will ask for: namely a Canada-plus zero trade barrier on goods, with mutual recognition on services. The UK would remain free after transition to make free trade agreements around the world, to vary its domestic regulation as it sees fit, and to control its borders.

The EU will not however have done badly from this Brexit deal. It will still have a highly competitive UK service sector on its doorstep with which it will enjoy uninterrupted free trade- no change there. On farming and manufactures it will have lost the terms of trade gain on its large trade



balance with the UK; and its farmers and manufacturers, while maintaining their UK sales, will be getting much less revenue on their UK sales generally, while in compensation its consumers will be paying less for UK goods. This generates more competition within the EU goods market which could be capitalised on by the Commission for its pro-competition policies. Furthermore as UK regulation flexes it will put pressure on the EU to follow a more flexible regulatory agenda. With the UK taxpayer no longer subsidising unskilled EU immigration as a job market safety valve EU governments will be forced to adopt more flexible labour market policies- long an objective of the EU Commission. Finally the EU Commission buys two years of time to sort out a new budgetary agenda from 2021 onwards. In short while the EU will lose the gains it makes from goods sales at higher than world prices into the UK market and it will also lose the UK's financial budget contribution, there is little it can do about this as it is an inevitable consequence of Brexit which by now is generally realised will happen and must do so in a way that satisfies the referendum demands. However, it will be stimulated by Brexit into a more flexible and pro-market set of policies for the future which could prove a solid indirect gain to the future EU economy.

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