ALTERNATIVE BREXIT ECONOMIC ANALYSIS

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Dr Gerard Lyons is the Chief Economic Strategist at Netwealth Investments. His portfolio of roles includes Board Member of Bank of China (UK), advisor to financial consultants Parker Fitzgerald and a member of the Advisory Boards of the Grantham Research Institute on Climate Change and the Environment, Warwick Business School and the Official Monetary Financial Institutes Forum. Lyons previously spent 27 years in senior roles in The City at Chase, Swiss Bank, DKB International and Standard Chartered Bank. He was Chief Economic Advisor to Boris Johnson in his second term as Mayor of London, where among other things he championed the Living Wage. He is the co-author of Clean Brexit, (Biteback publications).

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Professor Patrick Minford is a macroeconomist who holds the chair of Applied Economics at Cardiff University where he directs the Julian Hodge Institute of Applied Macroeconomics. Before academic life he was an economic adviser to Her Majesty's Treasury's External Division and editor of the National Institute Review. From 1976 to 1997, he was the Edward Gonner Professor of Applied Economics at Liverpool University where he founded and directed the Liverpool Research Group in Macroeconomics; this built the 'Liverpool Model' of the UK, which was influential in forecasting and policy analysis during the 1980s. He was a member of Monopolies and Mergers Commission 1990-96; and one of the H M Treasury's Panel of Forecasters ('6 Wise Men') January 1993-December 1996. He was made a CBE for services to economics in 1996. His economic interests include monetary, trade, labour market and macro economics and modelling. Recent publications include: *Should Britain leave the EU? An economic analysis of a troubled relationship*, (with S. Gupta, V. Mahambare, V. Le and Y. Xu) Edward Elgar, second edition, (2015).

All are writing in a personal capacity

ALTERNATIVE BREXIT ECONOMIC ANALYSIS

KEY POINTS

This report addresses the leaked Whitehall report, "EU Exit Analysis – Cross Whitehall Briefing". It draws three principal conclusions:

1. **Based on the track record of Whitehall and associated institutions, it must be questioned if the conclusions of this secret report can be trusted**

    - Most Whitehall studies and those of other institutions that have attempted to quantify the long-term economic impact of Brexit have produced negative results in all the scenarios considered. This includes the latest Whitehall analysis, as yet unpublished but leaked to Buzzfeed.
    - However, the UK economics establishment has a long track record of poor forecasting and being wrong on the key issues of the day.
    - Indeed, the UK economy has already avoided the sharp downturn in the aftermath of the Referendum predicted by many, including the Treasury. This resilience cannot simply be attributed to the pickup in global growth, sentiment about the world economy has only genuinely picked up in the last six months, yet the UK economy has proved resilient throughout the 20 months since the referendum.
    - In contrast, many economists who have been proved right in the past have a much more positive view of the future of the UK economy after Brexit.
    - The latest Whitehall analysis can only be properly assessed and subjected to rigorous outside scrutiny if it is published. The failure to do so - together with the close similarity of its results to previous discredited Treasury analyses - has fuelled suspicion about the objectivity of the work.

2. **If the Government's policy - as declared at Lancaster House - is fed into the new Whitehall model, it produces positive outcomes for Brexit that are essentially the same as those of the models of other independent economists**

    - Notwithstanding the secrecy of the leaked report, we have been able to piece together the key elements of the new Whitehall approach – the failed Treasury 'gravity-like' model has been discarded in favour of a standard CGE world trade model like those used by other independent economists
    - The latest Whitehall analysis makes many assumptions that are simply not credible. Strangely, it does not even model the new agreement with the EU that the government is seeking. But it does appear to assume that even with an EU agreement there would be absurdly large border costs on UK-EU trade; also that eliminating current EU-set trade barriers against non-EU countries would have negligible effects on the UK's non-EU trade and the UK economy, an assumption that is demonstrably false on the very GTAP model it is using.
    - The report shows that if the government's Brexit policy (as declared at Lancaster House) is fed into the new Whitehall model and unreasonable assumptions, as mentioned above,

are corrected, the long-term economic impact of Brexit is positive. Using this same model – but with more credible assumptions – we find that the level of GDP could be between 2 per cent and 4 per cent higher in fifteen years than if the UK had remained in the EU, rather than up to 8 per cent lower as reported by Buzzfeed.

3. **The UK can have a bright future outside of the EU irrespective of whether or not the UK is successful in securing an attractive trade deal with the EU, assuming Government implements the correct policies with regard to the exit and subsequently after we have left**

- Having verified that the new Whitehall model – using appropriate policy and other assumptions - produces similar results to our similar but independent models, we present alternative estimates that suggests that positive impacts could be much greater.

- What's more, even the negative Whitehall numbers need to be put into proper perspective. A baseline assumption of 1¾ per cent annual growth, would lead to a GDP increase of 30 per cent over 15 years. Overlaying the negative Whitehall results would still leave the economy much larger than it is today.

Therefore, the latest Whitehall analysis should not deflect the government from making the most of the opportunities presented by the UK's departure from the EU.

ALTERNATIVE BREXIT ECONOMIC ANALYSIS

During the run-up to the 2016 referendum campaign, the Treasury published two reports that were widely accepted as supporting what came to be known as 'Project Fear'. The first, on the long-term economic impact of Brexit, estimated that if we left the EU on 'WTO terms' with no trade deal with the EU, it would lead to the UK's GDP being 7.5 per cent smaller in 15 years' time compared with no Brexit, although the UK would still grow significantly. A second report, on the immediate economic impact, predicted that a vote to leave would push the UK into recession and lead to a sharp rise in unemployment.

In the past couple of weeks, a cross-departmental Brexit report entitled, "EU Exit Analysis – Cross Whitehall Briefing", and heavily influenced by the Treasury, has been carefully 'leaked' to Buzzfeed. It reportedly says the same policy will reduce growth by 8 per cent of GDP over 15 years. Accompanying that are detailed implications for areas of the country and industries that are equally gloomy. It has become evident that officials in all departments relevant to Brexit have been tasked by officials at No 10 to brief their ministers with PowerPoint presentations on the dire implications of this report.

This has led to a flurry of commentary, with some in the media uncritically referencing the leaked report extensively for some days. It was a surprise to many that the BBC, amongst others, placed such great stress on this piece of leaked information without understanding its assumptions or methodology sufficiently. The timing, not just of the leak and of the report, coincided with the Brexit Cabinet committee's meetings to decide the detailed position of the government in the trade negotiations.

According to Buzzfeed and numerous leaks elsewhere, these cross-departmental officials have redone the Treasury's Brexit long-term forecasts with a new methodology they believe is better than that used for similar analyses before the referendum.

So, what are we to make of this? Have the Treasury and other Whitehall officials finally discovered a new way of analysing Brexit that provides cast iron evidence for their view that the best we can hope for is finding policies that simply mitigate the damage?

The authors of this report do not think so. We believe there is a strong economic argument on which to challenge this Whitehall narrative about the economy's future under Brexit. We also believe the future under Brexit holds substantial potential gains for the UK. Of course, there could be short-term challenges associated with leaving the EU as we have been in it for over four decades, but these should not divert attention from the longer-term opportunities.

We believe these Whitehall forecasts should not be accepted as fact. This report draws three important conclusions:

1. **Based on the track record of Whitehall and associated institutions, it must be questioned if the conclusions of this secret report can be trusted**

2. **If Governments policy - as declared at Lancaster House - is fed into the Whitehall model, it produces positive outcomes for Brexit essentially the same as the models of other independent economists**

3. **The UK can have a bright future outside of the EU irrespective of whether or not the UK is successful in securing an attractive trade deal with the EU, assuming Government implements the correct policies with regard to the exit and subsequently after we have left**

SHOULD WHITEHALL'S ANALYSIS BE TRUSTED?

All those who attempt to forecast the UK's long-term future must bear the burden of having their endeavours frequently proved wrong. The best that can be done is to try to see the broad shape of the future with all its possibilities, risks and uncertainties. Most importantly, we must try our utmost not to fall into the trap of accepting blindly the current fashionable wisdoms and/or producing forecasts that are systematically biased.

In this regard, it must be said that the UK economic establishment has a very poor record in getting things profoundly wrong at some **critical junctions**. This isn't a matter of misforecasting the GDP or inflation figures by the odd percentage point or two. We all do that all the time. Rather, the record is making some **serious errors of judgment** about some of the **key issues before the country**.

The Track Record

While we currently are focused on the issues surrounding Brexit, it is important to recognise that the economic establishment has form in this regard. The record goes back a long way.

> **Leaving the Gold Standard.** In 1931, the UK was struggling to stay on the Gold Standard, a monetary regime that pegged the pound (and other currencies) to gold at a fixed rate. The rigours and sufferings involved in sustaining this exchange rate all but broke the government of the day. The Treasury, Bank of England, and just about the entire economic establishment, argued that if we left the Gold Standard, the roof would fall in. In today's language, if we "crashed out" of the Gold Standard, we would career over a "cliff edge".
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> In September 1931, we left the Gold Standard and the pound duly fell appreciably. But the result was no sort of disaster. Not only did interest rates come down but both exports and the domestic economy revived. What ensued was the fastest sustained period of economic growth since the Industrial Revolution. As Sidney Webb, a former Labour Minister put it, "No one told us that we could do that". (Actually, John Maynard Keynes had been saying exactly that for years).
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> **Thatcher Reforms.** Nearly half a century later, the country faced acute economic challenges after the instability of the 1970s. Mrs Thatcher's government proposed a series of radical reforms to liberalise the economy. This programme encountered fierce opposition across the establishment, including from the CBI.
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> Some economists were more positive, including Professor Patrick Minford (one of the authors of this report), as well as many other contributors published by the Institute of Economic Affairs (IEA). But these voices were in the minority as in spring 1981 364 economists famously wrote to 'The Times' complaining about economic policy, predicting imminent doom at just the wrong time.
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> In the event, the Thatcher reforms helped boost the performance of the UK economy to the point where, having been a laggard in the tables of growth rates of the leading developed economies, it became one of the leaders, particularly in comparison with the continent. But,

of course, there were consequences and legacies of the reforms with which not all agreed, including some of the authors of this report.

Leaving the Exchange Rate Mechanism (ERM). Towards the end of Mrs Thatcher's premiership, the UK joined the ERM with the enthusiastic support of most of the establishment. During our two year membership of the ERM we struggled to hold onto the designated parity against the Deutschmark. The economy languished in recession and unemployment soared. The economy desperately needed lower interest rates but this was not possible while we stayed in the ERM. The Treasury, backed by most of the establishment, argued that if we left disaster would ensue: inflation would soar and this would necessitate higher interest rates that would lead to an even deeper recession. A small band of economists (including authors of this report) argued that, by contrast, this would be similar to 1931; interest rates would be cut, the pound would depreciate, inflation would stay low and the economy would recover.

In the event, on 16 September 1992 sterling was forced out of the ERM. Interest rates were slashed, inflation stayed down and the economy recovered.

Joining the Euro. Before the decade was out, the leading lights in economic policy on the continent wanted to go beyond the ERM to forge a single currency, which they said was the key to future prosperity. This idea was soon realised by the formation of the euro. Most of the UK's economic establishment including the Treasury greeted this with enthusiasm, once again worried if the UK did not join the euro, the country would suffer greatly as the continent forged ahead and we were left behind – or worse. Once again, this refrain was taken up enthusiastically by the CBI. However, the government of the day, influenced heavily by the Chancellor, decided for political reasons that the timing was not right.

In the City, many of the great and good opined that the City could be dealt a severe blow if the UK stood aside from the euro. A particular worry was that London would lose out as Europe's financial centre to Amsterdam, Paris or Frankfurt. Meanwhile, Japanese carmakers warned of nasty consequences, including possible disinvestment. Such concerns may seem familiar today.

There were a few naysayers - including authors of this report - who felt the euro faced deep rooted problems and was not suitable for the UK to join. There were others too who saw the euro as failing many economic tests. For many economists, a particular concern was that the "one size fits all" monetary policy would lead to recession in the weaker member countries. Far from bringing convergence, the euro would lead to divergence between the strong core, led by Germany, and the weaker peripheral countries. The result would be large-scale unemployment with all its attendant sufferings. The UK would do well to stay out of it.

In the event, the euro has been a disaster, as is now acknowledged by many of those who supported it. Far from bringing in a period of increased European economic performance, it has been responsible for distinct under-performance and mass unemployment, just as forecast by some of us. By contrast, during the existence of the euro, the UK has done relatively well. The Japanese auto manufacturers stayed and went from strength to strength. While we should always take seriously the concerns of big business, these need to be kept in context. As for the City, it has prospered as never before. Amsterdam, Paris, and Frankfurt are now niche financial centres, unable to match the infrastructure and depth of market seen in London.

Finally, the reasons for opposing the euro remain valid suggesting that the EU is built on shaky foundations, as the euro is at the core of it.

In addition to the above examples, the establishment has also missed some of the defining issues and changes of the period. Hardly anyone can truly be said to have foreseen the financial crisis of 2007-2009 and its aftermath but the economic establishment, led by the Treasury and the Bank of England, did not even see a glimpse of it.

Earlier, they had failed to see the advent of a regime of low inflation, accompanied by ultra-low Interest rates that have defined most of the last quarter of a century. In 1996, however, to widespread disdain from the economic establishment including the leading central banks, Roger Bootle published a book entitled *The Death of Inflation* that foresaw exactly that.

Thus, the Treasury and the group-think of Whitehall officials have been at the centre of virtually all the bad judgements listed above. Moreover, their approach and power has heavily influenced others in the business, economics, and many international institutions to echo their sentiments.

This has continued to the present. In particular, the Treasury has been spectacularly wrong in their post-Referendum judgments and their use of models has been widely criticised by many in the economics profession on both sides of the debate.

The Brexit Experience

When it came to the EU referendum, most of the economic establishment - along with big business led by the CBI - supported the campaign to Remain in the EU. Economic disaster was forecast immediately following a vote to leave. The Treasury produced a forecast of what would happen if we voted to leave – a recession, with GDP 3.6% lower than otherwise within two years, and unemployment 520,000 higher. Their alternative scenario included a much more serious recession: a slump in GDP of 6 per cent, and an increase in unemployment of 820,000

Again a few (including all the authors of this report) disagreed. We agreed with the Treasury that a Leave vote probably would lead to a large fall in the pound, but we argued this would be a good thing, leading to stronger trade performance and a more balanced economy. A lower pound plus likely action by the Bank of England would provide a monetary stimulus. Much of the rest of the economy would carry along as before. There would be no recession.

It wasn't just the Treasury's forecasts that were hopeless. The economics commentariat in general did not exactly cover itself in glory. For example, the updated forecasts in the Treasury's poll of independent analysts published in July 2016 (the month after the referendum) predicted a collapse in annual growth to just 0.5 per cent in 2017, from a projected 1.5 per cent in 2016. In the event, the latest data show that growth remained close to 2 per cent in both years, consistent with the forecasts by the macroeconomics research team at Cardiff University. In fact, average quarterly growth in GDP has been almost exactly the same in the six quarters since the referendum as it was in the six quarters before (around 0.5 per cent). Talk of an imminent recession has clearly been proved wrong.

There have been many excuses made. Perhaps the doomsayers simply jumped the gun. After all, the UK hasn't actually left the EU yet. Many still cling on by pointing out that the UK's growth rate has fallen from near the top of the group of developed economies to among the lowest. They argue that the economy should have done a lot better, given the strength of the global economic recovery. However, the Treasury forecast that both consumption and investment would be extremely weak; this hasn't happened. Moreover, the business cycles in western economies have been very different post the financial crisis. The economies of the continent were late into the recovery and have been helped by the accommodative stance of the ECB. The UK was arguably due a period of relative underperformance, regardless of Brexit. As in the past, these cyclical positions could reverse in coming years.

Looking Longer-Term

Being proved so wrong about the immediate impact of the vote to leave has not deterred the economics establishment from continuing to predict disaster in the long term.

Indeed, at first sight the leaked Whitehall 'impact analysis' does not seem to add much to the 2016 Treasury report. It looked at the same three scenarios ('Norway', 'Canada' or 'WTO rules') to arrive at similar results: GDP hits of 2%, 5% or 8% over 15 years, compared to central estimates of 3.8%, 6.2% and 7.5% respectively in the Treasury's 2016 study.

Reports from a host of other organisations in the economics establishment have come to the same conclusion. The UK will, it is claimed, be 'worse off' under any scenario. Only the degree of damage, apparently, is uncertain.

At first sight this might look like compelling evidence. These respected economists all agree. But weaknesses soon become clear. For a start, it is not a great surprise that running essentially the same assumptions through essentially the same models produces essentially the same results – regardless of who inputs the data.

Fortunately, a number of leading economists with considerable expertise and good forecasting track records suggest a very different outlook. Many of these economists have their own forecasting approaches that have proved successful: this includes all the authors of this report as well as others such as Professor Paul Ormerod, Bridget Rosewell, Ruth Lea, Andrew Lilico, and members of the eighteen-strong group of Economists for Free Trade.

It is not uncommon for economists to have different views and such differences should not be disparaged: the key point is whether their analysis is sound and objective.

In the wake of recent Brexit experience, there is a powerful case for giving strong weight to independent analysis. The first step in this process might be to publish the secret Whitehall report.

WHAT IS THE WHITEHALL MODEL AND WHAT DOES IT PREDICT?

While Whitehall's new modelling approach may be better than in the past, in one very important respect, it clearly is worse. At least previous Treasury reports - including broad descriptions of the underlying models - were published, downloadable, and still are. In contrast, this report is shrouded in secrecy: reportedly, not even Ministers are allowed to keep copies of the PowerPoint slides presented to them.

However, we have been able to piece together the key aspects of this new approach.

Whitehall Used a Standard CGE Model ('GTAP')

Until now, the Treasury has used something called the 'gravity approach'. This approach consists of four sequential steps using empirical relationships derived from the history of a variety of countries over a wide-ranging time period. These relationships attempt to correlate the connections amongst trade, GDP, membership of different trade blocs; Foreign Direct Investment, and productivity. The productivity result is fed into a standard macroeconomic model of the UK economy that produces the final published macroeconomic forecasts.

It is important to realise that the Treasury approach was not, in fact, a proper gravity model but rather just sequential calculations based on a set of correlations. As the Treasury or other officials now seems to have conceded, this procedure made no sense because all these relationships are just 'correlations' – correlations do not reveal causation. We have a correlation between unemployment and crime; but it would be dangerous to use it to predict unemployment from data on crime. This is because both these data series are impacted by a complex causal system involving a lot of other factors.

Whitehall's new approach has, it seems, dumped the old Treasury calculations and methodology. Plainly, wide-ranging criticism of this old approach has hit home (see EFT, *The Treasury Report on Brexit: A Critique*).

We now understand that Whitehall's new approach employs a standard Computable General Equilibrium (CGE) Model, just the same as the World Trade Model created and used by the Cardiff University macroeconomics research group. Because the Government Economic Service does not have the in-house capability to develop such complex models, they sensibly have elected to use the Global Trade Analysis Project (GTAP) model, a workhorse created at Purdue University in Indiana that has been developed since 1992 by multiple universities, government and international agencies. It is a very large model of the whole world and one version of it (28 country groups, 57 sectors) was the basis for Open Europe's modelling report in 2016 prepared by Ciuriak Consulting in Ottawa, Canada, an economic consulting firm experienced using the GTAP model.

It is worth commenting on the detailed UK regional forecasts reported in the Buzzfeed leak. While the GTAP model may have the capability to produce such forecasts, in reality, these forecasts can be no more accurate than the aggregate forecast produced for the UK economy as a whole. If the forecast for the entire UK economy is wrong, it follows that sectoral/regional subdivisions of the forecast will also be wrong. Moreover, they are likely to have greater errors as the total is broken down into smaller parts and additional data assumptions are used. Consequently, such forecasts should be treated with scepticism.

In fact, it is doubtful if any single manufacturer could produce such a forecast that would be considered reliable. For example, the UK auto manufacturing industry is based in multiple regions, with many different product lines, and about half of its output is for either the home market or exported to the US and China. The latter is growing rapidly and could be expected to grow even more rapidly if the UK embraces free trade. Given the rapid advent of electric and driverless cars, the entire structure of the industry is likely to be profoundly different in fifteen years time.

GTAP Produces Positive Results for Government's Brexit Policy

So far so good: Whitehall officials have dumped the Treasury's gravity approach and adopted a full world causal CGE trade model, which they should have done years ago.

It is of great interest to ask what the GTAP model would say about Brexit, assuming Government policy as announced in the Lancaster House speech. Fortunately, as mentioned above, a group of economists working for Open Europe have done most of this for us - see Curiak and Xiao.

Let us summarise the benchmark trade policy assumptions of the Government as 'general free trade with the non-EU world' plus a 'close relationship with the EU', such as 'Canada +'.

Simulating General Free Trade. We can approximate 'general free trade' by 'unilateral free trade' (UFT), which has been modelled on GTAP by Ciuriak and Xiao. UFT approximates the combined effect of many FTAs with the rest of the non-EU world in eliminating protection of food and manufactures: in an FTA you seek opening of other markets in return for opening yours. Other countries therefore demand you eliminate your protection in exchange for eliminating theirs: so your own trade barriers decrease as they would in UFT. However, note that, because in this analysis we are effectively costing only the effect of reducing our own trade barriers and not adding in any gains of reduced trade barriers from others on our products, UFT can be thought of as giving only a lower bound on the gains from a free trade policy.

The 'UK UFT simulation' by Ciuriak and Xiao indeed shows gains for the UK, but their calculated gain is only 0.8% of GDP. Why so low?

Importantly, they assume that the combination of tariffs and non-trade-barriers eliminated is just 4 per cent. However, it has been shown - rather uncontroversially - that trade barriers erected by the EU for food and manufactures are each 20% (see Minford, et al) when non-tariff barriers are included; 4 per cent is simply the tariff barriers alone. In other words, Ciuriak and Xiao assume post-Brexit that we do not eliminate non-tariff barriers set up by the EU against the world. But if we wish to achieve free trade that would be nonsensical.

Assuming an estimate of 20 per cent for total trade barriers, Ciuriak's and Xiao's results can be multiplied five times, which gives 4 per cent of GDP – the same as the result obtained by the Cardiff World Trade Model. However, it should be noted that the Cardiff research group conservatively assumes that total trade barriers will fall to 10% over the long term, which would give a welfare GDP gain of 2% in the GTAP model.

Simulating a 'Close Relationship with the EU'. Ciuriak and Xiao also do a 'Brefta' scenario, which is essentially Canada +. Here, they assume large costs at the UK-ROW 'border' – rules of origin and customs checks. The cost of these border costs to the UK comes out at 1 per cent of GDP.

The authors of the Whitehall report, like those in the Treasury, appear obsessed with the EU's importance in our trade. They see this in terms of the EU's 'closeness' versus our 'distance' from the rest of the world; and especially in the avoidance of border costs. Both of these ideas are part of the gravity ideas in trade that distance is costly and that border costs are large because of time to get paperwork agreed before ships are allowed to unload.

However, these ideas have been totally bypassed by the progress of technology. First, containerisation has reduced ocean transport costs to trivial amounts. Second, customs clearance computerisation has more or less eliminated border costs among developed countries - almost all cargos are cleared before reaching the border. Third, can such large costs arise when the WTO's Trade Facilitation Agreement mandates that borders must be virtual?

Therefore, the assumption of such high border costs seems unreasonable. The World Bank (see World Bank Logistics Performance Index) tracks annual customs clearance performance country-by-country and shows that, in 2016, 98 per cent of the trade for fifteen developed countries required no physical inspection and the median clearance time of the remaining 2% was one day. These countries vary widely and all conduct much of their trade under WTO rules.

Such assumed large costs appear to presume that either the UK or the EU would act illegally at the border - which is entirely implausible. Both the UK and the EU are sticklers for legality, the EU because its whole structure is based on treaty law and the UK because its political philosophy is bound up with the rule of law.

Furthermore, Jon Thompson, the Chief Executive of HMRC, has testified on seven occasions to select committees that UK customs clearance procedures will be ready in March 2019 – in fact, we will have streamlined customs procedures operating by January 2019 with a backup system in case one system fails. The first rollout of the system begins in July of this year.

For these reasons, we have assumed for the purposes of modelling that border costs are effectively zero.

Thus, having redone the GTAP trade calculations reported for Open Europe with the assumptions appropriate for the Government's expressed Brexit policy of 'EU Canada+ plus' ROW Free Trade', GTAP produces a GDP gain of 2 per cent. This compares to the 5 per cent loss reported by Whitehall officials in the Buzzfeed leaked report - a directional difference of 7 percentage points.

The Cardiff World Trade Model result (see EFT, *From Project Fear to Project Prosperity*) - assuming announced Government Brexit policy – is a positive 4 per cent impact on GDP. So why is this finding larger and why is it more likely to be right? Part of the answer is the large border costs assumed by the Whitehall analysis. Another part of the answer – as discussed above – is that modelling of UFT provides only a lower bound on the gains achievable from implementing global FTAs.

But, there is an additional factor.

GTAP is Not Validated for the UK

An additional important problem in the Whitehall calculations is with the GTAP model itself. It is a good CGE model - in principle, much like the World Trade Model used by the Cardiff research team. However, it is a vast and detailed model and is unlikely to model the UK economy and trade very well. No one has attempted to test it on the UK and, because it is so large, no one is likely to do so.

However, the smaller Cardiff model has been tested statistically against the UK trade facts to see whether it fits them or not. To do this, you need to set up a model of UK trade, holding the rest of the world as constant; that way one can focus on what it says about the UK.

The results of a year-long project in which this was done can be found in the 2017 publication by Minford and Xu, *Classical or gravity? Which trade model best matches the UK facts?* This work showed conclusively that the Cardiff World Trade Model does, indeed, produce accurate results for the UK economy. Therefore, this is likely to account for an additional part of the different results between the Cardiff and Whitehall models.

But – critically - **the key point is not to debate 0.8 per cent vs 2 per cent vs 4 per cent, but rather to observe that all of these results show a <u>positive</u> gain for GDP, in contrast to the enormous 5 per cent loss in GDP claimed by the new Whitehall analysis.** Furthermore, the Whitehall result should be seen in the context that the UK exports only 12 per cent of its GDP to the EU: Whitehall would have you believe that Brexit will cause the UK to lose almost half the value of its EU exports!

Additionally, it was found that, even though a <u>properly constructed</u> 'gravity model' of UK trade (not just a loose set of 'gravity-like' associations as the Treasury used) had a poor statistical fit generally with the UK economy, the properly constructed gravity model produced similar outcomes to the Cardiff World Trade Model for the Government's Brexit policies of free trade and an EU FTA.

So, in summary, what appears to matter is whether (a) the correct Brexit policy and other assumptions are fed into the model and (b) the model is 'tuned' to fit UK trade facts faithfully. **If the correct Brexit policies are fed in, it seems that all of the models – GTAP, Cardiff, and gravity models – produce directionally the same results – all clustered around a positive 2 per cent to 4 per cent of GDP range. And the positive result gets larger the closer the model being used gets to the facts of UK trade.**

WHAT CAN WE EXPECT FROM BREXIT?

We believe the UK has a bright future outside of the EU. The UK's departure from the EU is a once-in-a-generation opportunity to create a more open and dynamic Britain, lowering barriers to trade with the rest of the world that increase productivity, and adopting policies that better suit our own economy. To make the most of this opportunity, the UK government needs to continue to focus on the free-market solutions that have transformed the country's performance since the 1970s, while also helping more than a billion people worldwide lift themselves out of poverty.

We believe this can be the case irrespective of whether we are successful in agreeing a trade deal with the EU – assuming the Government plays its hand properly in the negotiations. **This requires the UK to stop considering the negotiations as a 'damage limitation exercise', as well as defining 'negotiation success' as securing a trade deal (at any cost).**

Because this report is a response to the Whitehall economic assessment, it is necessarily concerned with quantification of our economic future. But before turning to that, it is important to recognise the many non-quantitative aspects that bear importantly on the UK's post Brexit future.

Here are twelve:

1. The EU is widely perceived as a zone of economic success. It isn't. Over recent decades its relative economic performance has been poor. This is the result of a series of poor decisions, including the formation of the euro. By contrast, the UK economy has grown relatively well. Although the euro area is experiencing a cyclical upturn, helped by the accommodating policy of the ECB, this should not divert attention from the underlying deep-rooted flaws in the euro area.

2. The trend in the proportion of the UK's exports that goes to the EU is clearly down - from 61 per cent in 2000 to 44 per cent last year. Although this measure can vary from year to year – and may indeed increase this year – the longer-term trend is down as well. Only 8 per cent of UK firms representing around 12 per cent of the economy sell directly into the EU. While they are important - hence the focus on tariff free trade with the EU - the remaining 88 per cent of the economy is important also.

3. Never before has the rest of the world appeared more important for UK trade. The EU, as a group, would have been 34.1 per cent of the world economy in 1980, compared to just over 22.5 per cent now. Once we have left, the remaining EU 27 will be less than one fifth of the world economy.

4. The EU is not a free trade area. It is a Customs Union and a Single Market. This means that while it has zero barriers to trade in goods within its borders, it imposes large barriers on trade with countries outside the Union.

5. Most of the rest of the world is not in the Single Market but it seems to be getting along all right. Indeed, most of the rest of the world is not in any single market. Rather, some parts of it belong to free trade areas or are members of various Free Trade Agreements. NAFTA, comprising the United States, Canada and Mexico, is not a Single Market. It is a free trade area.

6. Moreover, many countries outside the EU enjoy great success in selling into it. There is no reason why the UK cannot be in precisely this position.

7. It is widely said that if the UK left the EU without a deal and relied on trading under WTO rules this would be a leap into the dark. Yet the UK trades with most of the rest of the world, including the US, under WTO rules. In other words, it would be a leap into the familiar.

8. It is widely believed that the secret of economic success is to belong to some large economic bloc. Yet history proves this is completely wrong. Plenty of large blocs are not prosperous while plenty of small countries are – such as Singapore and New Zealand (two countries that have enthusiastically embraced free trade). The key is to make the right policy decisions.

9. There are systematic reasons why the EU makes bad decisions since its structure is inherently dysfunctional. Further bad decisions can be anticipated in future over pensions, harmonised tax rates, robotics and much else.

10. The EU is not a static entity. As Jean-Claude Juncker and Emmanuel Macron have made clear, it is determined on further and deeper integration which means that, if the UK were to remain a member, it would be hard pressed to stay outside of the Eurozone. Accordingly, the costs of EU membership are likely to increase over time.

11. It is often said, by staying inside the EU, the UK could have hope to reform it. But, since the advent of Qualified Majority voting, the UK never had enough power to achieve this, against the might of the integrationist establishment. By contrast, the best hope for reform of the EU, from which the UK would also be a beneficiary, is the UK's success outside the bloc. This would act as a spur to economic improvement in Europe, either through a strengthening of the forces making for reform of it or by other countries leaving the bloc.

12. The assumption that remaining in the EU helps our regional outlook is dubious. The UK has three regions in the top five and four in the top ten but many poor performing ones. We know from the previous coalition government's competency reports on areas such as "cohesion funds" and others that we will have more room for manoeuvre to address such issues outside the EU, as well as having to do things on regional policy that we should probably have done anyway while in the EU

Practically every economist accepts that the world economy faces considerable change. This has already triggered a widespread debate about the future of work and the economic impact of artificial intelligence, stem cell research, financial technology, robotics and more. And, this change is being driven primarily from countries outside of the EU.

Moreover, while the EU will still be important, it is declining in importance. The UK must ensure in its analysis and future policy that it avoids becoming obsessed with the EU, and that we are able to position ourselves with the close to four-fifths of the world economy that is outside the EU and that we focus on the 88 per cent of the UK economy that does not export to the EU.

Whitehall's Projections

The Whitehall economic projections predict that every possible Brexit option produces an outcome that is worse than our current situation. These 'effects of Brexit' are projected to occur over a very long period of around 15 years during which time even the Treasury and Whitehall still expect the UK economy to grow strongly, Brexit or not.

To put this into perspective, if - for example - the economy grew on average by only 1.75 per cent per year, it would be 30 per cent larger over 15 years. The Whitehall forecasts - based on unrealistic pessimistic scenario assumptions - are reported to show the economy being 8 per cent, 5 per cent or 2 per cent smaller than it otherwise would be – still leaving the economy larger than today by 22 per cent, 25 per cent, or 28 per cent.

But these projections assume scenarios that are not consistent with announced Government policy and make policy assumptions that no sensible government would implement. No one expects the government to pursue policies that make us less well off. But this is what the Whitehall mandarins are attempting to persuade us will happen under any scenario other than the status quo, even if we are outside the EU.

For example, it is often assumed that the government would use the greater control of borders to severely restrict immigration in ways that needlessly harms the economy. But again, future policy in this area would be entirely in the hands of the government of the day to decide. And even if this assumption is correct, the main impact of lower migration would be felt on GDP, rather than on GDP per head, which is arguably more important. Put another way, if the economy is x% smaller only because there are x% fewer people, would it really be right to say that UK households are x% worse off? Obviously, they would not be any worse off at all.

Similarly, it is usually taken for granted in modelling 'no deal' scenarios that the UK government would choose to impose damaging new tariffs on imports from the EU. This has led to claims that UK households would be as much as £930 a year worse off. But the government could also maintain the level playing field required under WTO rules by lowering tariffs on imports from the rest of the world. This would have a positive impact.

To put this into a nutshell, officials have made their Whitehall analysis case by assuming absurdly that lowering enormous trade barriers against the rest of the world will have virtually no effect, while maintaining existing barrier-free trade with the EU under a Canada+ trade agreement will create huge costs in lost trade with the EU. If one makes sensible assumptions on any of the models we have discussed above, you get strong positive gains from our enhanced trade with the rest of the world and no losses on our trade with the EU.

Consequently, we do not accept the Whitehall report as a reasonable or practical analysis.

Moreover, the Whitehall analysis takes no account of the gains to the UK from pursuing better future regulation than the EU, as well as dismantling some of the damaging EU regulation already in place here - such as MIFID II, short-term targets for costly renewable energy, and needless restrictions on labour market flexibility. These gains are potentially very large, especially when one considers the way technology is changing – eg, the progress of Fintech, robotics, driverless cars, and bio-technology.

Additionally, there are the gains from putting an end to the large (20%) wage subsidy we are forced to pay to unskilled EU immigrants by EU free migration. The burden of this subsidy is carried mostly by poor people in the communities where unskilled immigrants settle; on top of this the same people suffer from falling wages due to this subsidised competition. EFT has calculated that Brexit will raise the living standards of such poorer households by around 15 per cent (see Ashton, et al}.

Last, but not least, we get back our substantial contributions to the EU budget.

Alternative Projections

As shown above, if policy assumptions consistent with the Lancaster House speech are used, the Whitehall model produces a positive outcome. We have further showed that the direction of change is consistent with the results produced by other models - the Cardiff World Trade Model in particular - and that the difference in quantitative outcomes amongst the models is insignificant, when all the inherent uncertainties are considered. Therefore, we believe assessing the future using the Cardiff World Trade Model is justified.

In addition, we assess the gains that are likely to be obtained in addition to trade gains. While some aspects of these gains are judgemental leaving room for disagreement (even amongst the authors of this report), the main point to be grasped is that there is scope for greater gains than the 2-4 per cent suggested above, let alone the large negative impacts reported by the Whitehall studies.

Thus, the combined gain from trade effects, deregulation, reducing unskilled immigrant subsidies, and ending our annual contribution to the EU budget can be calculated to be around 7 per cent of GDP over the next 15 years. A fall in average consumer prices of 8 per cent will pass some of this directly to households, and poorer households will receive direct gains in their living standards of 15 per cent. In the even longer term, we foresee further, ongoing, growth due to better and more pro-business regulation. The 'Brexit dividend' to government finances will enable yet further gains to growth through potential tax cuts and enhancement of public spending programmes (see EFT, *From Project Fear to Project Prosperit*y)

The above provides the overall Brexit context. The following sections summarise more specifically what can be expected from implementation of the two principal likely outcomes from the EU negotiations (see EFT, *A Budget for Brexit*)

1. Implementation of the Lancaster House policy of a Canada+ Free Trade Deal with the EU and agreeing FTAs with the rest of the world

2. No trade deal agreed with the EU and embracing global free trade under WTO rules

1. Canada+ with EU and FTAs with ROW. In spite of the continuing dire forecasts from Whitehall, we believe the economy will continue with business as normal while also gradually benefiting from the Brexit gains identified above. The devaluation brought on by Brexit is acting as a powerful stimulus to the economy, switching demand away from consumers to net exports and business investment, thereby boosting corporate profits. This is a normal exchange rate response to a large regime change like Brexit.

As capacity gets used up, business investment will strengthen further. As labour availability gets used up, wages will begin to rise faster. Once immigration controls bite on unskilled EU immigration, this situation will get tighter; so far, the labour market remains somewhat slack, with many workers working fewer hours than they would like.

With the economy still not tight on either plant or labour capacity, there will be some leeway on monetary tightening. However, the zero interest economy underpinned by massive printing of money and combined with draconian regulation of banks is causing widespread problems. Government, large and inefficient corporations, and so-called 'safe' borrowing like mortgages and car loans are being artificially subsidised while savers get negative real returns and small businesses get poor access to credit and on tough terms. In order to withdraw from this distorted situation, interest rates are likely to be raised in a studied gradual way, slowly withdrawing in concert the vast pool of printed money and also loosening the excessively tight regulations on bank lending. In doing this it will be joining the US Fed and also probably quite soon the ECB.

Against this background, Brexit will lead to a strengthening of competition and growth, while also slowing inflation. In addition to the one-off gains from Brexit that push up the growth rate in the medium term, innovation and entrepreneurship created by the more competitive environment could further boost longer-term growth. This should keep growth in the higher range for a prolonged period of time.

While clearly it is impossible to forecast such a major regime change to the economy - and there will be many different views amongst economists – it is instructive to observe the direction and broad profile of this scenario as projected by the Cardiff University Global World Trade/Liverpool models. This scenario assumes an Implementation Period of some 15 months so that Brexit 'begins' in the third quarter of 2020.

This projection indicates that growth moves from around 2% today to 3% by 2025; and money GDP moves from about 4% growth today to around 5% by then. Public borrowing goes into surplus by 2021 and the debt/GDP ratio falls to 60% by 2025. This is the target for safe borrowing widely adopted around the world. By 2027 the ratio is down to 50% and falling rapidly. This would allow the creation of a 'Brexit Fiscal Fund' available to be used for either tax cuts or spending on key public services and infrastructure. It could start in 2020 at £25 billion a year, and be raised in 2025 to £65 billion a year, while still hitting the 60% debt/ratio target by 2026.

The point of these projections is not 'forecasting' but to illustrate the potential attractiveness of a post-Brexit economy. While no claims are made for accuracy, it is clear that such an outcome is very different and much more attractive to what is forecast in the Whitehall report.

2. No EU Trade Deal and Trading Globally Under WTO Rules. Under no EU deal, but one where the UK pursues its planned policy outside the Single Market and Customs Union, of creating free trade by signing agreements with the non-EU world, we move immediately to a clean Brexit in March 2019, fifteen months earlier than assumed above. With no trade deal, the UK financial settlement and the transition period would not occur. Thus, the gains from Brexit kick in earlier. From the UK viewpoint, paying no financial settlement would be a gain, avoiding the need to pay some £38 billion. Also, with no transition period, free trade, own-regulation, and own-border-control would come two years earlier, bringing forward another long term gain. Discounted at 3% pa, this would be an extra one-off gain worth around 9 per cent of GDP, around £180 billion.

Tariff Effects. For UK producers selling in the EU, home competition would force their EU prices to equality with world prices: were one UK producer to get more others would divert output to their market, driving prices into line. If the existing EU Common Customs Tariff was levied mutually by both sides, EU producers selling in the UK would have to match the new competition, so that their UK prices would remain the same as with a deal - otherwise they would sell nothing. Similarly for UK producers selling into the EU; home competition or their common mark-up would force them to match home competition with their EU prices. So, EU producers would now have to absorb the UK tariff; and EU consumers would have to pay the EU tariff on top of the invariant UK price. Hence the tariffs on both sides would be paid by the EU, the UK tariffs by EU producers, the EU tariffs by EU consumers.

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

It is possible that if no deal was reached about trade with the EU, there could be a fair amount of non-cooperation in a variety of areas. However it must be remembered that by law there cannot be discrimination by either side. Also there must be professional, smooth customs clearance (largely by computer with no hold-ups), again by law. Similarly, there must be mutual recognition of product standards, again by law. When it comes to such agreements as airline flying rights, these are concluded within international bodies: when there are no EU agreements they must be made bilaterally and a very large number of furious consumers could be involved on both sides.

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

EU vs UK Gains & Losses. It appears that the breakdown of talks would be positive overall for the UK to the tune of a one-off gain of £38 billion on the EU budget, plus £180 billion from bringing forward the non-budgetary Brexit gains, plus £433 billion from EU tariff revenue, some £651 billion in all. For the EU it would mean a one-off loss of £38 billion in financial settlement, plus another one-off loss of £36 billion in terms of trade gain, plus the permanent loss due to paying UK tariff revenue of £433 billion. So, plus £651 billion for the UK versus minus £507 billion for the EU. For the UK, a breakdown would be a short term nuisance but a substantial economic gain; for the EU it is both - a short term nuisance and a substantial economic loss (see EFT, *The Numbers Behind No Deal*).

Indeed, the above economics suggest that a credible threat by the UK to leave in the face of an unattractive trade deal would be a powerful motivating factor for the EU to agree an attractive deal.

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In summary, the authors are positive about the outlook for Brexit.

Clearly, it is not just leaving the EU but the policies that are pursued subsequently, at home and overseas, that will be important. We have not focused here on the detail of the domestic economic policies that the UK may wish to pursue post Brexit. Suffice it to say, that these will be at the wish of the British people and their elected government.

Instead our focus has been to address the Whitehall leaks of the latest economic forecasts about Brexit, to question the negative assumptions underlying these, and to point out the positives from following through on the Government's previously stated policy to leave the single market and the customs union.

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