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# Quarterly Economic Bulletin

Julian Hodge Institute of Applied Macroeconomics





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"Should there be no deal and so no transition, the EU Commission will get a great shock. First its money will not arrive for the transition period, leaving a big 10% hole in two years of the budget. Second EU producers will be paying around £13 billion a year in tariffs into the UK Treasury. Third, the same EU producers will suddenly find that their UK prices are dropping fast under the impact of world competition in the UK market."



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While the world economy continues to grow at the healthy rate of a bit over 3% a year, the UK too is growing at its feasible 2% or a bit less a year, having now reached full employment. Wage growth both here and in the US is puzzlingly moderate at under 3% a year, suggesting that for all the statistics pointing to tight labour markets there is spare supply available. Oil and commodity prices have recovered from their lowest point but are still 40-50 percent below their 2008 peaks; so resources are still in plentiful supply, boosting profits among the world's final producers. Brexit moves fitfully towards completion while Trump's trade tactics may well result in a world with better practices from the EU and China, the big protectionist and mercantilist offenders. Italy has called time on the euro as it currently works; we will have to see whether the euro structure is reformed or retracted. In monetary policy the US is moving away from emergency looseness; the UK is slowly following. The ECB will soon be under pressure to follow too, as M. Draghi steps down.

## How the Civil Service Has Misled Us on the Costs of Brexit and the Customs 24 Union

#### Patrick Minford

The Civil Service has made no secret of its opposition to Brexit, by leaking a new hostile assessment of its long run effects; we have now seen it in the form of some two dozen powerpoint slides published by the Commons Treasury Committee. Unlike the original Treasury referendum report which indefensibly used correlations as if they were causation, it uses a reputable computable general equilibrium model of trade; however it has injected into it absurd assumptions about the costs of leaving the EU customs union and also the gains from free trade agreements with non-EU countries. Once proper assumptions are substituted, it comes up with estimates of Brexit gains similar to ours.



The growth rates being predicted for the UK economy are increasingly focused around 2%. Productivity growth picked up in the second half of 2017 (with hours of work falling) to an annual rate of nearly 4%- though some of this looks purely random. The labour market is tightening and this is finally being understood as related both to wage growth and to productivity. Wage growth is finally rising, though still in nothing like a serious inflationary surge. There is nervousness about the progress of automation and robotics. Probably also there is some spare labour supply among part-time workers.

Inside the firm however there is increasing utilisation of labour capacity, we would think. Huge amounts of labour were taken on in the recovery, with wages seen as rather cheap. But now supplies are tightening and labour needs to be used better within the firm. How could hours of work fall? Much of this could be related to the commitment to 'flexitime' and also to the release of women and men on maternity/paternity, now built into many HR systems. There is also lifetime learning and release for training, all of which is now expected as part of the HR two-sided promise.

The strange first estimate of growth in the first quarter of 2018, at 0.1%, has clearly been the result of very bad weather and its effect on construction which fell sharply and for obvious reasons: who will start building when bad weather is forecast and who will not put it off even further when that weather duly appears? The second quarter has duly showed substantial recovery, though the ONS estimate is not due until July. The usually reliable purchasing managers' indices show values continuing in the 50-55% range of steady growth. The May manufacturing PMI was 54.4; the services PMI was 52.8 in April, and the construction PMI recovered in that month to 52.5 from its weather-related 47 in March.

While there is a natural tendency for commentators to focus on consumer spending, that is not currently the main driver of growth in demand: this is rather net exports because of the role of the Brexit devaluation in correcting the large balance of payments deficit the UK was running in 2015around or just under 7% of GDP. Investment is growing modestly too. Consumer spending was due to slow as devaluation raises consumer prices without a corresponding rise in wages. It has indeed slowed but as real wages now are growing due to a tightening labour market, it should recover somewhat in 2018.

It is interesting that the solid progress of the economy is proceeding against the background of Brexit negotiations that were given new life by Theresa May's Mansion House speech. In it she committed to definite exit from the protectionist EU Customs Union and the intrusive Single Market, into a situation where the UK sets its regulative agenda and also its mission for free trade, besides resuming

Table 1: Summary of Forecast									
	2016	2017	2018	2019	2020	2021	2022		
GDP Growth <sup>1</sup>	1.8	1.8	1.9	1.9	1.9	2.1	2.3		
Inflation CPI	1.1	2.6	2.3	2.0	2.0	2.0	2.7		
Wage Growth	2.4	2.3	2.5	2.1	1.6	2.4	2.9		
Unemployment (Mill.) <sup>2</sup>	0.8	0.8	0.8	0.7	0.7	0.6	0.5		
Exchange Rate <sup>3</sup>	82.1	77.4	77.0	76.2	75.8	76.1	74.9		
3 Month Interest Rate	0.5	0.4	0.4	0.9	2.2	2.8	2.8		
5 Year Interest Rate	0.7	1.1	1.4	2.3	3.3	2.7	2.5		
Current Balance (£bn)	-90.9	-66.3	-60.1	-51.6	-41.2	-29.1	-15.8		
PSBR (£bn)	45.1	45.1	35.3	24.9	9.1	-7.6	-10.9		
<sup>1</sup> Expenditure estimate a	t factor	cost							

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

<sup>3</sup>Sterling effective exchange rate, Bank of England Index (2005 = 100) normal civilised-country control of immigration. Smaller companies are already responding well to the promise of all this. It is often forgotten how much uncertainty is created by the EU's obscure, fitful and idiosyncratic agenda of protection and backward-looking regulation. Interestingly by pitching his tent inside the EU's Customs Union Jeremy Corbyn has underlined the backward protectionist nature of his own programme for the UK. This programme has little appeal either to consumers or to innovative producers. The CBI has welcomed the Corbyn programme, in yet another of its strange policy follies over the years since its 1970s heyday with 'sherry, beer and sandwiches at No 10'. The CBI is now the voice of protected vested interests, a mere 10% of the economy- but even in this 10% much is highly productive and well able to hold its own in world marketshalf our exports of manufactures go to non-EU markets.

The EU Commission response to May's proposals has been predictably aggressive, with much talk of 'cherries and cake'. What this means in translation is that the EU's protectionist 'cake' and the 'cherries' on it in the form of protection for specific sectors like cars and chemicals cannot be 'shared'. But the UK is not asking to share in any protectionism. It will abolish it with respect to the outside world, for the benefit of its own consumers and indeed of the outside world. All it is doing is offering to have free trade between the UK and the EU, solely; any trade passing through the UK to the EU would be unaffected.

This new agreement would be made under WTO laws; it is not generally realised that the WTO will from now on be the only source of international law on the EU and our mutual trade and general commercial relations. Under WTO rules we must both observe strict non-discrimination on goods and services; this specifically includes discrimination in favour of our own residents. Thus we cannot deny recognition of each other's standards when they transparently achieve the same objects or indeed as now are actually the same. This applies as much to chemicals as it does to financial services.

The EU Commission still seems to be blissfully unaware of this, thinking that on day one of Brexit it can suddenly pull out of recognising UK standards. Yet this will be quite illegal as well as absurd. For an organisation as dependent on international law as the EU this is a surprising development.

Should there be no deal and so no transition, the EU Commission will get a great shock. First its money will not arrive for the transition period, leaving a big 10% hole in two years of the budget. Second EU producers will be paying around £13 billion a year in tariffs into the UK Treasury. Third, the same EU producers will suddenly find that their UK prices are dropping fast under the impact of world competition in the UK market.

If it attempts to impose regulative barriers against UK goods and services (attacking 'cake and cherries') it will face a ferocious battle in the WTO courts, which it will lose in short order. Undoubtedly such a battle will cause short term disruption; but this will cut both ways and will further foment extreme dislike of the EU among ordinary EU citizens and firms, such as we are already seeing in Italy, Southern Europe and the Visegrad countries. It would be an ugly episode but it would be quite short.

In our costings of the 'no deal' scenario we find that the UK makes gains while the EU makes losses as above. The UK gains are the mirror image of the losses above; but on top of these gains it gets to the Brexit end game faster, which is a substantial advantage.

It is sad that we have to discuss these things when a 'winwin' deal is so obviously available. But the reason is simple: the EU does not and never has understood the gains from free trade. It is built on the principles of mercantilist protectionism where the aim is to reduce the exports of your trade partners and maximise your own exports. Never mind that the losers are your own consumers and your own economy, as well as less powerful foreign suppliers, such as those from developing countries. The aims of such 'realpolitik' theft from citizens at home and abroad have always, from Bismarck to Juncker, been to build up the power of the federal state.

However the difference today is that there is a world trade and commercial order under the WTO; and the EU's policies are illegal if enacted to create non-tariff barriers against the UK by the use of discriminative standards. Hence 'no deal' cannot include such illegal behaviour. It can solely extend to tariffs. But if the EU goes the route of tariffs on UK trade it will be a spectacular own goal. As this realisation dawns on the EU mercantilists a Canadaplus deal will inevitably emerge from the Channel fog.

## The effects of Brexit on the economy and the Liverpool forecasting record

A few weeks ago our forecasting record came under fire in the FT from Chris Giles\*, with the assertion that it has been worse than that of the Consensus of economists; and also no better absolutely than the Treasury before the referendum- we were 'badly overoptimistic', while the Treasury was 'badly over-pessimistic' but 'we both had a referendum to win'. Furthermore 'our record had got steadily worse over 2016 and 2017', on the basis of our forecasts immediately after the referendum in July 2016.

\*Chris Giles- Growth and Brexit- four lessons..., online FT https://www.ft.com/content/a3a17eac-4a0b-11e8-8ee8cae73aab7ccb

This is complete and indeed irresponsible nonsense, even on provisional ONS estimates, which look as if they will be revised upwards. The ONS has recently admitted to underestimating telecoms productivity growth and also the growth of exports. The latest GDP estimate for the first quarter has been bedevilled by terrible weather. We shall see how big the revisions are when the statistical fog clears in a year or three. What is undeniable and worrying is the flawed and downward-biased pessimism of the official and corporate economist consensus, which Chris Giles is for some extraordinary reason determined to defend. It really does seem that Brexit has warped the minds of many otherwise sane economists.

Take first of all the pre-referendum forecasts of the Treasury and ourselves for the Brexit case (our forecasts were also used by Economists for Brexit, now renamed Economists for Free Trade, denoted EFT).

Growth (%)	Second Half 2016*	Error	2017	Error	Accum. Error Q4 17 v. Q2 16
Latest ONS Est. (April 2018)	1.1		1.8		2.8
Treasury May 2016- severe shock	-0.9	-2.0	-1.3	-3.1	-4.9
shock	0.0	-1.1	0.0	-1.8	-2.9
Liverpool/EFT May 2016	1.3	+0.2	2.7	+0.9	+1.2

\*growth of second half on first half; uses ONS estimates from July 2016.

It can be seen that our error in 2016 was a small overestimate of 0.2, against a Treasury underestimate of 1.1-2.0%; and the accumulated error between Q2 2016 and Q4 2017 was a 1.2 overestimate for us versus a huge 2.9-4.9 underestimate by the Treasury, nearly three to five times our absolute error. The Treasury's forecast has of course rightly become nationally notorious whereas we were a bit on the upside, which given the usual problems with this data is within the customary margins.

Now if we turn to the post-referendum comparison of EFT with the Consensus we find:



Growth (%)	Second Half 2016*	Error	2017	Error	Accum. Error Q4 17 v. Q2 16
Latest ONS Est. (April 2018)	1.1 (1.9)		1.8		2.8
Consensus July 2016	0.05 (1.6)	-1.05	-0.6	-1.2	-2.1
Liverpool/EFT July 2016	1.3 (2.3)	+0.2	2.7	+0.9	+1.2

\*growth of second half on first half required to hit Aug 2016 forecast for the year 2016, given ONS GDP estimates published July 2016. In brackets are figures for whole year forecast. +Smooth quarterly pattern assumed for both Liverpool/EFT and

+Smooth quarterly pattern assumed for both Liverpool/EF1 and Consensus giving forecast year on year growth.

We cannot compare what is happening in 2018 because the Consensus did not forecast 2018 in July 2016. However, the first quarter of 2018 is in any case heavily affected by weather, with construction dropping sharply, probably related both to the actual weather and the weather forecast, so that work was simply pushed to later in the year. We must judge our and the Consensus forecasts made in 2017 for 2018 when we have some more 2018 data.

As can be seen the accumulated error of Liverpool/EFT by the end of 2017 was about half that of the Consensus, while the error for 2016 was a fifth of it. While not on the Treasury super-scale the Consensus error is massivebasically they missed a whole year's growth.

The OBR and the Bank made no comparable forecasts, though the FT includes them on the pretence they did. The OBR made no forecast until November by which time the economy's post-Brexit stability was well apparent. The Bank forecast was published on August 4, when it announced a four-point monetary stimulus, including large QE and an interest rate cut- thus having a massive information advantage compared with private forecasts in July. Both organisations therefore were far more optimistic than the Consensus in July 2016, with good reason. Even so they produced forecasts for 2017 that were much too gloomy. Their forecasts are appended below.

Chris Giles in the FT goes on from these forecasts to assert that 'Brexit has reduced growth' but forecasts have no bearing on this and this assertion is transparently false. We are currently at full employment with wages accelerating; without Brexit there could not have been 'fuller' employment. Brexit has in fact changed the shape of the economy via a sharp devaluation, causing a shift from consumption to net exports and traded sector profits, a necessary correction when we were running an unsustainable current account deficit of nearly 7% of GDP. But Brexit cannot have changed the overall level of employment- or output, as it is too early for any effect on productivity. In fact what forecasters are now converging on is the limit on *pre-Brexit* productivity growth as measured (even after all obvious revisions) by the ONS. Even though 80% of our economy is now services the ONS is making no serious effort to measure their productivity growth accurately, which means proper assessment of their growing quality; yet it is plain that the quality of services has been and continues to grow, from the simplest observations of how our everyday lives are assisted by the services of mobile phones, WIFI and internet-based shopping (for more on this see

https://www.economistsforfreetrade.com/publication/altern ative-brexit-economic-analysis/). So it is that we are faced by 'GDP growth rates' stubbornly stuck below 2%, simply because we refuse to measure them properly. This can hardly be dubbed a Remainer triumph!

As Chris Giles at the FT well knows the real question about the effects of Brexit is how the supply-side capability of the economy will react to it- namely how productivity will respond to free trade and other post-Brexit policies. We have estimated these effects on the basis of actual government policy as generating around 7% more on GDP over the long term. Now that the Civil Service has jettisoned the Treasury's methods in favour of the GTAP Computable General Equilibrium model from Purdue University, their estimates of the trade effects on the same assumptions ought to be rather similar to ours. Getting these assumptions right is where economists should now be turning their attention (see chapter 3 of this Quarterly Bulletin).

Growth (%)	Second Half 2016*	Error	2017	Error
Latest Outturn ONS (April 2018)	1.1 (1.9)		1.8	
Bank of England Aug 2016	1.0 (2.0)	-0.1	0.8	-1.0
OBR Nov 2016	1.1 (2.1)	0.0	1.4	-0.4

#### The strange world created by Quantitative Easing

Few people seem to have grasped the extraordinary nature of QE. One way to approach it is to measure the amount of government money that has been 'printed' since before the financial crisis. The Bank of England 'prints money' by buying assets from the market, usually UK government bonds, also foreign assets for the reserves. The total of these, the BoE 'balance sheet', rose from around £50 billion in 2006 to around £500 billion in 2017, a multiple of 10. So money printed has grown by 900% in that period- an increase totally unprecedented in all our history.

The usual result of the government printing money is that banks increase credit and so deposits in proportion; this would mean that the sum of money and bank deposits (the 'broad money supply') grows in line. However since 2006 total money supply has limped along, just about growing into upper single figures by the time of the recovery from crisis.

For this to happen something stopped banks expanding credit. This was of course massive and draconian regulation of banks 'to ensure no repeat crisis'. This new regulative framework made extending credit expensive for banks, mainly by insisting that they raise equity capital in a large multiple of 'risky' credit. But banks found raising such capital to be highly expensive (for example Barclays which did so in order to avoid being partially taken over by the UK government seems to have paid heavily for it to the Middle East sources it went to); and so they contracted their lending instead.

So the result of this huge money printing was simply that the banks held the extra money as bank reserves without lending it out. Meanwhile the BoE has lent this huge amount of money it printed to the government: this amounted to one third of all government debt, around 25% of GDP, over the crisis period. Nearly two thirds of the deficits run by the government since the crisis began have been financed by printing money. The rate the government has had to pay on its debt has fallen dramatically as the BoE has ramped up demand for it. Today the yield on government long term borrowing is still less than 1%, below the rate of inflation of 2% plus- a negative real return, in which governments are effectively being paid to borrow!

Meanwhile smaller private borrowers who could not get access to bank credit were having to pay much higher rates. The only credit available was on 'riskless' lending such as mortgages or car loans where the banks did not need to get hold of extra capital.

Also savers who relied on investing in government bonds or pensions invested in government bonds got negative real returns.

As for their pensions, if these were related to final salaries ('defined benefit'), these became 'insolvent' according to the standard regulative valuation formula which assumes that they invest solely in government bonds. A swathe of company pensions have been declared in deficit; and notoriously the Universities Superannuation Scheme with them. Meanwhile returns on pensions generally are reduced, since they must to a large extent invest in government bonds to ensure ability to pay out to their pensioners.

Who has done well out of QE? Plainly the government first and foremost. Then any savers who could invest in equities have driven up equity prices as interest rates have fallen making investment in bonds unattractive; this has benefited large companies funded by equities.

Summarising, QE and the accompanying crisis regulation has transferred resources to the government and large corporates away from savers and smaller businesses. This has meant savings are not being channelled to the best uses; competition from small business for dominant large business has been muted; large businesses which should contract or be broken up are being kept alive by cheap money; pensions are in crisis.

The BoE is reluctant to reverse QE because this would raise interest rates and be contractionary on demand. Yet it is plain that there are huge monetary imbalances ('distortions') created by QE.

The answer to the BoE's dilemma is that simultaneously bank regulation must be loosened. Thanks to President Trump there are moves internationally to do this. The BoE is resisting this; but it should think again. There are other ways of ensuring the safety of the banking system, notably by more active support by the BoE itself; this can include both lender of last resort and monitoring of banks without draconian capital requirements.

## A note on Public Debt and QE- the ONS and OBR's monetary Howler

As we have seen QE involved a massive buying of government bonds by the BoE with money being printed to pay for it, and winding up as bank reserves. What effectively this did was to retire government debt and substitute for it money. Debt and money are quite different. If a private person holds government debt they will receive future interest and capital from the government and this piece of paper can be sold on to anyone who will receive this from the government as due payment.

However on money the government owes nothing: notionally the piece of monetary paper, a pound for example, says the BoE on behalf of the government will pay 'a pound (of gold)' to the bearer. However this is an ancient thing from the origins of the Bank and nowadays cannot be enforced. What gives money its value is not any promise of payment from the government but simply the fact that it can be used to buy goods and services. So with money the concern is whether the amount printed is surplus to such needs as people have to buy goods and services: if too much is printed there will be inflation.

Strictly then QE meant that there was less public debt in private hands, and instead more money, with the BoE (part of the public sector) holding the public debt involved. To put numbers on it, at the end of 2016/17 financial year total public debt issued was 80% of GDP; but about a third of this (25% of GDP) was held by the BoE. Hence only 55% of GDP constituted public debt held in private hands. Nevertheless it is usual to look at the public debt issue without QE as the relevant debt for government purposes



since we assume that the QE will be reversed, on the grounds that the extra money printed cannot be left indefinitely as bank reserves without a risk of igniting a massive credit boom and so huge inflation. Hence the figure we would use is 80% of GDP (at end 2016/17).

The ONS and OBR now make a strange adjustment. It turns out that the latest round of QE involved the 'Term Funding Scheme', worth £192 billion (8% of GDP). This takes the form not of buying government bonds but instead of lending money directly to private companies. The ONS and OBR take the view that these loans are not safe ones like government bonds and so cannot be counted as BoE assets that reduce government debt. However they argue the bank reserves that resulted from the money printed are a debt of the BoE and therefore public debt. So they ADD 8% of GDP to public debt, this being the 'extra' BoE debt due to the Term Funding Scheme.

This is pure nonsense because the bank reserves are money not debt. Effectively what the BoE has done is bought Loans to the private sector in place of Loans to the government, and in the long run these private loans can be sold off in exchange for money in just the same way as government bonds. True, their value may change; but so may the value of government bonds. There is no essential difference. It remains the case that public debt (net of private debt held by the government) is 55% of GDP; and that due to QE money is 25% of GDP higher. And that public debt with QE reversed this would be 80% of GDP.

The 88% of GDP 'net public debt' allowing for the Term Funding Scheme is simply a monetary 'Howler'- i.e. a basic misunderstanding.

#### The Trump effect

Times and mores change; today we have the social media, prominent in politics. But the way Trump is simultaneously criticised and patronised by the 'liberal' commentariat is similar to the way Reagan was criticised and patronised by it. However, Reagan achieved a major conservative revolution in policy and also stimulated the economy with a major tax-cutting package; he famously pretended to be not very smart but this was for him the secret of his electoral success, as being seen as 'smart' is no way to win votes in the USA. Fast forward from the 1980s to today and Trump embodies similar tactics, updated for social media and today's tiny attention spans. He produces a daily theatre for his core supporters, designed to entertain them and keep them in the loop, convinced that he has not become a Washington swampy. Meanwhile he has managed at last to create a cadre of loyal and highly competent administrators around him, led by vice-president Mike Pence. He has also used the bland arts of political good fellowship to strike up rapports with Republican Congress people. This is all out of the classic Reagan playbook, merely updated.

The Trump tax package is highly significant and cuts taxes all the way down the scale, cutting back on deductions and mostly doubling thresholds. The Table below gives a bald summary of it all. The achievement of finally getting sense into the US corporate tax, and jettisoning its 'worldwide' tax base in favour of simply taxing US corporate profits, is a big one. Personal tax cuts are less dramatic but they confirm the US as a low marginal tax rate economy: they are being cut, not raised as almost everywhere else.

#### The Trump Tax Act Key Elements

- Corp tax now 21% from 35%: 'territorial' so foreign income untaxed; favourable rate for returning cash from abroad; all buildings/equipment deductible\*
- Income tax changes\*: double tax thresholds: rates fall to 10/12/22/24/32/35/37 from 10/15/25/28/33/35/39.6
- Child tax credit doubles; state and local tax/mortgage interest deductions capped; medical exp deductible if above 7% of income; no tax penalty if no health insurance (v Obamacare)
- IHT threshold doubled to \$11.2 million\*
- Estimated stimulus to demand (various): 0.6-1% GDP, raise public debt \$1 trillion (5% of \$20 tr. GDP) on top of existing \$20 tr. debt (c100% of GDP)

\*expire mid-2020s

In a concession to concerns about the US public debt, now 100% of GDP, and due to rise by \$1 trillion (5% of GDP) from the tax package, some of the tax cuts are supposed to lapse in the mid-2020s. But they will almost certainly be renewed, as taking away personal gains from people is impossible politics. How worried should investors be about US government solvency? Not very. First of all the Federal Reserve, America's central bank, holds assets of \$4.5 trillion, nullifying nearly a quarter of the US public debt. That will gradually be sold off but until it is, the public debt/GDP ratio is correspondingly reduced. Also the 'secular stagnation thesis' is well and truly buried now by the obvious surge in US growth, accompanied by finally stronger wage rises. Growth in nominal GDP could reach 5-6% a year which will reduce the debt burden.

At the same time the Trump administration is moving strongly on a deregulation agenda. The result is that growth is becoming stronger particularly in energy-producing and financial sectors.

We have yet to see how the infrastructure and Obamacarereform programmes roll out. Fortunately for the Trump administration a new triad of Amazon, Berkshire Hathaway and JP Morgan are moving into the healthcare sector which is ripe for disruption, with inefficient and monopolistic practices rife throughout it. Against this background reform and even abolition of Obamacare looks more promising. On infrastructure there are major possibilities for using private sector arrangements that allow charging or shadowcharging systems so that government does not have to do it itself. Even road pricing these days has become technologically feasible via satellite tracking.

Much is made of Trump's supposed stance against free trade. However this is more to be seen through the lens of a large trade player retaliating against unfair trading practices which worsen its terms of trade. We are in the realms of 'optimal tariff theory' here, especially with some of China's practices in areas such as intellectual property rights. We should not confuse the interests of a large player in resisting bad foreign practices, with the interests of small players like the UK in a generally robust WTO system. The WTO is not well set up to deal with the large bilateral abuses with which the US is concerned. Court cases between large players such as the US and the EU (on GM foods for example) have been long and tedious and have failed to lead to resolution, even when there has been a judgement (as on GM foods in 2006).

It is encouraging to see that China is now talking seriously to the US on a variety of issues, including trade across the board and North Korea. It is less encouraging to see the EU failing to get the point about its own mercantilist trade surplus and protectionism in food and cars for example; nor will Germany spend more on defence, another US demand, because its coalition cannot upset its socialist component. Both will be hurt by Trump's tactics until they understand and react. Fortunately the UK will soon be out of the EU and can take a very different line, including a direct Free Trade Agreement with the US. Looking ahead to where this may lead in world trade practices, we can see some big improvements: China becoming a more cooperative player, the EU learning from hard ball, and the UK moving towards free trade with the US as part of a general move to global free trade. Even if we are snared for a period in the EU customs union, that is not any sort of sustainable equilibrium for us, as it is totally against our longterm trading interests and will be dumped by any future sovereign UK government.

In sum, it does seem fair to say that America is back as a strong source of growth, that will now strengthen world growth generally. With raw material capacity still large and overshadowing commodity markets, we see a long period of world expansion ahead. The main risk to the world economy is that central banks repeat the past mistakes of the 2000s in excessively loose monetary policy. Our hope is that progressive reversal of the financial regulation backlash following the financial crisis will allow interest rates to rise, central banks to sell off their huge portfolios of bonds, and so lead to a normal monetary environment that will permit moderate continued growth for a long time.



## THE UK ECONOMY

#### Vo Phuong Mai Le

The economy's growth in the first quarter was weak, probably due to atrocious weather affecting not only construction, which collapsed, but also spending generally. Real GDP on the preliminary estimate rose 0.1% in Q1 2018, after 0.4% in the last quarter 2017. Manufacturing output grew 0.2% (after 1.3% in Q4 2017), services rose 0.3% (after 0.4% in Q4 2017) and construction fell 3.3% (following -0.1% in the previous quarter).

Recent data and surveys signal a more normal Q2. The manufacturing sector Purchasing Managers' Index (PMI) business activity index was 54.4 in May, 53.9 in April. The services PMI was 52.8 in April and 51.7 in March. The construction PMI rose to 52.5 in April, up from 47 in March.

#### Labour market, costs and prices

Meanwhile labour market conditions continued to strengthen, even though the economy has already reached apparently 'full' employment. The employment rate rose to 75.6% in Q1 from 75.2% in Q4 2018. The unemployment rate fell to 4.2% from 4.4% in O4 2018. The labour market continued to tighten, so that average weekly earnings excluding bonuses increased 2.9% yoy in Q1, slightly up from 2.8% in Q1 2017. Nevertheless, this is certainly not a labour market screaming with excess demand: wage growth is still muted, suggesting that there is still some additional supply available, perhaps from part-time workers wishing to work more hours. Low wage growth means firms will use more labour. Labour productivity, or output per hours, decreased 0.5% on Q1 2018, down from a 0.7% increase in Q4 and 0.9% in Q3 2017. This slowdown was a result of total hours picking up at 0.6%, while the growth in the gross value added only rose to 0.1%.

Annual CPI inflation was 2.4% in April and has fallen gradually from 2.7% in February. Annual input price inflation rose 5.3% yoy in April, up from 4.4% in March. Output price inflation was 2.7%, unchanged from March.

#### **Fiscal and Monetary Developments**

For the full fiscal year 2017-2018, public sector net borrowing was £40.5 billion, down by £5.7 billion compared with the previous fiscal year. This is the lowest net borrowing since 2007. The reduction in net borrowing continues to facilitate a reduction in net debt as a percentage of GDP. Public sector net debt was £1583.2 billion (75.8% of GDP) at the end of April, compared to 78.0% on April 2017.

Reacting to slower economic growth and gradually falling inflation, the Bank of England Monetary Policy Committee





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decided to keep Bank rate at 0.5%; and it made no changes in the size of its balance sheet, so there has been no reversal of QE. The Committee agreed that any future rise would be at a gradual pace and a limited extent. In this approach it is parting company from the US Fed which has been gradually normalising monetary policy, raising rates and reversing QE. It has taken the view that the 'emergencyloose' setting of monetary policy must be replaced with a more normal setting. It is hard to understand why the Bank does not take a similar view.













## **UK FORECAST DETAIL**

	Inflation % <sup>1</sup>	Short Dated	3 Month	Nominal	Real Exchange	Real 3 Month	Inflation	Real Short
	(CPD)	(5 Veer)	Int Rates	Fychange	Reato <sup>3</sup>	Int Rates % <sup>4</sup>	(RPIX)	Dated Rate of
	(((1))	(S I Cal) Interest Rates	Int. Kates	$R_{ate} (2005=100)^2$	Natt	IIIt. Katts 70		Interest <sup>5</sup>
		Interest Rates		Rate (2003-100)				Interest
2016	11	0.7	0.5	82.1	81.4	-1.2	19	-1.5
2017	2.6	0.6	0.4	77.4	75.5	-1.7	3.8	-1.5
2018	2.0	13	0.4	77.0	75.5	-1.6	3.0	-0.9
2010	2.0	2.3	0.9	76.2	74.9	-1.0	2.5	0.1
2019	1.0	3 3	2.2	75.8	74.6	0.2	2.3	1.1
2020	2.0	2.2	2.2	75.0	75.4	0.2	2.5	0.6
2021	2.0	2.7	2.0	/0.1	/3.4	0.2	2.3	0.0
2017:1	2.2	0.6	0.3	76.8	75.0	-1.7	3.3	-2.0
2017:2	2.6	0.4	0.4	78.2	76.4	-1.5	3.8	-2.2
2017:3	2.7	0.6	0.3	76.7	74.5	-1.5	4.0	-1.8
2017:4	2.8	0.8	0.4	77.9	76.0	-2.1	4.1	-1.5
2018:1	2.3	1.1	0.3	77.0	75.6	-1.7	3.0	-1.1
2018:2	2.4	1.3	0.4	77.1	75.6	-1.7	3.2	-0.8
2018:3	2.2	1.3	0.5	76.6	74.7	-1.5	2.9	-0.7
2018:4	2.2	1.3	0.5	77.2	75.7	-1.6	2.8	-0.7
2019:1	2.0	2.3	0.6	76.7	75.6	-1.4	2.5	0.4
2019:2	2.0	2.3	0.6	76.0	74.6	-1.4	2.4	0.4
2019:3	1.9	2.3	0.8	76.2	74.7	-1.0	2.4	0.4
2019:4	1.9	2.3	1.6	76.1	74.7	-0.3	2.4	0.4
2020 1	1.0	2.0	1.0	75 (	74.4	0.0	2.4	0.0
2020:1	1.9	2.8	1.9	/5.6	/4.0	0.0	2.4	0.9
2020:2	1.9	2.8	1.9	/5.8	/4.6	0.0	2.4	0.9
2020:3	1.9	3.6	1.9	/6.0	/4.6	0.1	2.3	1.8
2020:4	1.8	3.8	3.0	75.9	74.6	0.7	2.2	1.8
2021:1	1.9	2.8	3.0	76.2	75.6	0.6	2.3	0.7
2021.2	19	2.7	2.8	76.3	75.6	0.2	2.3	0.4
2021:3	1.8	27	2.0	75.9	74.6	-0.2	2.2	0.1
2021:3	23	2.6	2.8	76.1	75.6	0.1	3.1	-0.1
2021.1	2.5	2.0	2.0	/0.1	15.0	0.1	5.1	0.1
2022:1	2.6	2.7	3.2	72.5	72.4	0.2	3.3	0.6
2022:2	2.8	2.6	3.3	71.3	71.4	0.8	3.3	0.8
2022:3	3.2	2.5	2.9	71.0	71.6	0.9	3.6	0.8
2022:4	3.0	2.5	3.0	70.4	71.4	1.0	3.5	0.5

Consumer's Expenditure Deflator 2

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Sterling Effective Exchange Rate Bank of England Ratio of UK to other OECD consumer prices adjusted for nominal exchange rate Treasury Bill Rate less one year forecast of inflation Short Dated 5 Year Interest Rate less average of predicted 5 year ahead inflation rate 5

#### Labour Market and Supply Factors (Seasonally Adjusted)

	Average	Wage Growth <sup>2</sup>	Unemployment (New Basis)	Millions	Real Wage Rate <sup>4</sup>
	$(1990=100)^1$	Growth	Percent <sup>3</sup>	1411110115	(1990=100)
2016	253.2	2.4	2.2	0.8	141.7
2017	259.1	2.3	2.2	0.8	142.2
2018	265.5	2.5	2.1	0.8	142.5
2019	271.1	2.1	1.9	0.7	142.7
2020	275.4	1.6	1.9	0.7	142.3
2021	282.1	2.4	1.5	0.6	142.9
2017:1	255.8	2.3	2.1	0.8	143.9
2017:2	256.2	2.6	2.2	0.8	141.3
2017:3	259.8	2.1	2.2	0.8	142.4
2017:4	259.3	2.1	2.2	0.8	141.1
2018:1	260.8	2.6	2.1	0.8	143.0
2018:2	263.5	2.6	2.1	0.8	141.8
2018:3	265.2	2.4	2.1	0.8	141.8
2018:4	265.8	2.2	2.0	0.7	141.0
2019:1	264.9	1.7	2.0	0.7	142.3
2019:2	268.0	2.6	2.0	0.7	141.3
2019:3	269.7	2.0	2.0	0.7	141.2
2019:4	270.8	2.1	1.9	0.7	140.8
2020:1	269.8	1.9	1.9	0.7	142.0
2020:2	272.5	1.8	1.9	0.7	140.8
2020:3	273.6	1.4	1.9	0.7	140.7
2020:4	275.1	1.3	1.8	0.7	141.0
2021:1	276.5	2.6	1.8	0.6	141.7
2021:2	278.3	2.3	1.7	0.6	140.6
2021:3	280.7	2.2	1.5	0.6	140.9
2021:4	283.3	2.5	1.4	0.5	141.0
2022:1	285.8	2.4	1.3	0.5	141.5
2022:2	288.5	3.0	1.4	0.5	141.0
2022:3	290.9	3.1	1.2	0.5	141.2
2022:4	293.0	3.2	1.1	0.4	141.4
<sup>1</sup> Whole Economy					

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

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Expenditure Index         £ Million 90 prices         Non-Durable Consumption <sup>2</sup> Private Sector Gross Investment Expenditure <sup>4</sup> Public Authority Expenditure <sup>4</sup> Net Experts <sup>4</sup> AFC           2016         159.5         763688.6         441080.4         294912.8         197985.9         -70902.2         99388.2           2017         162.3         777336.9         448225.6         297689.1         19885.77         -65371.5         97584.0           2018         1654.4         792196.2         454105.9         3020020.3         199247.8         -62093.1         101071.5           2020         171.8         822560.9         467283.4         308855.9         20138.2         -4966.9         105742.6           2016/15         1.8         1.6         0.9         0.4         -1.7           20171/6         1.9         1.3         1.5         0.2         3.9           2018/17         1.9         1.0         2.0         0.7         2.2         20           2019/18         1.9         1.9         0.2         0.7         2.0         2.0           201712         1.6         1.93340.7         110460.5         74512.0         50838.0         -16948.9         25520.9	Estimates a	Estimates and Projections of the Gross Domestic Product <sup>1</sup> (£ Million 1990 Prices)									
2016         159.5         76368.6         441080.4         294912.8         197985.9         -70902.2         97584.0           2018         165.4         792196.2         454105.9         302003.3         199247.8         -60371.5         97584.0           2019         168.6         807506.6         455803.7         308033.2         200602.7         -56385.7         103255.3           2020         171.8         822560.9         467283.4         308558.9         201938.2         -49863.9         103769.9           2021         175.3         839355.7         476699.4         310406.6         203070.4         -42896.0         107742.6           2016/15         1.8         1.6         0.9         0.4         -1.7           2017/16         1.9         1.3         1.5         0.2         .2           2018/17         1.9         1.0         2.0         0.7         .2.0           2021/12         2.3         2.1         0.9         0.6         .2.5           2017.1         161.5         193340.7         110460.5         74512.0         50838.0         -16948.9         2520.9           2017.2         161.9         193817.5         111980.7         71917.4 <th></th> <th>Expenditure Index</th> <th>£ Million '90 prices</th> <th>Non-Durable Consumption<sup>2</sup></th> <th>Private Sector Gross Investment</th> <th>Public Authority</th> <th>Net Exports<sup>5</sup></th> <th>AFC</th>		Expenditure Index	£ Million '90 prices	Non-Durable Consumption <sup>2</sup>	Private Sector Gross Investment	Public Authority	Net Exports <sup>5</sup>	AFC			
2016         159.5         763688.6         441080.4         294912.8         197985.9         -70902.2         99388.2           2017         162.3         777336.9         448255.6         297680.1         19887.7         -65371.5         97584.0           2019         166.6         807506.6         458503.7         308033.2         200002.7         -56385.7         101071.5           2020         171.8         82250.9         467233.4         308558.9         201938.2         -49863.9         105356.9           2021         175.3         839535.7         476699.4         310406.6         203070.4         -42896.0         107742.6           2016/15         1.8         1.6         0.9         0.4         -1.7           2017/16         1.9         1.3         1.5         0.2         3.9           2018/17         1.9         0.2         0.7         2.0         2.0           2020/19         2.1         2.0         0.6         0.6         2.3           2017.2         161.9         19381.7         1110460.5         74512.0         5038.0         -16948.9         25520.9           2017.2         161.9         19381.7         113106.1         776454.1					Expenditure	Expenditure					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2016	159.5	763688.6	441080 4	294912.8	197985 9	-70902.2	99388 2			
2018         165.4         792196.2         454105.9         302003.3         199247.8         -62093.1         101071.5           2019         166.6         807506.6         458503.7         308033.2         200602.7         -56385.7         103255.3           2020         171.8         822560.9         467283.4         308558.9         20193.2         -49863.9         103569.9           2021         175.3         839535.7         476699.4         310406.6         203070.4         -42896.0         107742.6           2016/15         1.8         1.6         0.9         0.4         -1.7         3.9           2017/16         1.9         1.3         1.5         0.2         3.9           2018/17         1.9         1.0         2.0         0.7         2.0           2020/19         2.1         2.0         0.6         0.6         2.3           2017.2         161.5         193340.7         110460.5         74512.0         50838.0         -16948.9         25520.9           2017.2         161.9         193817.5         111980.7         71917.4         48893.4         -16608.3         22345.6           2017.3         162.6         194710.8         112800.0	2017	162.3	777336.9	448255.6	297689 1	198857.7	-65371.5	97584.0			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	2018	165.4	792196.2	454105.9	302003 3	199247.8	-62093 1	101071 5			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2019	168.6	807506.6	458503 7	308033.2	200602 7	-56385 7	103255.3			
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	2020	171.8	822560.9	467283.4	308558.9	201938.2	-49863.9	105369.9			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2020	175.3	839535.7	476699.4	310406.6	203070.4	-42896.0	107742.6			
2017/16         1.9         1.3         1.5         0.2         3.9           2018/17         1.9         1.0         2.0         0.7         2.2           2018/18         1.9         1.9         0.2         0.7         2.0           2020/19         2.1         2.0         0.6         0.6         2.3           2021/20         2.3         2.1         0.9         0.6         2.5           2017:1         161.5         193340.7         110460.5         74512.0         50838.0         -16948.9         22520.9           2017:2         161.9         193817.5         111980.7         71917.4         48893.4         -16008.3         22345.6           2017:3         162.6         194710.8         112800.0         73915.8         49324.8         -15656.7         23783.1           2018:1         164.0         19642.1         112066.3         76454.1         5036.29         -17160.6         25382.9           2018:2         165.0         197573.2         113169.1         74697.6         49463.3         -14870.8         24885.4           2018:3         165.9         198621.8         114178.4         74885.7         49577.5         -14829.7         25192.2 </td <td>2016/15</td> <td>1.8</td> <td></td> <td>1.6</td> <td>0.9</td> <td>0.4</td> <td></td> <td>-1.7</td>	2016/15	1.8		1.6	0.9	0.4		-1.7			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2017/16	1.9		1.3	1.5	0.2		3.9			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	2018/17	19		1.0	2.0	0.7		22			
2020/19         2.1         2.0         0.6         0.6         0.6         2.3           2021/20         2.3         2.1         0.9         0.6         2.3           2017:1         161.5         193340.7         110460.5         74512.0         50838.0         -16948.9         25520.9           2017:2         161.9         193817.5         111980.7         71917.4         48893.4         -15656.7         23783.1           2017:4         163.3         195468.0         113014.4         77344.0         49801.5         -16757.6         25934.3           2018:1         164.0         196342.1         112066.3         76454.1         50362.9         -17160.6         25382.9           2018:2         165.0         197573.2         113169.1         74697.6         49463.3         -14870.8         24885.4           2018:4         166.8         199659.0         114692.1         75965.9         49844.0         -15232.1         25611.1           2019:2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019:2         168.2         201405.6         114247.9         7763.3         50010.4         -14262.6         <	2019/18	19		1.0	0.2	0.7		2.0			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2020/19	2.1		2.0	0.6	0.6		2.3			
2017:1         161.5         193340.7         110460.5         74512.0         50838.0         -16948.9         25520.9           2017:2         161.9         193817.5         111980.7         71917.4         48893.4         -16008.3         22345.6           2017:3         162.6         194710.8         112800.0         73915.8         49324.8         -15656.7         23783.1           2018:1         164.0         196342.1         112066.3         76454.1         50362.9         -17160.6         25382.9           2018:2         165.0         197573.2         113169.1         74697.6         49463.3         -14870.8         24885.4           2018:4         166.8         199659.0         114692.1         75965.9         49844.0         -15232.1         25611.1           2019:1         167.5         201495.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019:2         168.2         201405.6         114237.9         7693.3         50010.4         -14262.6         26021.1           2020:1         170.6         203278.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020:2         171.3         205141	2021/20	2.3		2.1	0.9	0.6		2.5			
2017:2         161.9         193817.5         111980.7         71917.4         48893.4         -16008.3         22345.6           2017:3         162.6         194710.8         112800.0         73915.8         49324.8         -15656.7         23783.1           2017:4         163.3         195468.0         113014.4         77344.0         49801.5         -16757.6         25934.3           2018:1         164.0         196342.1         112066.3         76454.1         50362.9         -17160.6         25382.9           2018:2         165.0         197573.2         113169.1         74697.6         49463.3         -14870.8         24885.4           2018:3         165.9         198621.8         114178.4         74885.7         49577.5         -14820.7         25192.2           2018:4         166.8         199659.0         114692.1         7563.6         50526.0         -15076.8         25679.2           2019:2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019:4         169.8         203278.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020:2         171.3         205141	2017:1	161.5	193340.7	110460.5	74512.0	50838.0	-16948.9	25520.9			
2017.3         162.6         194710.8         112800.0         73915.8         49324.8         -15656.7         23783.1           2017.4         163.3         195468.0         113014.4         77344.0         49801.5         -16757.6         25934.3           2018.1         164.0         196342.1         112066.3         76454.1         50362.9         -17160.6         25382.9           2018.2         165.0         197573.2         113169.1         74697.6         49463.3         -14870.8         24885.4           2018.3         165.9         198621.8         11478.4         74885.7         49577.5         -14829.7         25192.2           2018.4         166.8         199659.0         114692.1         75963.6         50526.0         -15076.8         25679.2           2019.2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019.3         169.0         202322.6         115244.5         76742.9         50056.5         -13874.5         25848.2           2019.4         169.8         203278.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020.1         170.6         204267	2017.2	161.9	193817.5	111980 7	71917.4	48893.4	-16008 3	22345.6			
2017.4         163.3         195468.0         113014.4         77344.0         49801.5         -16757.6         25934.3           2018:1         164.0         196342.1         112066.3         76454.1         50362.9         -17160.6         25382.9           2018:2         165.0         197573.2         113169.1         74697.6         49463.3         -14870.8         24885.4           2018:3         165.9         198621.8         114178.4         74885.7         49577.5         -14829.7         25192.2           2018:4         166.8         199659.0         114692.1         7563.6         50526.0         -15076.8         25679.2           2019:2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019:3         169.0         203228.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020:1         170.6         204267.7         115745.3         76371.4         50860.0         -12562.9         26157.1           2020:2         171.3         205141.3         116460.3         76909.2         50335.5         -12296.0         26667.5           2020:3         172.1         206097	2017:3	162.6	194710.8	112800.0	73915.8	49324.8	-156567	23783 1			
2018:1         164.0         196342.1         112066.3         76454.1         50362.9         -17160.6         25382.9           2018:2         165.0         197573.2         113169.1         74697.6         49463.3         -14870.8         24885.4           2018:3         165.9         198621.8         114178.4         74885.7         49577.5         -14829.7         25192.2           2018:4         166.8         199659.0         114692.1         75965.9         49844.0         -15232.1         25611.1           2019:2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019:3         169.0         202322.6         115244.5         77693.3         50010.4         -14262.6         26021.1           2020:1         170.6         204267.7         115745.3         76371.4         50860.0         -12562.9         26157.1           2020:2         171.3         205141.3         116400.3         76909.2         50335.5         -12296.0         26267.5           2020:3         172.1         206007.9         117177.2         76696.4         50315.1         -11690.8         26402.3           2020:4         172.9         20705	2017:4	163.3	195468.0	113014.4	77344.0	49801.5	-16757.6	25934.3			
2018:2         165.0         197573.2         113169.1         74697.6         49463.3         -14870.8         24885.4           2018:3         165.9         198621.8         114178.4         74885.7         49577.5         -14829.7         25192.2           2018:4         166.8         199659.0         114692.1         75965.9         49844.0         -15232.1         25611.1           2019:1         167.5         200499.9         113164.2         77563.6         50526.0         -15076.8         25679.2           2019:2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019:4         169.8         203278.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020:1         170.6         204267.7         115745.3         76371.4         50860.0         -12562.9         26157.5           2020:2         171.3         205141.3         116460.3         76092.2         50335.5         -12296.0         2667.5           2020:3         172.1         206097.9         11717.2         76696.4         50315.1         -11690.8         26402.3           2020:4         172.9         207054.	2018:1	164.0	196342.1	112066.3	76454.1	50362.9	-17160.6	25382.9			
2018.3       165.9       198621.8       114178.4       74885.7       49577.5       -14829.7       25192.2         2018.4       166.8       199659.0       114692.1       75965.9       49844.0       -15232.1       25611.1         2019:1       167.5       200499.9       113164.2       77563.6       50526.0       -15076.8       25679.2         2019:2       168.2       201405.6       114237.9       76033.5       50009.7       -13171.8       25706.7         2019:3       169.0       202322.6       115244.5       76742.9       50056.5       -13874.5       25848.2         2019:4       169.8       203278.5       115857.2       77693.3       50010.4       -14262.6       26021.1         2020:1       170.6       204267.7       115745.3       76371.4       50860.0       -12562.9       26157.1         2020:2       171.3       205141.3       116460.3       76909.2       50335.5       -12296.0       26267.5         2020:3       172.1       206097.9       117177.2       76696.4       50315.1       -11690.8       26402.3         2021:1       173.8       20802.2       118261.9       7715.0       51177.9       -11914.4       26678.3 <t< td=""><td>2018:2</td><td>165.0</td><td>197573.2</td><td>113169.1</td><td>74697.6</td><td>49463.3</td><td>-14870.8</td><td>24885.4</td></t<>	2018:2	165.0	197573.2	113169.1	74697.6	49463.3	-14870.8	24885.4			
2018.4         166.8         199659.0         114692.1         75965.9         49844.0         -15232.1         25611.1           2019.1         167.5         200499.9         113164.2         77563.6         50526.0         -15076.8         25679.2           2019.2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019.3         169.0         202322.6         115244.5         76742.9         50056.5         -13874.5         25848.2           2019.4         169.8         203278.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020.1         170.6         204267.7         115745.3         76371.4         50860.0         -12562.9         26157.1           2020.2         171.3         205141.3         116460.3         76092.2         50335.5         -12296.0         26267.5           2020.4         172.9         207054.0         117900.6         78581.9         50427.6         -13314.2         26543.0           2021.2         175.0         204941.9         118869.6         77136.6         50636.9         -10272.6         26878.4           2021.2         175.8         21049	2018:3	165.9	198621.8	114178.4	74885 7	49577 5	-14829 7	25192.2			
2019:1         167.5         200499.9         113164.2         77563.6         50526.0         -15076.8         25679.2           2019:2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         25706.7           2019:3         169.0         202322.6         115244.5         76742.9         50056.5         -13874.5         25848.2           2019:4         169.8         203278.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020:1         170.6         204267.7         115745.3         76371.4         50860.0         -12562.9         26157.1           2020:2         171.3         205141.3         116460.3         76909.2         50335.5         -12296.0         26267.5           2020:4         172.9         207054.0         117900.6         78581.9         50427.6         -13314.2         26543.0           2021:1         173.8         208020.2         118261.9         77175.0         51177.9         -11914.4         26678.3           2021:2         175.0         209491.9         118869.6         77136.6         50637.7         -9693.3         27019.6           2021:3         175.8         210494	2018:4	166.8	199659.0	114692.1	75965.9	49844.0	-15232.1	25611.1			
2019:2         168.2         201405.6         114237.9         76033.5         50009.7         -13171.8         2570.7           2019:3         169.0         202322.6         115244.5         76742.9         50056.5         -13874.5         25848.2           2019:4         169.8         203278.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020:1         170.6         204267.7         115745.3         76371.4         50860.0         -12562.9         26157.1           2020:2         171.3         205141.3         116460.3         76909.2         50335.5         -12296.0         26267.5           2020:3         172.1         206097.9         117177.2         76696.4         50315.1         -11690.8         26402.3           2020:4         172.9         207054.0         117900.6         78581.9         50427.6         -13314.2         26543.0           2021:2         175.0         209491.9         118869.6         77136.6         50637.7         -9693.3         27019.6           2021:3         175.8         210494.8         119478.4         77092.6         50637.7         -9693.3         27019.6           2021:4         176.7         211528.7	2019.1	167 5	200499 9	113164.2	77563.6	50526.0	-15076.8	25679.2			
2019:3169.0202322.6115244.576742.950056.5-13874.525848.22019:4169.8203278.5115244.576742.950056.5-13874.525848.22020:1170.6204267.7115745.376371.450860.0-12562.926157.12020:2171.3205141.3116460.376909.250355.5-12296.026267.52020:3172.1206097.9117177.276696.450315.1-11690.826402.32020:4172.9207054.0117900.678581.950427.6-13314.226543.02021:1173.8208020.2118261.977175.051177.9-11914.426678.32021:2175.0209491.9118869.677136.650636.9-10272.626878.42021:3175.8210494.8119478.477092.650637.7-9693.327019.62021:4176.7211528.7120089.579002.450617.9-11015.727166.32022:2179.0214291.5121312.977668.750964.1-8408.227547.32022:3179.9215341.6121924.478157.150934.7-7978.827695.32022:4180.7216395.712353.579400.350934.7-7978.827695.3	2019.2	168.2	201405.6	114237.9	76033 5	50009 7	-13171.8	25706.7			
2019:4         169.8         203278.5         115857.2         77693.3         50010.4         -14262.6         26021.1           2020:1         170.6         204267.7         115745.3         76371.4         50860.0         -12562.9         26157.1           2020:2         171.3         205141.3         116460.3         76999.2         50335.5         -12296.0         26267.5           2020:3         172.1         206097.9         117177.2         76696.4         50315.1         -11690.8         26402.3           2021:4         172.9         207054.0         117900.6         78581.9         50427.6         -13314.2         26543.0           2021:2         175.0         209491.9         118869.6         77136.6         50637.7         -9693.3         27019.6           2021:3         175.8         210494.8         119478.4         77092.6         50637.7         -9693.3         27019.6           2021:4         176.7         211528.7         120699.1         77730.4         51486.4         -10050.2         27311.3           2022:2         179.0         214291.5         121312.9         77968.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.6	2019.3	169.0	202322.6	115244 5	76742.9	50056.5	-13874 5	25848.2			
2020:1         170.6         204267.7         115745.3         76371.4         50860.0         -12562.9         26157.1           2020:2         171.3         205141.3         116460.3         76999.2         50335.5         -12296.0         26267.5           2020:3         172.1         206097.9         117177.2         76696.4         50315.1         -11690.8         26402.3           2020:4         172.9         207054.0         117900.6         78581.9         50427.6         -13314.2         26543.0           2021:1         173.8         208020.2         118261.9         77175.0         51177.9         -11914.4         26678.3           2021:2         175.0         209491.9         118869.6         77136.6         50637.7         -9693.3         27019.6           2021:4         176.7         211528.7         120089.5         79002.4         50617.9         -11015.7         27166.3           2022:1         177.5         212555.5         120699.1         77730.4         51486.4         -10050.2         27311.3           2022:2         179.0         214291.5         121312.9         77968.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.	2019:4	169.8	203278.5	115857.2	77693.3	50010.4	-14262.6	26021.1			
2020:2         171.3         205141.3         116460.3         76909.2         50335.5         -12296.0         26267.5           2020:3         172.1         206097.9         117177.2         76696.4         50315.1         -11690.8         26402.3           2020:4         172.9         207054.0         117900.6         78581.9         50427.6         -13314.2         26543.0           2021:1         173.8         208020.2         118261.9         77175.0         51177.9         -11914.4         26678.3           2021:2         175.0         209491.9         118869.6         77136.6         50637.7         -9693.3         27019.6           2021:4         176.7         211528.7         120089.5         79002.4         50617.9         -11015.7         27166.3           2022:1         177.5         212555.5         120699.1         77730.4         51486.4         -10050.2         27311.3           2022:2         179.0         214291.5         121312.9         77968.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.6         121924.4         78157.1         50934.7         -7978.8         27695.3           2022:4         180.7         216395.7	2020.1	170.6	204267 7	115745 3	76371.4	50860.0	-12562.9	26157.1			
2020:3       172.1       206097.9       117177.2       76696.4       50315.1       -11690.8       26402.3         2020:4       172.9       207054.0       117900.6       78581.9       50427.6       -13314.2       26543.0         2021:1       173.8       208020.2       118261.9       77175.0       51177.9       -11914.4       26678.3         2021:2       175.0       209491.9       118869.6       77136.6       50636.9       -10272.6       26878.4         2021:3       175.8       210494.8       119478.4       77092.6       50637.7       -9693.3       27019.6         2021:4       176.7       211528.7       120089.5       79002.4       50617.9       -11015.7       27166.3         2022:1       177.5       212555.5       120699.1       77730.4       51486.4       -10050.2       27311.3         2022:2       179.0       214291.5       121312.9       77968.7       50964.1       -8408.2       27547.3         2022:3       179.9       215341.6       121924.4       78157.1       50934.7       -7978.8       27695.3         2022:4       180.7       216395.7       122335.5       70400.3       50934.7       -7978.8       27695.3	2020.2	171.3	205141.3	116460 3	76909 2	50335 5	-12296.0	26267.5			
2020:4         172.9         207054.0         117900.6         78581.9         50427.6         -13314.2         26543.0           2021:1         173.8         208020.2         118261.9         77175.0         51177.9         -11914.4         26678.3           2021:2         175.0         209491.9         118869.6         77136.6         50637.7         -9693.3         27019.6           2021:4         176.7         211528.7         120089.5         79002.4         50617.9         -11015.7         27166.3           2022:1         177.5         212555.5         120699.1         77730.4         51486.4         -10050.2         27311.3           2022:2         179.0         214291.5         121312.9         77968.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.6         121924.4         78157.1         50934.7         -7978.8         27695.3           2022:4         180.7         216395.7         122355.5         79400.3         50934.7         -7978.8         27695.3	2020:3	172.1	206097.9	117177 2	76696.4	50315.1	-11690.8	26402.3			
2021:1         173.8         208020.2         118261.9         77175.0         51177.9         -11914.4         26678.3           2021:2         175.0         209491.9         118869.6         77136.6         50636.9         -10272.6         26878.4           2021:3         175.8         210494.8         119478.4         77092.6         50637.7         -9693.3         27019.6           2021:4         176.7         211528.7         120089.5         79002.4         50617.9         -11015.7         27166.3           2022:2         179.0         214291.5         121312.9         77786.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.6         121924.4         78157.1         50934.7         -7978.8         27655.3           2022:4         180.7         216395.7         122355.5         79400.3         50923.4         -8619.5         27844.5	2020:4	172.9	207054.0	117900.6	78581.9	50427.6	-13314.2	26543.0			
2021:2         175.0         209491.9         118869.6         77136.6         50636.9         -10272.6         26878.4           2021:3         175.8         210494.8         119478.4         77092.6         50637.7         -9693.3         27019.6           2021:4         176.7         211528.7         120089.5         79002.4         50617.9         -11015.7         27166.3           2022:2         179.0         214291.5         121312.9         77968.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.6         121924.4         78157.1         50934.7         -7978.8         27695.3           2022:4         180.7         216395.7         12235.5         79400.3         50923.4         -8619.5         27844.5	2021.1	173.8	208020 2	118261.9	77175.0	51177 9	-11914 4	26678 3			
2021:3         175.8         210494.8         119478.4         77092.6         50637.7         -9693.3         27019.6           2021:4         176.7         211528.7         120089.5         79002.4         50617.9         -11015.7         27166.3           2022:1         177.5         212555.5         120699.1         77730.4         51486.4         -10050.2         27311.3           2022:2         179.0         214291.5         121312.9         77968.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.6         121924.4         78157.1         50934.7         -7978.8         27695.3           2022:4         180.7         216395.7         122355.5         79400.3         50923.4         -8619.5         27844.5	2021:2	175.0	209491.9	118869.6	77136.6	50636.9	-10272.6	26878.4			
20213         175.5         2101516         1151011         1101011 <th1101011< th=""> <th1101011< th=""> <th11010< td=""><td>2021:3</td><td>175.8</td><td>210494.8</td><td>119478 4</td><td>77092.6</td><td>50637.7</td><td>-9693 3</td><td>27019.6</td></th11010<></th1101011<></th1101011<>	2021:3	175.8	210494.8	119478 4	77092.6	50637.7	-9693 3	27019.6			
2022:1         177.5         212555.5         120699.1         77730.4         51486.4         -10050.2         27311.3           2022:2         179.0         214291.5         121312.9         77968.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.6         121924.4         78157.1         50934.7         -7978.8         27695.3           2022:4         180.7         216395.7         122335.5         79400.3         50923.4         -8619.5         27844.5	2021:4	176.7	211528.7	120089.5	79002.4	50617.9	-11015.7	27166.3			
2022:2         179.0         214291.5         121312.9         77968.7         50964.1         -8408.2         27547.3           2022:3         179.9         215341.6         121924.4         78157.1         50934.7         -7978.8         27695.3           2022:4         180.7         216395.7         12235.5         79400.3         50923.4         -8619.5         27844.5	2022.1	177 5	212555 5	120699 1	77730 4	51486.4	-10050.2	27311.3			
2022:3         179.9         215341.6         121924.4         78157.1         50934.7         -7978.8         27695.3           2022:4         180.7         216395.7         12235.5         79400.3         50923.4         -8619.5         27844.5	2022.2	179.0	214291 5	121312.9	77968 7	50964 1	-8408 2	27547 3			
2022:4 180.7 216395.7 122335.5 79400.3 50923.4 -8619.5 27844.5	2022:3	179.9	215341.6	121912.9	78157.1	50934 7	-7978.8	27695 3			
	2022.5	180.7	216395 7	121524.4	79400 3	50923 4	-8619 5	27844 5			

 

 022:4
 180.7
 210395.7
 122555.5
 79400.5
 50925.4
 -8619.5

 GDP at factor cost. Expenditure measure; seasonally adjusted
 Consumers expenditure less expenditure on durables and housing
 Private gross domestic capital formation plus household expenditure on durables and clothing plus private sector stock building
 General government current and capital expenditure including stock building

 Exports of goods and services less imports of goods and services
 Figure 100.5
 122555.5
 19400.5

 

	PSBR/GDP % <sup>1</sup>	GDP <sup>1</sup>	PSBR	Debt Interest	Current
		(£bn)	(£bn)	(£bn)	Account
			<b>Financial Year</b>		(£ bn)
016	2.3	1977.2	45.1	78.9	-90.9
017	2.2	2042.9	45.1	79.7	-66.3
018	1.6	2135.3	35.2	81.6	-60.1
019	1.1	2219.2	24.9	86.4	-51.6
020	0.4	2303.3	9.1	93.1	-41.2
021	-0.3	2403.6	-7.6	96.3	-29.1
017:1	-2.9	504.2	-14.6	20.0	-15.7
017:2	5.1	498.9	25.3	20.0	-20.5
017:3	1.7	505.8	8.6	19.7	-15.3
017:4	3.2	515.7	16.5	19.9	-14.8
018:1	-1.0	522.5	-5.4	20.0	-15.0
018:2	1.2	525.7	6.3	20.1	-18.7
018:3	1.1	529.7	5.7	20.3	-14.0
018:4	2.9	536.2	15.4	20.4	-12.4
019:1	1.5	543.6	7.9	20.7	-11.8
019:2	1.2	547.3	6.8	20.8	-16.3
019:3	1.1	550.6	6.3	21.1	-12.5
019:4	0.9	556.5	5.2	22.0	-11.0
020:1	1.2	564.7	6.6	22.5	-7.8
020:2	0.3	568.5	1.9	22.6	-15.0
020:3	0.2	571.5	0.9	22.6	-9.0
020:4	0.2	577.4	1.4	23.9	-9.4
021:1	0.8	585.9	4.8	24.0	-6.5
021:2	-0.1	591.8	-0.8	23.9	-11.6
021:3	-0.3	594.5	-1.9	23.8	-5.6
021:4	-0.5	604.0	-2.9	24.2	-5.4
022:1	-0.3	613.3	-2.0	24.4	-3.3
022:2	0.8	621.5	4.9	24.7	-8.6
022:3	-0.2	626.7	-1.5	24.4	-2.6
022:4	-1.2	635.4	-7.5	24.6	-1.3

GDP at market prices (Financial Year)



#### US

The economy continued to grow at annual rates between 2 and 3%. Quarter-to-quarter real GDP rose 0.55% in Q1, after 0.6% in Q4 2017. Private consumption rose 0.25% compared to 1.0% in Q4. Government spending growth fell a little, to 0.3% from 0.75% in Q4. Gross private domestic investment continued to rise quite strongly: 1.8% after 1.3% in Q4. Net trade contributed 0.02 percentage points to GDP growth in Q4 with a bigger deceleration in imports (0.7% down from 3.5% in Q4) than in exports (1.05% in Q4, after 1.6% in Q4). The economic momentum is picking up in Q2 according to the recent data and survey. Month-to-month industrial production rose 0.7% in April for the  $3^{rd}$  consecutive month. The consumer confidence index was a solid 128 in May, rising from 125.6 in April. This remains above its long-term average of 100.

The labour market remained strong in line with economic growth. In May total nonfarm payroll employment increased by 223,000 (compared to 159,000 in April) and unemployment decreased to 3.8% (down from 3.9% in April). Market tightening pushed wage growth up a little. Average hourly earnings rose by 2.7% in May. But as in the UK this hardly represents a really tight labour market. As here, there must be a reservoir of supply not yet used up.

The annual inflation rate was 2.1% in both March and April, up from 1.8% in January and February. The Federal Reserves considered this as showing inflation is on target after years of lagging behind. Based on this information, as well as other data, the Fed left its benchmark interest rate unchanged, remaining at 1.5-1.75% range.

#### Japan

The Japanese economy contracted for the first time in 9 quarters. Real GDP declined 0.15% in Q1, after an expansion of 0.15% in Q4 2017. Domestic demand shrank with a further drop in investment (-1.2% in Q1, following - 0.1% in Q4) and weak private consumption (0% after 1.0% in Q4). This contraction was partly offset by net trade. It contributed 0.075 percentage points to quarterly GDP growth in Q1 with a deceleration in imports (1.2% from 12.9% in Q4) dominating that of exports (2.6% from 9.6% in Q4). This fall was a one off, and the economic outlook for Q2 is better with an improving consumer confidence index (43.8 in May compared to 43.6 in April) and a further expansion in manufacturing, though at a slow pace (52.8 in May compared to 53.8 in April).

At the April meeting the Bank of Japan maintained its short-term interest rate target at -0.1% and the 10-year bond yield target just above 0%. Since its previous meeting the





Bank removed the time frame for achieving its 2% target inflation rate as inflation has been continuously well below this target. Although it insisted that monetary policy remained accommodative, it somewhat scaled down on its total asset purchases to 521.416 trillion yen, which is still equivalent to a massive 96% of GDP (this compares for example with 25% of GDP for the Bank of England). It may be taking a first step towards ending its qualitative and quantitative easing programme.

#### Germany

The growth rate fell a little in Q1. Real GDP expanded 0.3% after 0.6% in Q4 2017. A positive contribution to GDP growth came from strong domestic demand and a negative contribution came from net trade. Private consumption rose 0.4% compared to 0.1% in Q4 and investment accelerated to 1.7%, up from 0.3% in Q4. Net trade contributed -0.1% to GDP as both exports (-1.0% in Q1, after 2.6% in Q4) and imports (-1.1% after 1.8% in Q4) contracted. The second quarter's economic growth continues to grow but at a slower rate. In May, the composite PMI fell back a little, to 53.1, down from 54.6 in April, and consumer confidence weakened slightly to 10.8 from 10.9 in April (well above the average of 6.05).

The labour market remained strong. In April, unemployment reached its lowest rate since reunification at 3.4%.



<sup>1</sup>The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation of the real exchange rate.



Real GDP Growth (% p.a.)	0.7	0.2	1.1	1.4	1.8	1.9
Inflation (% p.a.)	0.9	0.5	0.0	0.4	1.0	1.5
Real Short Int. Rate	-0.2	0.1	-0.5	-1.5	-1.6	-1.8
Nominal Short Int. Rate	0.3	0.1	-0.1	-0.2	-0.3	-0.3
Real Long Int. Rate	1.1	-0.5	-0.8	-1.4	-0.4	-0.5
Nominal Long Int. Rate	1.9	0.5	0.6	0.4	0.9	1.0
Real Ex. Rate $(2000=100)^{1}$	100.7	100.8	96.2	96.0	95.2	95.0
Nominal Ex. Rate <sup>2</sup>	0.75	0.76	0.90	0.95	0.83	0.82
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<sup>1</sup>The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation of the real exchange rate.

#### France

Economic growth slowed a little as in Germany. Real GDP rose 0.3% in Q1 after 0.7% in Q4 2017. Domestic demand was weaker: private consumption rose at the same rate as in Q4 (+0.2%) but investment growth fell to 0.6% after 1.1% in Q4. Overall domestic demand contributed 0.3 percentage points to GDP growth, compared to 0.5% in the previous quarter. Net trade made no contribution: exports fell -0.1% after 2.5% in Q4 and imports were flat after rising 0.4% in Q4.

Despite continuous economic growth, the labour market remained weak. The unemployment rate increased to 8.9% in Q1, up from 8.6% in Q4.

#### Italy

Italy's weak economic recovery continued in Q1. Real GDP expanded 0.35% after 0.4% in Q4 2017. There was strong growth in inventories (+0.7 percentage points to GDP after -0.4% in Q4) and some rebound in private consumption (0.4% in Q1 after 0% in Q4). A big negative contribution however came from gross fixed investment which fell 1.4%, losing almost all its 1.5% Q4 rise. In addition, net trade subtracted 0.4 percentage points from the Q1 growth, as exports declined by 2.1% and imports by 0.9%. The latest data suggests similarly weak growth for Q2. The Manufacturing sector PMI was 52.7 during May, 53.5 in April. The business confidence index was 104.7, slightly down from 105.0 in April. This index remains above its average of 102.23 for the period from 1991-2018. Consumer confidence index fell to 113.7 in May from



116.9 in April (compared to the average index of 104.06 between 1982 and 2018).

#### Euro-zone monetary policy

The annual Harmonised Index of Consumer Prices (HICP) inflation was 1.3% in March, up from 1.1% in February. The ECB's monetary policy remained accommodative as inflation is still far from its 2% official target. Broad money growth was 4.2% in February (down from 4.6% in January) which signals some weakness in money and credit growth. Narrow money growth was 8.4% in February in line with strong consumer transactions demand. At its April meeting the ECB kept the key interest rates unchanged and continued to expect them to remain at the current levels for a long period. The ECB confirmed that the net asset purchases (30 billion euro per month) would run until the end of September 2018, but they might continue if the ECB sees its need in sustaining the inflation path toward its target. Thus the ECB remains set on indefinitely loose monetary policy. While the EU's fiscal policy, dominated by Germany and its demands on other countries being supported in the euro zone, has been steadily tightened, monetary policy has been, to German chagrin, steadily loosened.



Italy								
	2013	2014	2015	2016	2017	2018		
Real GDP Growth (% p.a.)	-1.7	-0.3	0.8	1.1	1.5	1.4		
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	-1.4		
Nominal Short Int. Rate	0.3	0.1	-0.1	-0.2	-0.3	-0.3		
Real Long Int. Rate	1.2	-0.5	-0.7	-1.3	1.2	1.0		
Nominal Long Int. Rate	Nominal Long Int. Rate 1.9 0.5 0.6 0.4 2.3 2.1							
Real Ex. Rate $(2000=100)^{1}$	106.9	107.5	102.1	102.0	101.1	101.0		
Nominal Ex. Rate <sup>2</sup>	0.75	0.76	0.90	0.95	0.83	0.82		
<sup>1</sup> The real exchange rate is the	e domest	ic price l	level rel	ative to	the for	eign		
price level converted into domestic currency. A rise in the index implies								
an appreciation of the real ex	change i	ate.						



## 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	2.8		
U.K.	2.2	2.9	2.2	2.3	1.9	1.9		
Japan	1.4	-0.1	0.5	1.0	1.4	1.3		
Germany	0.3	1.6	1.7	1.8	2.3	2.3		
France	0.7	0.2	1.1	1.4	1.8	1.9		
Italy	-1.7	-0.3	0.8	1.1	1.5	1.4		

Real Shor	Real Short-Term Interest Rates										
	2013	2014	2015	2016	2017	2018					
U.S.A.	-1.5	-0.1	-1.1	-1.1	-1.1	-0.5					
U.K.	-0.8	-2.2	-0.5	-1.5	-2.2	-1.9					
Japan	-2.5	-0.6	0.0	-0.7	-0.8	-0.9					
Germany	-0.6	-0.2	-0.6	-2.0	-2.0	-2.0					
France	-0.2	0.1	-0.5	-1.5	-1.6	-1.8					
Italy	0.1	0.0	-0.3	-1.6	-1.4	-1.4					

Real Long-Term Interest Rates								
	2013	2014	2015	2016	2017	2018		
U.S.A.	1.6	0.7	0.3	0.3	0.3	0.5		
U.K.	-0.8	-0.7	-1.0	-1.5	-1.7	-0.9		
Japan	-0.8	-1.1	-1.3	-1.2	-0.8	-0.9		
Germany	0.8	-0.8	-1.0	-1.6	-0.8	-1.0		
France	1.1	-0.5	-0.8	-1.4	-0.4	-0.5		
Italy	1.2	-0.5	-0.7	-1.3	1.2	1.0		

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

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

Growth Of Consumer Prices							
	2013	2014	2015	2016	2017	2018	
U.S.A.	1.5	1.6	0.1	1.3	2.1	2.5	
U.K.	2.3	1.7	0.2	1.2	2.6	2.3	
Japan	0.4	2.7	0.8	0.2	0.5	1.0	
Germany	1.5	0.9	0.3	0.5	1.7	1.7	
France	0.9	0.5	0.0	0.4	1.0	1.5	
Italy	1.2	0.2	0.1	0.2	1.3	1.1	

Nominal Short-Term Interest Rates								
	2013	2014	2015	2016	2017	2018		
U.S.A.	0.1	0.0	0.2	1.0	1.4	2.0		
U.K.	0.6	0.6	0.6	0.4	0.4	0.4		
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	-0.3		
Italy	0.3	0.1	-0.1	-0.2	-0.3	-0.3		

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	1.4	
Japan	0.7	0.3	0.3	0.0	0.1	0.1	
Germany	1.9	0.5	0.6	0.4	0.5	0.7	
France	1.9	0.5	0.6	0.4	0.9	1.0	
Italy	1.9	0.5	0.6	0.4	2.3	2.1	

Nominal Exchange Rate (Number of Units of Local Currency To \$1)						
	2013	2014	2015	2016	2017	2018
$U.S.A.^1$	85.61	89.04	103.08	101.91	102.19	100.58
U.K.	1.55	1.65	1.53	1.35	1.28	1.38
Japan	98.20	120.60	120.50	118.40	112.70	109.80
Eurozone	0.75	0.76	0.90	0.95	0.83	0.82

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

\* Forecasts based on the Liverpool World Model



### **EMERGING MARKETS**

Anupam Rastogi

#### India

India registered GDP growth of 7.7% in January–March, up from 7.2% in the preceding quarter. India is witnessing a cyclical recovery, led by both investment and consumption. However, factors like high oil prices as well as tighter financial conditions are expected to water down growth rates slightly. Credit growth is picking up. Consumption is not doing badly.

India's annual retail and wholesale inflation accelerated in April, mainly due to higher fuel and food prices. Consumer price inflation stood at 4.58% in April, overturning a three month slide from its peak. The Monetary Policy Committee meeting is scheduled for June 6. The Reserve Bank of India is likely to adopt a hawkish commentary in June. However, a normal monsoon and moderate food inflation is likely to act as a counter. With crude oil prices coming down, the central bank is unlikely to change interest rates in the June meeting. The central bank has held benchmark interest rates at 6% since June 2017, with a neutral stance, as inflation remained moderate and the growth recovery remained tentative.

India's exports rose by 5.17% year-on-year to USD 25.9 billion in April, on the back of good show by sectors like engineering, pharmaceutical and chemicals. Imports during the month were valued at USD 39.6 billion, up 4.6% over April 2017. The trade deficit was marginally higher at USD 13.7 billion during April 2018 compared to USD 13.24 billion in April 2017. India's export promotion programmes have come under the global trade watchdog's scanner and would need to be stopped, if found prohibited as per World Trade Organisation (WTO) norms.

The Indian rupee has weakened by 6.44% so far in 2018. Given the forex reserves, the RBI will not allow the rupee to depreciate further. We will continue to see high volatility, but not a much weaker rupee.

As Walmart takes on Amazon and other local rivals in ecommerce space, Indian consumers will benefit from competition that drives down prices in the relentless pursuit of efficiency. Walmart has bet big on Indian e-commerce since its \$16 billion purchase of a 77% stake in Flipkart a home grown e-commerce company. While the jury is still out on the acquisition as an investment, one thing is clear: it's good news for India.

It seems that Walmart's belief in the Indian market's potential is well-founded. Only about 15% of Indians shop online today, according to the research firm, Gartner. But rising incomes, a youthful population, and burgeoning smartphone sales are expected to power e-commerce





**China: SSE Composite Index** 



growth. The market-research firm, Euromonitor, estimates that online sales will increase by about 28% per year for the next five years.

	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	4.5	4.6	4.2
Current A/c(US\$ bill.)	-24.0	-26.0	-36.0	-44.0	-46.0
Rs./\$(nom.)	68.2	65.0	65.5	65.5	66.5

#### China

China's economic expansion for this year and 2019 is on track. We expect China's gross domestic product (GDP) to rise 6.5% year on year in 2018 and 6% in 2019. External demand remained resilient and continues to be robust. Consumption and property investment have offset slower infrastructure investment. The manufacturing purchasing managers index came at 51.9 in May compared to 51.4 in April. This suggests that factory activity grew more than April. May Retail sales in China climbed 9.4% in April from a year earlier, slowing from a 10.1% year-over-year increase in March.

China's inflation will remain subdued around 1.5% growth in the CPI and 2.4% growth in the PPI.

China posted a trade surplus of \$28.78 billion in April, reversing a deficit of \$4.98 billion in the previous month. Exports jumped 12.9% in April from a year earlier, after

falling 2.7% the previous month. Imports surged 21.5% from a year earlier, compared with a 14.4\% increase in March.

China's imports and exports are going to remain steady. However, the current account surplus will see a lesser share in GDP, dropping from 1.4% last year to 0.8% in 2018, and 0.5% in 2019. While the proportion of the trade surplus will be very little, cash inflows through the capital account are on the rise, as China has moved swiftly to open its financial sector, including bonds and equities.

China's yuan stumbled to its weakest in more than four months in the last week of May, falling past a psychologically important level after the central bank's softer fixing and broad US dollar strength. Offshore oneyear non-deliverable forwards contracts (NDFs), considered the best available proxy for forward-looking market expectations of the yuan's value, traded at 6.5225

The trade tension between China and the US may provide the opportunities to India. China has an increasingly widening trade gap with India. It is easier for India to export agriculture products to China than manufacturing products. India, like China, is a non-GM producer of fruits and vegetables. India's trade deficit with China crossed \$50 billion last year in a total trade of \$71.5 billion. Besides this, China would be looking for long term software partners to replace the US hegemony of technology companies. India's software industry is capable of graduating to a higher level. It can take up leadership roles in joint projects that it can never do with US or European companies.

China appears to be winning its trade fight with the U.S. Though it is still early days, China has thus far escaped the bulk of threatened U.S. tariffs while giving up almost nothing of substance. President Donald Trump initially seemed to have more stomach for confrontation with China than his predecessors. China has shrewdly exploited his weak points: his hopes for a breakthrough with North Korea, a Chinese client; a low threshold for political pain, especially in Republican farm states; and a readiness to play China's game of using legal proceedings as a commercial bargaining chip.

The US plans to impose tariffs on \$50 billion of Chinese imports and curb investment in sensitive technology, ratcheting up pressure on Beijing days before the next round of trade negotiations. The final list of targeted imports will be released by June 15 and the tariffs will be imposed "shortly thereafter."

The meeting between U.S. President Donald Trump and North Korean leader Kim Jong-Un is on a see-saw. The U.S. is seeking assurances that North Korea will dismantle its nuclear arms in a verifiable manner, while Pyongyang is seeking U.S. promises to keep the Kim regime intact, postdenuclearization.



1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018

	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	1.5	2.0	2.2
Trade Balance(US\$ bill.)	510	400	380	350	300
Rmb/\$(nom.)	6.7	6.6	6.3	6.4	6.4

#### South Korea

The South Korean economy is being battered by political and trade uncertainties. GDP growth outlook for 2018 is under pressure. It is likely that the economy would be able to maintain 3% growth rate in 2018 and 2.8% in 2019. Confidence among South Korean consumers improved in May but it remains fragile.

South Korea's consumer price inflation stayed below 2% for the seventh consecutive month amid stable prices for services and oil products that offset a fast increase in farm goods prices. Consumer prices gained 1.6% in April from a year earlier, hovering below 2% since October.

Exports, which accounts for about half of the export-driven economy, shrank 1.5% from a year earlier to USD 50 billion in April. Imports gained 14.5% over the year to USD 43.4 billion in April, sending the trade surplus to USD 6.6 billion. The trade balance stayed in black for 75 months in a row.

The South Korean won is very volatile as it tracks political developments in the Korean peninsula. It plummeted as President Donald Trump cancelled the U.S.-North Korea summit scheduled to be held in Singapore on June 12.

	16	17	18	19	20
GDP (%p.a.)	2.8	3.2	3.0	2.8	2.6
Inflation (%p.a.)	1.0	1.9	1.7	2.0	1.9
Current A/c(US\$ bill.)	88.0	88.0	86.0	80.0	78.0
Won/\$(nom.)	1160	1100	1050	1040	1050



#### Taiwan

Taiwan's economy is expected to grow by 2.5% in 2018, as trade sanctions on China are getting postponed. Internal demand, including both consumer spending and investment, is helping the economy to maintain its growth.

Annual Consumer Price Index (CPI) growth will be around 1.5% after taking into account the escalating oil prices. Inflation moved up in April from the previous month partly due to higher prices in garments, fruit and fuels. The CPI rose 1.98% in April from a year earlier, up from March's 1.58% rise. Taiwan's new central bank governor Yang Chin-long, has announced that the acceptable range for the CPI is between zero and 2%.

Taiwan's export slowed to 3.02% in the first quarter of 2018, compared to the fourth-quarter growth of 3.28%, which was the most robust since the start of 2015. The slow down in GDP growth reflects these concerns emanating from world trade.

	16	17	18	19	20
GDP (%p.a.)	1.4	2.6	2.5	2.5	2.3
Inflation (%p.a.)	1.0	0.6	1.5	1.3	1.2
Current A/c(US\$ bill.)	64.0	68.0	68.0	70.0	71.0
NT\$/\$(nom.)	32.5	32.0	29.6	30.0	30.5

#### Brazil

In 2017, the Brazilian economy grew by 1%, ending a bitter two-year recessive cycle. However, recovery is weak and political uncertainty is the main cause of it. We expect economic growth in 2018 to be just 2.3% and recovering to 2.5% in 2019. Brazil's debt-to-GDP ratio is likely to remain stable at 55% for 2018. But, 2019 will see the ratio increasing. Under pressure, the government has announced tax cuts on diesel fuel and will freeze the price for 60 days and let the fuel price change once every month afterward. The government will compensate state-controlled oil company Petróleo Brasileiro SA, or Petrobras, and its private-sector competitors. This will increase debt-to-GDP ratio by 150 basis points in 2019.

Inflation has been below the central bank's 4.5% target for more than a year. The 12-month inflation rate reached

2.76% in April, down from its most recent peak of 10.7% in January 2016. Inflation will continue to be less than the target of 4.5% in 2018 and is unlikely to rise. Brazil's central bank kept the benchmark Selic rate at 6.5% and did not oblige the market which was expecting a 25-basis-point cut. The bank feels that the current rate is consistent with inflation target.

Brazil's real jumped more than 1% after central bank minutes reinforced investors' beliefs that the country's monetary easing cycle was over. Brazil's currency has been weakening together with those of other emerging markets as global investors increasingly avoid riskier bets in favour



of U.S. investments, which are considered safer and whose yields are rising.

Investors are also concerned about the outcome of October's election, as early polls have raised the odds that an anti-market leader could take Brazil's helm in 2019. The political uncertainty is curbing domestic investment and weakening both, activity and employment.

Brazil's New Finance Minister Eduardo Guardia is hoping for more market-friendly legislation, but momentum has waned and there is no hope before the presidential elections due in October.

	16	17	18	19	20
GDP (%p.a.)	-3.5	1.0	2.3	2.5	3.0
Inflation (%p.a.)	6.3	3.0	3.8	4.2	4.2
Current A/c(US\$ bill.)	-28.0	-4.0	-5.2	-8.0	-8.5
Real/\$(nom.)	3.5	3.2	3.3	3.4	3.4

#### **Other Emerging Markets**

Hong Kong: FT-Actuaries











Indonesia: Jakarta Composite



**Thailand: Composite Index** 



Philippines: Manila Composite





## **COMMODITY MARKETS**



1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018

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



1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018





160 140 120 100 80 60 40 20 0 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018

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

#### **Gold Price (in Dollars)**



1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018

## HOW THE CIVIL SERVICE HAS MISLED US ON THE COSTS OF BREXIT AND THE CUSTOMS UNION

#### Patrick Minford

A t the heart of the political row over the 'New Customs Partnership' and its rival 'Maximum (customs) Facilitation' lies the actual costs of customs arrangements. Are these prohibitive as the latest Civil Service evaluation of Brexit asserts or are they in modern practice essentially trivial because of the advances of computer technology, associated administrative practices and the new WTO rules on discrimination? This is what we need to know.

Let us first take a look at what the Civil Service assumed in its latest report (Civil Service, 2018), which was at first leaked to Buzzfeed and later released to the public by the Committee for Exiting the EU of the House of Commons. The full report is still not publicly available: what we have is a set of some two dozen Powerpoint slides describing the Report, its assumptions and its findings in outline. Needless to say, it would desirable to see the whole thing, including its technical appendices, so that we can examine it with full care. As it is, some detective work is necessary to work out how it obtained its results; it is really not in the public interest that we should have to do such detection- we should have the study in full. If in what follows we have some details wrong, then it is the fault of Civil Service officials for not properly revealing their methods.

Then let us compare what we infer it assumed with what others have suggested these costs amount to.

#### The Civil Service Report on Brexit

There is an intellectual history preceding this latest Civil Service report released at the beginning of 2018.

The Treasury (and a number of sympathetic other organisations including the LSE trade group, NIESR, OECD and the IMF) used data correlations between trade agreements, trade, FDI and productivity (HM Treasury, 2016) instead of using a Computable General Equilibrium model whose behaviour is based on causal economic theory. These correlations were defended on the grounds that they reflected the role of 'gravity' (i.e. closeness and size affect trade); but plainly correlations do not imply causation and a CGE approach must be used to investigate the causal effects of Brexit. Such a model may have more or less 'gravity effects' in it; but it must be a causal and thus a CGE model. Such a model writes down the decision behaviour of people and firms with respect to output, trade and inputs, based on economic theory; it then computes how this behaviour interacts to give the results of changes in policy such as Brexit.

In its recent work the Civil Service have used a 'large CGE model'. It is widely thought (and has not been denied by Whitehall) that this is the 'GTAP' (Global Trade Analysis Project) model, developed over the last two decades at Purdue University, Indiana, as a part of an international trade project, designed to estimate the results of international trade agreements of all types, including TTP and TTIP. It is widely used by governments and international institutions, which contribute substantial financial support to the project.

By using this CGE model the Civil Service have abandoned the methods of the Treasury and its allies. They have implicitly therefore conceded that the criticisms of those methods are correct. However, intriguingly the Civil Service's new Report has come up with estimates of the effects of different Brexit scenarios that are not hugely different from those of the Treasury in 2016. Thus the Report estimates the effects of the EEA, FTA and WTO scenarios as reducing UK GDP by 2030 respectively by 1.6%, 4.8% and 7.7%. This compares with the Treasury (2016)'s projected reductions on the same three scenarios respectively of 3.8%, 6.2% and 7.5%.

What is intriguing about these latest Civil Service (CS) estimates using GTAP is that they give so little weight to the effects of liberalising FTAs with the rest of the World; thus they include a small positive contribution from an FTA with the US (0.2% of GDP) and a smaller contribution from some deregulation (0.1% of GDP) outside the EEA. They remark that a further 0.1-0.4% of GDP gains may be had from other FTAs with other (unspecified) countries. However, for example, a study (CIE, 2017) using the same GTAP model, of the Australian trade liberalisation programme in the thirty years since 1986, came up with a gain to GDP of no less than 5.4%.

It also emerges from the CS Report that the losses from Brexit arise mainly from new trade barriers expected to spring up on UK-EU trade. Migration effects are assumed to contribute losses of about 1.2% of GDP under the WTO scenario, and about 0.2% under the FTA scenario. Some modest gain is projected from deregulation- about 0.1% of GDP in the FTA and WTO cases. Our focus in this paper is not on migration and deregulation, but on the trade effects, and particularly those related to a customs union.

Among the trade effects, the losses all come from these new trade barriers on UK-EU trade. In the following Table we show how they are estimated:



	EEA	FTA	WTO
Tariffs-%	-	-	4.5
Effect on GDP- %	-	-	-1.0
NTBs (access)-%*	0.5	4.1	5.0
Effect on GDP-%	-0.1	-0.9	-1.1
NTBs (regulation)- %*	1.8	12.1	15.3
Effect on GDP-%	-0.4	-2.7	-3.4
Total effect of trade EU	-UK		
Total tariff equivalent-%	8.1	22.0	30.6
Other effects on GDP-%			
US FTA	+0.2	+0.2	+0.2
Deregulation	-	+0.1	+0.1
Migration controls	-	-0.2	-1.2
All effects on GDP	-1.6	-4.8	-7.7

Table: New UK-EU trade barriers under Brexitscenarios according to CS Report

\*tariff- equivalent % (to obtain this from the % effects on GDP, we used the equivalent GTAP simulations reported by Ciuriak et al, 2017; this work finds that a UK-EU reciprocal tariffs equivalent of 4.5% produces approximately a 1% of GDP loss to the UK). NTB=Non-Tariff Barrier

These numbers are truly on a massive scale. To illustrate just how massive, the estimated size of EU trade barriers, including NTBs, against the Rest of the world is 20% on both food and manufactures (Minford et al, 2015, chapter 4, and see for similar estimates of the implied NTB, Berden et al, 2009). Yet apparently the UK, which starts from absolute regulative harmony with the EU, would face under WTO rules trade barriers of no less than 30%, one and half times the size of those the EU has against the US and Japan! Furthermore, even if we have an FTA with the EU, we will face trade barriers slightly higher than those the EU levies against the rest of the world with which it has no FTA at all! It seems we would have an FTA with the EU in order to go to war on trade. And if we have none, it is total war.

How credible are these estimates of NTBs and customs costs from Brexit?

Can we believe these massive estimates?

Let us begin with pure border costs of customs procedures. Under WTO rules (WTO, 2018c) these are mandated to be 'seamless' and 'computerised', so that traffic goes through borders unchecked to the maximum possible; this has been motivated by the need to keep the costs of supply chains to a minimum since these are so integral to modern trade. This WTO drive for seamlessness appears to have been highly successful among developed countries: the median performer among these let 98% of customs traffic through unchecked and cleared the other 2% in one day (World Bank, 2016). For the EU-Swiss border Ambühl (2018) reports that the estimated customs cost is 0.1% of traffic value. On the US-Canada border there is no interruption of the traffic flow, with barcode recognition of transit traffic; an estimate of the border cost back in 2005, 13 years ago, was only 1.9% of value (OECD, 2005). Ciuriak et al (2017) assume based on some historical cost rates 2.3%; but these are high compared with the tiny-sized estimates of modern practice, to which we should give the entire weight, given the fast progress of modern computer and surveillance technology..

To these pure border costs we should add the costs of Rules of Origin border costs, whereby traffic must be checked for having content sufficient to define it as being covered by the FTA and not being 'foreign' and hence liable to the MFN tariff. Here again the WTO rules imply that any consignment must be categorised before reaching port, so that it does not delay arrival. Accordingly we find recent estimates rate this as 'trivial' (e.g. Lee, 2017, on US-Canadian trade); Ciuriak et al (2017) estimate it at 1.8% based again on 'recent evidence', thus in fact not really up to date.

If we take Ciuriak et al (2017) as the top of our range for the sum of customs and RoO border costs, then we have a range for all these customs costs in total of 0.1-4%, with the most recent estimates suggesting essentially zero costs. Against this the CS Report assumes 5.8%.

Then we come to the various NTBs the CS Report assumes will spring up upon Brexit. These come into two categories: 'on immediate access' and 'on regulatory divergence'. Under the WTO scenario these reach respectively 5% and 15.3%, a total of 20.3%. But even under the FTA scenario they reach a total of 16.2% and under the 'close' EEA scenario they get as high as 2.3%.

Here we encounter a fundamental problem that appears not to have been taken seriously by the CS Report. All these NTBs are illegal under WTO Rules which proscribe any form of discrimination on standards between home and foreign products or between foreign products of different countries (see e.g. WTO, 2018a). Thus for example if we have a standard that UK producers must meet on grounds also to each exporter to the UK in an identical way; one cannot apply different standards. Nor can one apply different standards to the UK than one can to say the USA. These rules apply as much to services (under the GATS, WTO, 2018b) as they do to goods.

Then consider how UK producers will behave when selling to the EU market: they will adhere to its required standards. They will have done so up to Brexit and plainly they will continue to do so afterwards as it is plainly in their commercial interest. Thus any 'regulatory divergence' will simply not apply to their behaviour; they will not diverge on these export products. It is certainly possible that they might diverge on products for other, non-EU markets. However, they will be careful not to do so for EU markets, even to the extent of 'behind the border' standards. Thus for example suppose they must test EU products in a certain way; then they will do so. They might not do so for other products destined for other markets; but they would not risk the EU market for not following such standards.

Up to Brexit all such firms will be standard-compatible with the EU; and they will not change afterwards. Any change in EU treatment of their products after Brexit would therefore be illegal discrimination under WTO law. This is true whether under 'immediate access' or under 'regulatory divergence (i.e. of quite other products)'.

For the CS Report, a government-authored document, to assert that a foreign power will behave illegally raises difficult issues. Yes, it is possible the EU would behave illegally and then one has to ask what HMG would do in response. However, the usual assumption is made that all friendly countries behave in accordance with international law. Surely if challenged, M. Barnier would vigorously deny that the EU would breach such law? Indeed the whole EU construct is erected on obedience to international Treaty law so that violation would set dangerous precedents for the authority of the EU Commission. It needs to be emphasised that after Brexit the only source of international law over commercial policy of the UK and the EU will be the WTO.

Some with long memories will object: did not the French decree that all VCRs should be cleared through the remote inland customs post of Poitiers in order to stop the Japanese imports they disliked in 1982? Indeed they did, but rather like the derring-do of the Wild West such actions today would be jumped on from a great height by the European Court of Justice.

Others will remind us of the way that some countries protect their industries by decreeing standards that cannot possibly be met by other countries and only happen to be met by their own producers. However the WTO rules have become quite explicit in recent years. In order for the EU to would have to change not merely domestic producer standards but also those applicable to all other producers. This would be highly expensive to domestic producers and would meet strong opposition from foreign producers. It could also be challenged in the WTO as a transparently discriminatory protectionist manoeuvre aimed at the UK.

In short these NTBs, being illegal, should not really be assumed at all. What seems to have happened in making these assumptions is that Civil Service departments have consulted various trade associations and asked them about their fears of what might happen upon Brexit. Of course we know that the CBI and most trade associations are opposed to Brexit because it aims in principle to remove the protectionism that many UK producers enjoy from the EU. Therefore it is not surprising that when encouraged to share their fears with HMG departments they have eagerly proffered their fears of worst case scenarios, regardless of their legality, a matter on which indeed they might not be well informed, having not hitherto been governed by WTO rules.

However at the level of analysis at which the CS Report operates, we cannot reasonably assume such behaviour, except possibly accidentally and in the short term. To assume, as in this Report, that it persists until 2030 is surely beyond credibility.

There is more. What possible sense can it make that two close neighbours who are determined to have friendly relations in many other spheres such as defence, security, foreign policy, and the mutual treatment of nationals, should effectively go to war on trade? It surely makes no sense, whatever trade deal is or is not achieved. Thus even if there is no trade deal and tariffs are therefore mutually imposed by normal WTO practice, resort to NTBs of the sort assumed here, both illegal and unfriendly as they are, would seem to be ruled out.

Table: New UK-EU trade barriers and GTAP effects under Brexit scenarios Revised according to Credible assumptions

	EEA	FTA	WTO
Tariffs-%	-	-	4.5
Effect on GDP- %	-	-	-1.0
NTBs (access)-%*	-	-	-
Effect on GDP-%	-	-	-
NTBs (regulation)- %*	-	-	-



Effect on GDP-%	-	-	-
*Tariff equivalent %			
Total tariff . equivalent %	-	-	4.5
Effect on GDP-%	-	-	-1.0

\*tariff- equivalent % (to obtain this from the % effects on GDP, we used the equivalent GTAP simulations reported by Ciuriak et al, 2017; this work finds that a UK-EU reciprocal tariffs equivalent of 4.5% produces approximately a 1% of GDP loss to the UK). NTB=Non-Tariff Barrier

#### The effect of FTAs on UK GDP under the GTAP model

We now come to the issue of whether the CS Report has used the GTAP model correctly to assess the effect of UK pursuing general FTAs with the Rest of the world. As mentioned earlier, the GTAP has been widely used to evaluate bold schemes for trade liberalisation, with results generally suggesting these have markedly positive effects on the GDP of the liberalising country or countries. Why is it that the CS Report suddenly finds that the GTAP produces rather trivial gains to GDP, of some 0.3-0.6%, when the UK embarks on such liberalisation with a wide range of countries, including the USA?

Ciuriak et al (2015) find that, assuming that the UK eliminates the 4% weighted import tariffs that it inherits from the EU (p.11, bottom), there is a gain to the UK of about 0.8% of GDP. It may be that the discrepancy between this percentage and the range of percentages found by the CS Report is due to the CS Report not estimating the effect of a unilateral free trade liberalisation.

Yet unilateral free trade should really be considered a minimum estimate of the gains from general liberalisation, because in a wide application of FTAs other countries will require free access in the two protected sectors, food and manufactures, where they export. Thus the UK is likely to open these markets to major world producers of these goods, driving UK prices for these to world prices. This will bring the gains from free trade through lower prices and greater competition, so higher productivity. In addition however, there will be greater reciprocal access for UK producers in many industries from greater access to foreign markets which is not included as part of the unilateral trade liberalisation; in the GTAP this brings gains to UK GDP. Hence 0.8% should be considered the minimum GTAP estimate of the gain to UK GDP from FTAs implemented worldwide, given 4% tariff elimination. The CS Report using GTAP should also obtain this estimate.

Matters do not end there. The actual EU protection of both food and manufactures inclusive of Non-Tariff Barriers is estimated at 20%. Liberalising UK trade via FTAs would eliminate all of this in principle, yielding a gain to GDP of five times that estimated by Ciuriak et al, and so 4% of GDP. Notice that this number is rather in line with the GTAP finding of 5.4% for Australian trade liberalisation over the past thirty years.

In sum, not only has the CS Report assumed excessive EU trade barriers after Brexit but it has also assumed general FTA liberalisation of only a fifth of what the UK could do. When these two assumptions are corrected, the CS Report's results are changed substantially.

Suppose we add 0.6% into the CS Report for FTA liberalisation and suppose also we leave aside the migration and regulation effects which we have not discussed in detail, we get its projected changes in GDP due to the trade effects of Brexit as -1.2%, -4.3% and -6.2% respectively for the EEA, FTA and WTO scenarios respectively. When we correct the CS assumptions for both the exaggerated EU trade barriers and the understated FTA liberalisation gains, these figures all become strongly positive: +4%, +4% and +3% respectively.

## The corrected CS Report under GTAP compared with a CGE approach determined by UK trade facts

So far we have treated the GTAP model as the correct one for the CS report to use. We have shown that if the correct policy assumptions are put into it then it generates substantial gains for UK GDP, contrary to the CS Report.

However, the GTAP model may well not fit the UK trade facts. It is untested on them. But we do know that it embodies equations for many sectors and many countries, all of which contribute to the UK result. It may well not give an accurate result for the UK, given its dependence on so many detailed assumptions, which may not apply to a model constructed to match the UK's situation in world markets.

We have tried to answer this question indirectly by finding a model which *does* match UK trade facts and comparing the results from it with those for GTAP. In this way we can judge how reliable GTAP is for the analysis of UK trade regime changes like Brexit.

Minford and Xu (2017) carried out a test on the UK trade facts, by indirect inference, of two CGE models, constructed to be tractable with four sectors (primary, manufacturing, traded services and non-traded) and four country groups (the UK, NAFTA, the rest of the EU and the rest of the world). UK trade facts were represented by four regressions relating UK trade and other economic behaviour to other elements in the UK and other economies; these constituted the 'auxiliary model' whose role is to describe the data behaviour. The two CGE models were first a classical model in which UK intermediate outputs were all sold in perfectly competitive markets around the world; and a 'gravity model' in which this was replaced by imperfect competition and a link added between trade (implicitly via FDI) to productivity, these both being key elements in the original Treasury et al (2016) theoretical formulations. The test was checked for its power by Monte Carlo experiment and found to reject any model with parameters more than 3% generally false virtually all of the time. This test rejected the gravity model but accepted the classical model, which can accordingly be considered a close fit to UK trade and economic behaviour.

What has this model got to say about the effects of Brexit? Assuming that only half the EU protection is eliminated, the cautious assumption we made for Brexit trade policy, it finds that the gains are 4% of GDP.+ It also finds (Minford, 2018) that the EU trade barriers have no effects on the UK economy because it is already subject to world prices after Brexit and FTA liberalisation; any EU trade barriers have to be absorbed by EU producers wishing to sell anything in the UK market, and any UK trade barriers have to be absorbed by EU consumers because UK producers cannot deviate from selling at world prices, given the intense competition they face at home. Hence the overall gains from Brexit remain at 4% of GDP.

The implications of this exercise for the accuracy of GTAP with regard to the UK economy are that GTAP has a slight tendency to underestimate Brexit gains but qualitatively points to the right orders of magnitude.

+The model is highly non-linear; as more extensive trade barriers are assumed to be removed, further gains are not in proportion.

#### Conclusions

The CS Report has been totally misleading about the effects of Brexit, even though the Civil Service has now used a broadly credible methodology that qualitatively can provide estimates for UK effects of a reasonable order of magnitude. The problems of the CS Report lie in its use of quite incredible and indefensibly negative assumptions about EU customs and border costs and also in its substantial underestimate of the trade barrier reductions from general FTA liberalisation.

When these problems are remedied, we find, according to GTAP, Brexit brings substantial long term gains in GDP from trade channels. This qualitative conclusion is in line with the results from a smaller World Trade Model developed in Cardiff that has been rigorously tested against UK trade facts and found to match them rather closely. From all this, it follows that a Brexit in which the UK is free to pursue FTAs with the rest of the world and so outside the EU Customs Union brings big gains to the UK economy; staying in the EU Customs Union would

therefore be a costly option for the UK, denying it gains approximating 3-4% of GDP.

The CS report also makes pessimistic assumptions about migration and deregulation, on which we have not commented here as the focus in this paper has been on the trade effects of Brexit and Customs Union. Let us note in passing that these estimates too understate the potential gains from Brexit. Minford (2017) shows that the control of unskilled migration in prospect after Brexit will produce a gain from eliminating a distorting 20% wage subsidy to unskilled EU immigrants; it also argues from previous as well as recent research on growth that there will be a 2% gain to UK growth from better regulation.

The key conclusions of this paper are first, that a Customs Union with the EU would be highly costly to the UK according to the estimates of the CS Report appropriately corrected as well as those from our own CGE modelling; it must therefore be avoided. Second, that Customs administration should act to ensure maximum facilitation as mandated by WTO Rules and that this naturally would embrace sensible cooperation with other customs authorities to smooth the passage of traffic through our own and neighbouring ports. There is no requirement for an unprecedented, undeveloped, and untested New Customs Partnership.

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