

2. ENDORSEMENT AND ASSESSMENT OF MACROECONOMIC FORECASTS

KEY MESSAGES

- The Council endorsed the *Budget 2017* macroeconomic forecasts to 2017. Taking into account the uncertainties and judgemental elements involved, including the possibility of a slowdown in growth this year, it was satisfied that these forecasts were within an endorsable range.
- While the forecasts for growth beyond 2017 are within a plausible range, the Council assesses that the composition of growth is overly weighted towards net exports relative to domestic demand. Larger competitiveness losses than are allowed for in the Department's forecasts are likely from 2017 onwards as the labour market tightens.
- The main risk to the macroeconomic forecasts comes from the adverse effects of Brexit. In addition to the short run impacts from exchange rates and uncertainty, the main effects will be felt in later years after the terms of exit are agreed. A "hard Brexit" would likely have a significant negative long-run impact on the Irish economy.
- Notwithstanding that the main risks centre on external conditions, important domestic risks also exist. The high degree of concentration in the Irish industrial base means that sector- or firm-level shocks could have a significant effect on future growth prospects. In addition, supply constraints in the housing sector could continue to push up prices and erode competitiveness.
- Although Brexit-related concerns have underlined the downside risks to growth, past experience also cautions against the risk of overheating. Near-term prospects are positive, despite forecasts of a moderation in growth rates from their recent high levels. If high growth rates were to continue, there is a risk of an unsustainable path for the Irish economy.
- To avoid a repeat of past failures of macroeconomic management, it is essential that the Government's forecasts for the medium term are well-founded. This requires an augmentation of the Department of Finance's current toolkit for medium-term macroeconomic forecasting. There are risks that signs of overheating will be missed if the Department continues to rely so heavily on the Commonly Agreed Methodology (CAM) for estimating potential output. While the Council recognises that work on alternative supply-side estimates has been interrupted due to the challenges posed by the recent National Accounts, further progress on developing and reporting alternatives to the CAM is necessary to improve the quality of the Department's supply-side forecasts.

2.1 INTRODUCTION

The Council's seventh endorsement exercise covers the set of macroeconomic projections in *Budget 2017*. Although the forecasts published in the Budget cover the same time horizon as *SPU 2016* (2016-2021), the focus of the endorsement exercise for *Budget 2017* is on the macroeconomic forecasts for 2016 and 2017. The timeline for the endorsement process is detailed in Appendix B.

To support the endorsement and assessment functions, the Council has continued to develop and update its suite of models, with an expanded set of tools used for both short-term and medium-term forecasting. These are essential for assessing the cyclical position of the economy as well as for understanding the economy's medium-term supply-side potential.

Section 2.2 outlines the endorsement process as it applied to the *Budget 2017* projections. Section 2.3 assesses the *Budget 2017* forecasts. Section 2.4 provides an assessment of the risks surrounding the economic outlook. A box examines some of the latest indicators and possible implications of Brexit for the Irish economy. Appendix D focuses on the implications of the 2015 National Accounts on the estimation of potential output and the output gap using the Commonly Agreed Methodology (CAM).

2.2 ENDORSEMENT OF THE *BUDGET 2017* PROJECTIONS

This section details the seventh endorsement exercise undertaken by the Council covering *Budget 2017*, outlining the Council's considerations around the time of the endorsement and the process itself (Appendix B details the timeline). Data available at the time differs from that now available for the purposes of the assessment. Additional spending on transfers of €100 million in 2016 and the larger-than-initially assumed budgetary package for 2017 (€140 million) impact on personal consumption forecasts, increasing them by 0.1 per cent in each year as set out in the Department's reconciliation table. Detailed forecasts in line with those in Annex 3 of *Budget 2017* were the basis for the endorsement exercise.

The endorsed forecasts were on a no-policy-change basis and hence did not include the impact of using the available fiscal space beyond 2017. Given that the fiscal projections in *Budget 2017* are based on using the estimated fiscal space out to 2021, having a full set of macroeconomic forecasts on the same basis would be desirable. Only forecasts for real GDP were published on an *ex post* basis in *Budget 2017* (in Tables 12 and 17).

The Council endorsed the *Budget 2017* macroeconomic projections to 2017. It was satisfied that the central scenario outlined was within its endorsable range, taking into account the methodology

and the plausibility of the judgements made. The endorsement process focuses on several key dimensions: the plausibility of the methodology used; the pattern of recent forecast errors; and comparisons with the Council's Benchmark and other projections.¹

First, focusing on the methodology used by the Department of Finance, the Council is satisfied that short-term projections broadly conform to standards set by other forecasting agencies and good practice. The Department provides detailed information on models used in the development of its forecasts for assessment by the Council. In relation to medium-term projections, significant challenges were posed by the 2015 National Accounts. If left unadjusted, using the Commonly Agreed Methodology (CAM) had the potential to give very misleading signals as to the cyclical position of the economy, which would have impacted on the application of the fiscal rules. The Council has reviewed the technical adjustments to the CAM applied by the Department of Finance following engagement with the European Commission. The Council is satisfied that they reflect an appropriate response to the challenges caused by the revised National Accounts data. The Council notes that work on alternative supply-side estimates may have been interrupted due to the challenges raised by the recent National Accounts. Further progress on developing and reporting alternatives to the CAM is necessary to improve the quality of the Department's supply-side forecasts.

Second, in terms of the pattern of errors in recent Department of Finance forecasts, the Council has in previous reports highlighted some evidence of systematic bias related to the domestic and external split of aggregate demand. As detailed in the June *Fiscal Assessment Report*, the previously observed systematic bias appears to have diminished in more recent periods. The Council will continue to monitor the Department's forecast errors in future for the presence of any such bias.

Third, comparisons with the full set of IFAC Benchmark projections showed a larger deviation from the Department's forecasts than in previous endorsement rounds, both in aggregate and across the components of growth. The Department's estimates for growth in 2016 and 2017 were assessed to be within an endorsable range, despite being somewhat higher than the IFAC Benchmark projections. Most of this difference can be accounted for by the difference in forecasts for net exports, although it can also be seen as reflecting the Council's somewhat greater emphasis on the use of information from quarterly data. The Department's forecasts were in line with consensus forecasts available at the time. In terms of composition, the Council's Benchmark forecasts projected a larger contribution to growth from domestic demand from 2018-2021 than in the

¹ The IFAC Benchmark projections are prepared by the Secretariat for the endorsement exercise.

Department of Finance forecasts. The Department’s projections for the GDP deflator were also somewhat lower than IFAC’s Benchmarks.

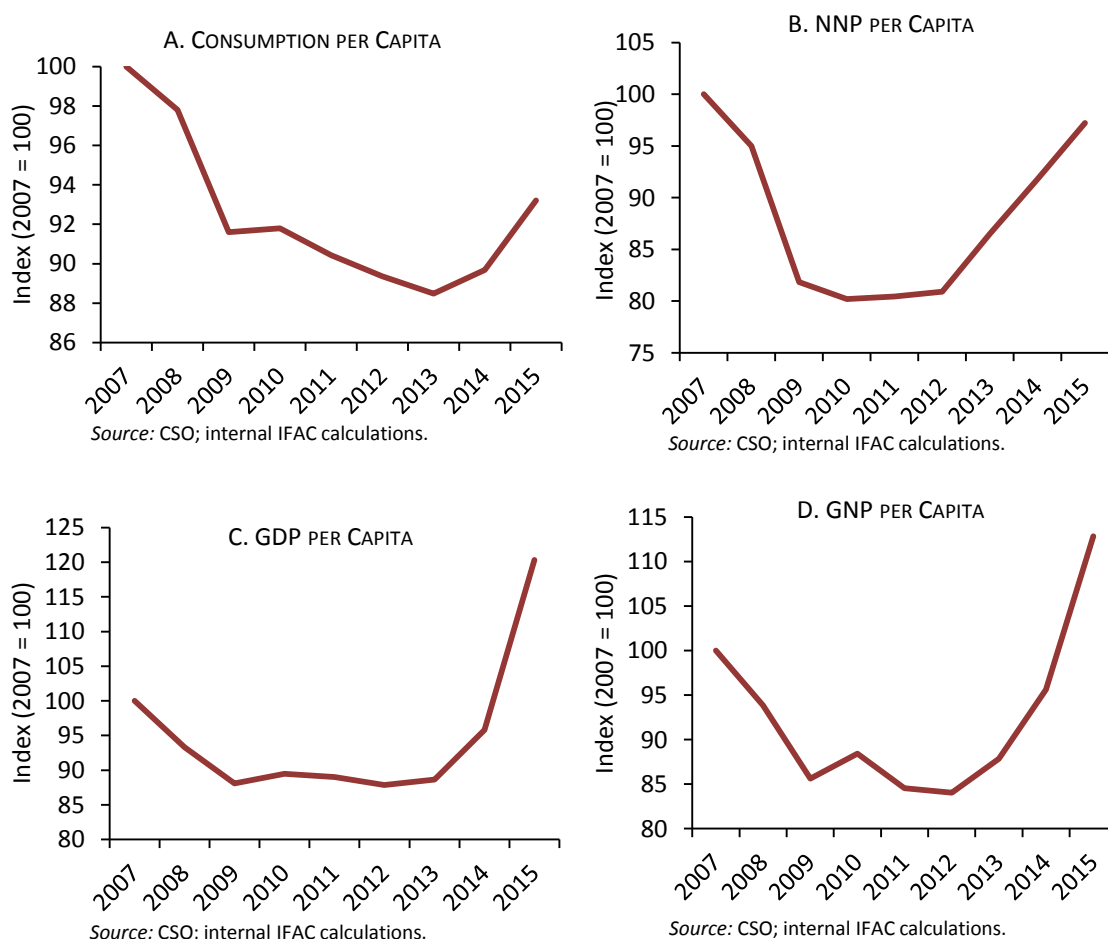
2.3 AN ASSESSMENT OF THE MACROECONOMIC FORECASTS IN *BUDGET 2017*

2.3.1 MACROECONOMIC CONTEXT

Official estimates of GDP and GNP growth overstate the true rate of improvement in the Irish economy for 2015. More informative indicators suggest that the economy grew by 5-6 per cent last year, much slower than the measured growth in GDP and GNP. Growth appears to have slowed somewhat in the year to date with underlying investment² acting as a drag on growth.

Figure 2.1 uses several indicators to examine the Irish recession and subsequent recovery. In each case, the base level is the peak of Irish output (2007). It is worth noting, however, that this level was not sustainable with one estimate putting the output gap at 10 per cent of potential GDP in 2007 (IMF, 2016).

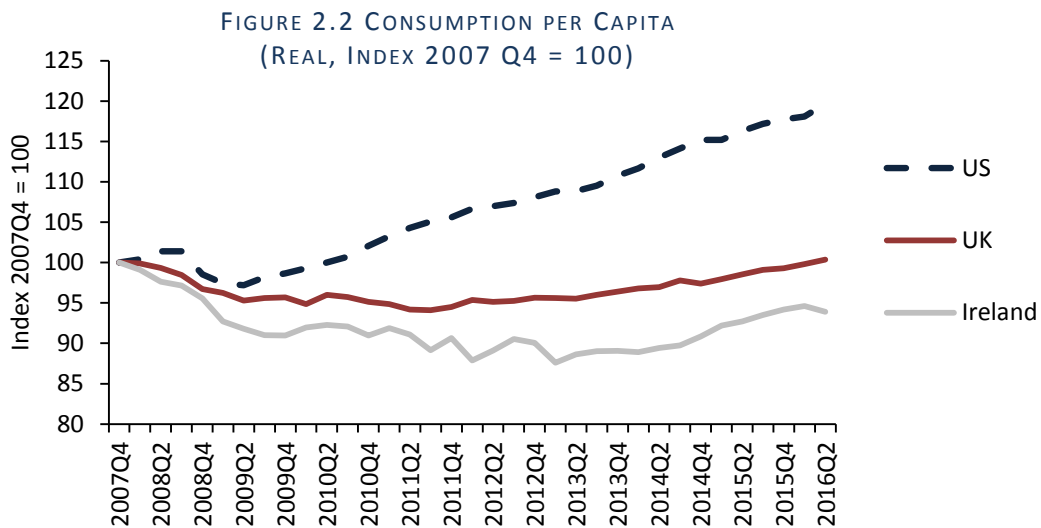
FIGURE 2.1: INDICATORS OF ECONOMIC ACTIVITY (CONSTANT PRICES)



² Underlying investment refers to all investment apart from that in aircraft and intangible assets, which are mainly imported and hence GDP neutral.

Looking at the four indicators, it is clear that there are conflicting signals with regard to the recent performance of the economy. Panel A shows real consumption per capita. This metric only captures one part of the economy, but does give some indication of the evolution of living standards. Another useful indicator, shown in panel B, is Net National Product (NNP) per capita. This measure includes most activities in the economy, and it is less distorted for Ireland in 2015 than GDP and GNP. This is because it excludes depreciation (which jumped in 2015, linked to the dramatic increase in the capital stock). Both of these measures show severe losses in consumption/output in the crisis with recoveries taking place in the past couple of years. Despite the recent growth, both measures still lie below their pre-crisis peaks. Looking at GDP and GNP per capita, there were significant falls in both of these measures after 2007. In 2014 the per capita level of both remained below their pre-crisis peaks. Distortions in the National Accounts mean that both GDP and GNP per head are now well above their 2007 levels and do not accurately portray the recent recovery.

To examine how the Irish recession/recovery stands internationally, Figure 2.2 shows consumption per capita for Ireland, compared to the UK and US. We can see that consumption per capita fell further than the UK or US post-crisis and has performed worse overall in this period. The relatively poor performance of Irish consumption over this period may be partially due to deleveraging, with households prioritising debt reduction rather than increased consumption.



Source: CSO, Eurostat, FRED database and Internal IFAC calculations.

Previous *Fiscal Assessment Reports* have noted the role played by favourable external conditions in driving much of the recovery in the Irish economy from 2012-2015. In particular, 2015 saw

reasonable growth in Ireland's key trading partners, favourable exchange rates,³ low oil prices and accommodative monetary policy. These factors led to strong contributions from trade (abstracting from the exaggerated effects of the activities of some multinational enterprises (MNEs)). In the aftermath of the UK's vote to leave the European Union and developments in the United States, future external conditions look both more uncertain and unfavourable than previously assumed. There has already been a significant appreciation of the Euro against Sterling, while future growth prospects for the UK have been revised down substantially (see Box B for details). Although neither are key export markets for Ireland, growth in Japan remains subdued and concerns remain over credit growth in China.⁴ More generally, global trade growth has slowed in recent years, only barely keeping pace with economic growth.

2.3.2 BUDGET 2017 SHORT-TERM FORECASTS, 2016-2017

The *Budget 2017* forecasts indicate that last year's strong **personal consumption** growth is expected to moderate somewhat in 2016 and 2017 (see Table 2.1 for a summary of *Budget 2017* forecasts). Models based on disposable income (as used by the Council to produce its Benchmark forecasts) would suggest the Budget forecasts are reasonable. In addition, given the pattern of revisions in previous years, there may be upward revisions to previous quarters which would bring consumption into closer alignment with employment and income data seen this year. The high-frequency data on retail sales and car sales are also broadly supportive of a positive outlook, despite some recent weakening.

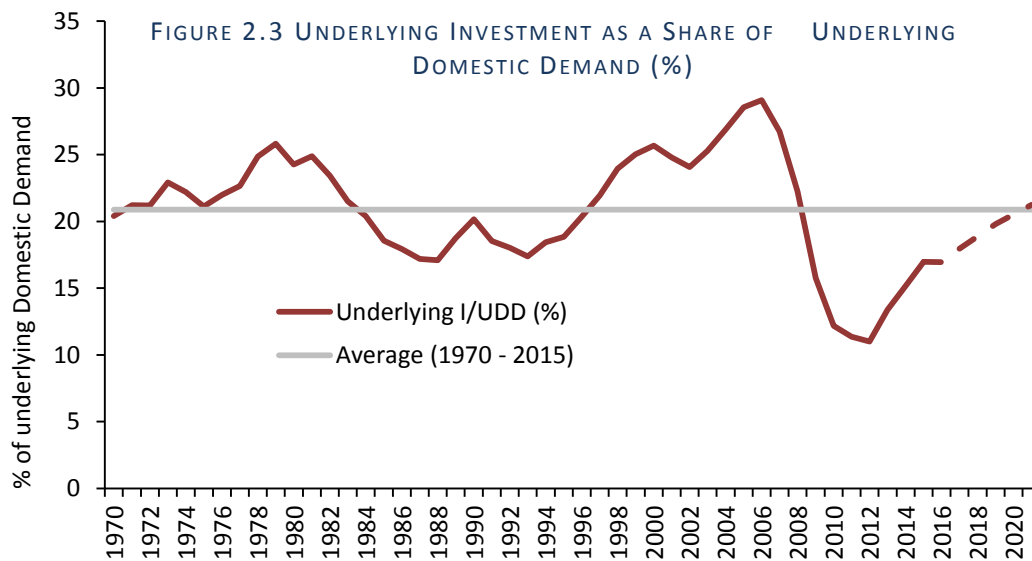
Notwithstanding that the trend of **investment** growth was overstated in the headline figures for 2015 due to strong growth in intangibles, there was also strong underlying growth.⁵ This was mostly driven by machinery and equipment (excludes aircraft) and commercial construction. In previous *Fiscal Assessment Reports*, the underlying investment to GDP or GNP ratio was examined as a yardstick of current investment levels relative to historical standards. Using GDP or GNP is less informative due to the step change in the National Accounts for 2015. With this in mind, Figure 2.3 shows underlying investment as a percentage of underlying domestic demand. When using this denominator, the Department of Finance forecasts indicate that underlying investment will return to its historical average only at the end of the forecast horizon.

³ The Euro depreciated by 16.5 per cent against the Dollar and 10 per cent against the Pound Sterling compared to 2014.

⁴ IMF (2016) notes that "the [Chinese] economy's dependence on credit is increasing at a dangerous pace". pg 33

⁵ Much of this is accounted for by imported patents, although in some instances intangible investment takes the form of R&D services.

The building and construction sector is forecast to grow substantially this year, albeit still from a relatively low base. Byrne *et al.* (2014) estimate 25,000 dwellings per annum are required to meet demand due to demographics and new household formation. The level of housing completions has been around half the estimated requirement since 2010.⁶ There is now a significant amount of pent-up demand, but there has been a limited supply response thus far. This suggests that structural factors are impairing the supply side of the market. If these factors were removed (credit availability for builders, planning regulations, etc.) there could be a faster pick-up in completions to meet demand. On balance, however, the Council assesses that the Department’s forecast of 25,000 completions in 2019 is optimistic given the limited observed supply response.



Note: Both Underlying measures exclude investment in aircraft and intangibles. There is limited reliable data on aircraft investment pre-1997, it is likely to be small and is assumed to be zero here for illustrative purposes. For intangibles, there are no data for R&D investment pre-1995, so this aspect of intangible investment is also assumed to be zero pre-1995. Dashed line represents Budget 2017 forecasts. Sources: CSO, Budget 2017 and internal IFAC calculations.

Government consumption has grown much faster than anticipated in the first half of this year, up 5 per cent on the same period last year. Budget 2017 forecasts a 5.9 per cent expansion in government consumption for the year. This implies strong growth in the second half of the year, albeit this is made more likely by the €540 million increase in voted spending which will be accounted for in the second half of the year.⁷

Export growth was mainly responsible for the large upward shift in GDP for 2015. While goods exports in the National Accounts rose by 71 per cent, those recorded in the monthly trade data

⁶ Budget 2017 forecasts completions to reach 25,000 in 2019.

⁷ This is made up of €500 million for the Department of Health and €40 million for the Department of Justice.

increased by 21 per cent.⁸ The forecasts in *Budget 2017* are for exports to grow in line with external demand from Ireland's main trading partners. This approach is sensible and is in line with the Council's application of its suite of models in this forecasting round. However, it should be noted that the base incorporates the surge in contract manufacturing-related exports in 2015 and this base is carried forward into the forecast years without assuming any increase or decrease. While external conditions were very favourable last year, the outlook is now both more uncertain and more negative, primarily due to Brexit. There has already been a substantial appreciation of the Euro against Sterling this year. In addition, expected trading partner growth has been impacted by downward revisions to UK growth forecasts. **Import** growth is also set to slow significantly in the Department's projections, from a very high base.

TABLE 2.1: *BUDGET 2017* MACROECONOMIC FORECASTS (TO 2017)

<i>% change in volumes unless stated</i>	2014	2015	2016	2017
GDP	8.5	26.3	4.2	3.5
GDP Deflator	-1.2	4.9	-1.3	1.0
Nominal GDP	7.2	32.4	2.8	4.5
GNP	9.2	18.7	7.5	3.3
Consumption	1.7	4.5	3.3	2.9
Investment	18.2	32.7	15.8	6.0
Government	5.4	1.2	5.9	2.4
Exports	14.4	34.4	3.6	4.5
Imports	15.3	21.7	5.9	5.1
Stock Changes (pp contribution)	1.3	-0.8	0.1	0.0
Current Account (% of GDP)	1.7	10.2	9.4	8.2
Employment	1.7	2.6	2.6	2.1
Unemployment Rate	11.3	9.5	8.3	7.7
Inflation Rate (HICP)	0.3	0.0	-0.1	1.3
Nominal GDP (€ billions)	193.2	255.8	263.1	275.1

Sources: CSO and Department of Finance (*Budget 2017*).

Budget 2017 forecasts real **GDP** growth of 4.2 per cent this year, followed by a 3.5 per cent expansion in 2017. While the first half of 2016 saw GDP 4 per cent higher than the first half of 2015, the quarterly pattern of growth is less encouraging. The carryover⁹ for 2016 now stands at only 2.1 per cent, reflecting the weak quarter-on-quarter growth recorded in the first half of this year and the strong growth recorded in the second half of 2015. With this in mind, an average quarter-on-quarter growth rate of 2.8 per cent would be needed in the second half of the year to

⁸ Both are in nominal terms. While there has often been a substantial gap between goods exports in the National Accounts and those recorded in the merchandise trade data, up until recently these differences had been broadly GDP neutral, as there had been corresponding increases in imports of royalties (see Box A, IFAC (2016b)).

⁹ The carryover effect refers to the annual 2016 growth rate that would be observed if seasonally adjusted real GDP remained unchanged at its Q2 2016 level for the remaining two quarters of this year.

be consistent with the Department's 4.2 per cent forecast for annual GDP growth in 2016 (Table 2.1). Conversely, the forecasts also imply that there would be no quarter-on-quarter growth in 2017 needed to achieve the 3.5 per cent growth forecast in *Budget 2017*. Despite the Quarterly National Accounts being highly volatile, it seems unlikely that there would be such a dramatic change in the quarterly pace of growth¹⁰. The Council note that the Quarterly National Accounts are subject to heavy revision and hence are a noisy indicator. However, useful information in the quarterly data should be used help inform forecast judgment.

TABLE 2.2: IMPLIED AVERAGE QUARTER ON QUARTER GROWTH RATES

	2014	2015	2016	2017
<i>Budget 2017</i>	2.6	6.6	2.8	0.0

Source: *Budget 2017* and Internal IFAC calculations.

Notes: 2014 and 2015 figures refer to the average quarter-on-quarter growth rate in those years. 2016 refers to the growth rate required in the final two quarters of 2016 needed to achieve the 4.2 per cent growth forecast in *Budget 2017*. The 2017 figure refers to the average quarter-on-quarter growth needed to achieve the forecast 3.5 per cent growth assuming constant growth in the second half of 2016.

There is a much stronger forecast for growth in **GNP**, with 7.5 per cent growth this year and 3.3 per cent in 2017. This reflects that net factor flows are forecast to contract this year (in absolute terms) and expand again in 2017.

The **GDP deflator** grew strongly in 2015, driven by terms of trade effects. These effects were mainly as a result of the depreciation of the Euro, most importantly against the Dollar and Sterling. In 2016 there have already been strong reversals of these terms of trade effects, with the appreciation of the Euro against Sterling having a considerable impact. With this in mind, *Budget 2017* forecasts of negative growth for the GDP deflator this year seem reasonable. With limited exchange rate movements assumed thereafter, in accordance with standard practices, the deflator is driven by domestic elements from 2017-2021.

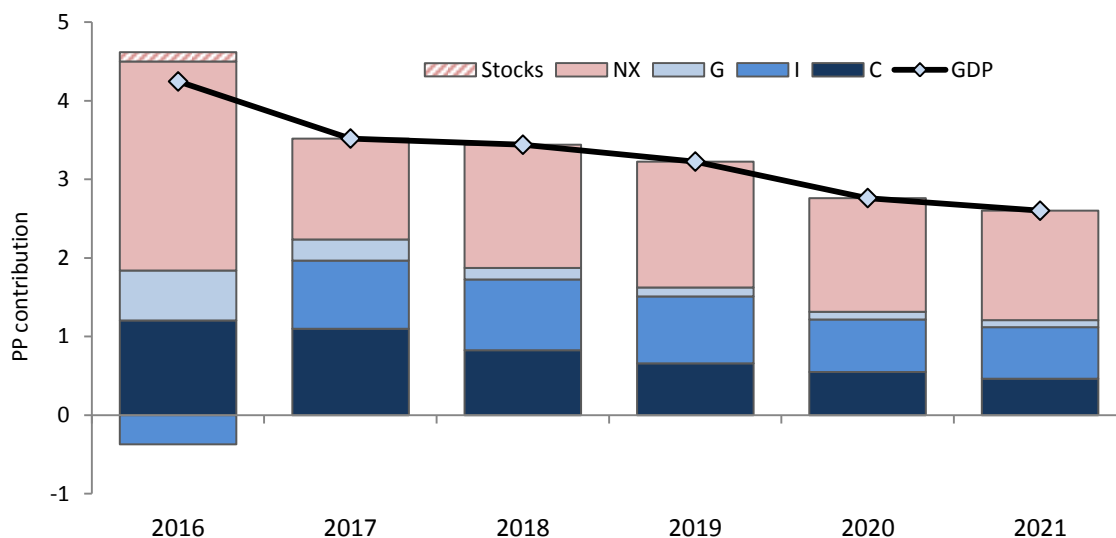
2.3.3 ANALYSIS OF CONTRIBUTIONS TO GROWTH IN *BUDGET 2017*

Figure 2.4 shows the underlying contributions to GDP growth in *Budget 2017*. For 2016, growth is driven by underlying net exports along with personal and government consumption, with a negative contribution from underlying investment. For 2017, the lower forecast growth rate is mainly due to a falling contribution from underlying net exports¹¹. In the outer years of the forecast, underlying net exports continue to make sizeable contributions to growth. The declining growth rates in 2019-2021 are mainly due to falling contributions from the domestic sector.

¹⁰ It may also be that data for past quarters are revised and hence the forecast annual growth rates are achieved with a different quarterly profile.

¹¹ See Box C in IFAC (2016A) for details on underlying net exports and domestic demand contributions.

FIGURE 2.4 BUDGET 2017 UNDERLYING CONTRIBUTIONS

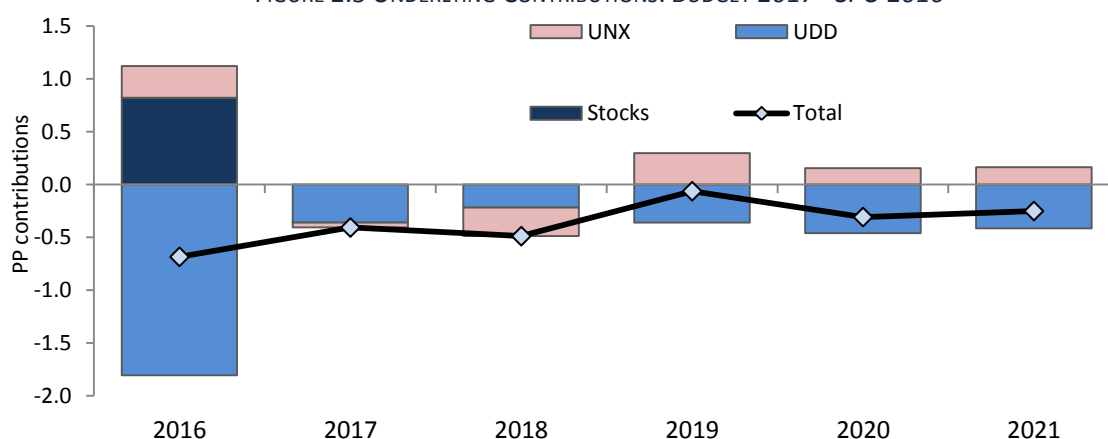


Sources: Budget 2017; CSO and internal IFAC calculations.

Notes: "Underlying" measures of investment and net exports strip out intangibles and aircraft purchases in full as these are, in the main, imported, with little impact on real GDP.

Figure 2.5 examines the revisions in the forecasts of these underlying contributions since *SPU 2016* in April. The largest revisions are for this year, with the contribution from underlying domestic demand revised down sharply. Underlying net exports are now forecast to contribute slightly more strongly this year. The increased base of underlying net exports in 2015 is partially responsible for this.¹² In the other years, the revisions are much smaller with the contribution from underlying domestic demand revised down in every year. In contrast, the contribution from underlying net exports has been revised up marginally in the final three years of the forecast.

FIGURE 2.5 UNDERLYING CONTRIBUTIONS: BUDGET 2017 - SPU 2016



Sources: Department of Finance; CSO; internal IFAC calculations.

Notes: "Underlying" measures of domestic demand and net exports strip out intangibles and aircraft purchases in full as these are, in the main, imported, with little impact on real GDP.

¹² Arithmetically, if one increases a base level of a component of GDP and maintains the projected growth rate, then the contribution to growth from that component will increase.

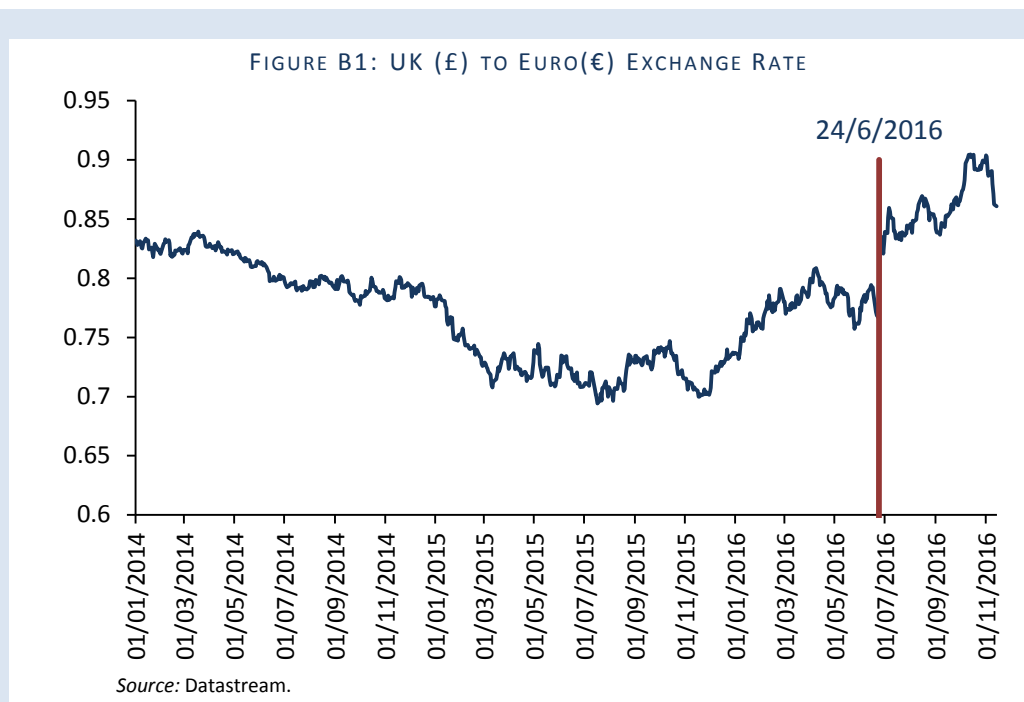
BOX B: BREXIT: LATEST INDICATORS AND POSSIBLE IMPLICATIONS FOR THE IRISH ECONOMY

The UK vote to leave the EU is set to have a significant impact on the Irish economy given the extent of the trade links between Ireland and the UK. While the longer term issues surrounding the terms of a UK exit from the EU will remain unknown for some time, this Box collates some of the early indications of the impact of Brexit on the UK and Irish economies. The Box draws on analysis of the potential impact of Brexit on the Irish economy published in the Council's September 2016 *Pre-Budget Statement*.

It will take some time to accurately see the impact the vote to leave the EU has on the UK economy; however some early indicators of the short run impacts are available. The most recent quarterly data from the Office of National Statistics (ONS) show that growth slowed in the third quarter of this year, from 0.7 per cent to 0.5 per cent. Growth was entirely driven by the services sector, with the other three sectors (construction, agriculture and production) all registering declines. While there is no evidence of significant immediate falls in GDP, the main effects of Brexit are expected to take hold from 2017 and beyond. The significant depreciation of Sterling is cushioning the fall in UK output, at least in the short term.

The most obvious and immediate impact of Brexit on the Irish economy has come via exchange rates. There was some weakening of Sterling in the first half of this year in advance of the referendum. This was followed by a 6 per cent fall the day after the referendum and there have been significant falls since, particularly after the UK Prime Minister announced that Article 50 would be invoked by the end of March 2017 (Figure B1). The current rate implies an almost 20 per cent appreciation of the Euro against Sterling compared to the average value in 2015.¹³ If the exchange rate were to stay near this level for a prolonged period, this would imply a significant competitiveness loss for Irish firms. Keeping all other factors constant, it would be expected that Irish imports rise and exports fall as a result of these exchange rate movements. Future changes in the exchange rate are difficult to forecast, although it seems likely that the exchange rate will be significantly more volatile over the next couple of years as negotiations over the terms of Brexit take place. In addition to the competitiveness difficulties caused for Irish firms, a more volatile exchange rate will also be problematic for Irish firms.

¹³ The current rate is taken at 15 November 2016.



Prior to the referendum, forecasting agencies had warned that the growth prospects of the UK would deteriorate significantly if it were to leave the EU. Recent forecasts have reaffirmed this, with the IMF (2016) cutting its forecast of growth in 2017 by more than a percentage point, with reductions between 0.5pp and 0.2pp thereafter out to 2021. Cumulatively, these revisions would imply UK economic output being 2.5 per cent lower than previously forecast. Significantly for the Irish economy, the forecast growth in imports of goods and services was revised down to a much greater extent than the forecast for overall GDP, with imports into the UK in 2021 forecast to be 11 per cent lower than was forecast in April 2016. Most of this downward revision comes in 2017. Given that 17 per cent of Irish exports go to the UK, this reduced demand for imports into the UK, combined with a less favourable exchange rate would have a significant impact on the Irish economy.

While the central forecast scenarios of agencies such as the IMF and Bank of England are a useful guide as to what the potential impacts of Brexit could be, the ultimate effect is uncertain and hence alternative scenarios are considered. The Council previously presented (IFAC 2016b) two scenarios illustrating the potential impact of Brexit on the Irish economy. The first scenario (Baseline) considered the short-run impact of subdued demand from the UK, exchange rate effects and uncertainty on the Irish economy. These factors combined would see growth reduced by 0.7 percentage points in 2017 and 0.3 percentage points in 2018. As discussed above, compared to *SPU 2016* forecasts, the Department of Finance revised down growth in *Budget 2017* by a similar magnitude for 2017 and 2018.

The Baseline scenario was based on forecasts for the UK economy published by the National Institute for Economic and Social Research in August 2016. The latest NIESR forecasts published in early November 2016 do not contain any major changes to the outlook for 2017 and 2018 compared to the August forecasts and so the Council's Baseline scenario remains unchanged.

Brexit could have significant implications for medium-term growth in the UK economy. The most likely channels through which this would occur would be reduced FDI and trade, both

of which would contribute to lower productivity growth. Permanently lower UK output growth would be expected to give rise to persistently lower demand for Irish. In addition, smaller trade flows between Ireland and the UK could reduce potential supply in the Irish economy by lowering aggregate productivity. This would in turn reduce Irish potential growth rates.

Prior to the referendum, HM Treasury (2016) estimated the long run impact of different post-Brexit trade arrangements on the UK economy. The most adverse scenario shown is a WTO arrangement. Under this scenario, UK GDP would be 7.5 per cent lower after 15 years compared to a baseline where the UK remained in the EU. Similarly, NIESR (2016a) show a number of different scenarios for how Brexit could impact the UK economy out to 2030. Similar to the HM Treasury result, the most adverse NIESR scenario (WTO and an associated loss in productivity) has GDP 7.8 per cent lower by 2030 compared to the baseline. Output losses of this magnitude would clearly have a significant impact on Irish growth prospects.

The second scenario presented in the *Pre-Budget Statement* considered an adverse case where Brexit resulted in a persistent reduction in the potential growth rate of the Irish economy of 0.5 percentage points per annum over a ten-year period. While not a forecast, it is possible that such a scenario could come about if the UK opts for a “hard Brexit” outcome along the lines of a WTO arrangement, with particularly adverse effects for the Irish indigenous sector. Chapter 3 includes a discussion of the implications of these macroeconomic impacts on the public finances.

In a recent ESRI working paper, Bergin *et al.* (2016) model the medium- to long-term impacts various Brexit scenarios could have on the Irish economy. The three scenarios used are taken from NIESR: firstly, an EEA arrangement similar to that applying between Norway and the EU; secondly, a free trade agreement along the lines of that between Switzerland and the EU; and finally, a WTO arrangement. In each case, growth in the UK (and other economies which are indirectly affected by Brexit) is lower than would otherwise be the case, leading to lower demand for Irish exports. Each of these scenarios is then used as exogenous inputs into COSMO. In the most severe case presented (WTO), Irish output is 3.8 per cent lower than would otherwise be the case ten years after the UK leaves the EU. This estimate is somewhat more benign than the IFAC adverse scenario presented above. This is mainly because the ESRI scenario is only taking into account the reduced demand for Irish exports, with no formal role for trade disruption in excess of that caused by lower growth externally or for domestic uncertainty effects.

2.3.4 BUDGET 2017 MEDIUM-TERM FORECASTS, 2018-2021

Given the scale of the revisions to the National Accounts since *SPU 2016*, the estimation of potential output is now more difficult. This is because the key input data (such as GDP growth and the level of the capital stock) used in estimation of potential output are distorted as a measure of underlying activity. It is of little surprise that there have been substantial revisions to estimates of potential output growth and, to a lesser degree, the output gap in *Budget 2017* relative to *SPU 2016* (Figure 2.6 and Table 2.3). The approaches employed by the Department of Finance in *Budget*

2017 to deal with these issues (as described in Appendix D) are designed to minimise the effect of the revised National Accounts on estimates of the output gap. The approach taken leads to a spike in potential output growth in 2015 to match that of real GDP, in order to keep the output gap similar to the previous estimate published in *SPU 2016*. Revisions to the implementation of the methodology succeed in producing an output gap which is largely unchanged from *SPU 2016*. There are substantial differences in the output gap produced for 2014; but the differences in the later years - which are important in terms of guiding future policy decisions - are relatively minor.

While the focus in this *Budget* forecasting round has been on dealing with the large revision to the National Accounts, it is worth examining the plausibility of the estimates of potential output growth and the output gap as they now stand. A positive output gap (1.9pp) is estimated for this year, gradually falling to zero in 2021. Looking at a range of imbalance indicators and alternative models of potential output, it seems unlikely that there is substantial overheating in the Irish economy as suggested by this positive output gap.

Although not very apparent from Figure 2.6, potential output growth has been revised down considerably from *SPU 2016*, particularly in 2016, 2017 and 2020.¹⁴ There may be good reasons to think the potential growth rate of the Irish economy in these years is now lower than estimated in April (due to Brexit or other events). However, this downward revision is mainly due to lower forecasts of actual real GDP growth. This again highlights an undesirable feature of the CAM; it tracks actual growth (or forecast actual growth) very closely, rather than providing a robust measure of potential output.

Despite being the official methodology for fiscal surveillance by the European Commission, the CAM has many problems in estimating the cyclical position of the Irish economy, which have been highlighted both in previous *Fiscal Assessment Reports* and by the Department of Finance itself. As a result of this, previous *Fiscal Assessment Reports* have emphasised the need for complementary supply-side methodologies to be developed by the Department. The Council recognises that the scale of the challenges created by the revised National Accounts data has interrupted work on alternative supply-side estimates. Despite this, further progress on developing and reporting alternatives to the CAM is necessary to improve the quality of the Department's supply-side forecasts.

¹⁴ Table 2.3 shows that growth in potential has been revised down by 1.1pp in 2016, 0.8pp in 2017 and 0.4pp in 2020. Forecasts of real GDP have been revised down by 0.7, 0.4 and 0.3 percentage points respectively.

FIGURE 2.6: VINTAGES OF MEDIUM-TERM PROJECTIONS

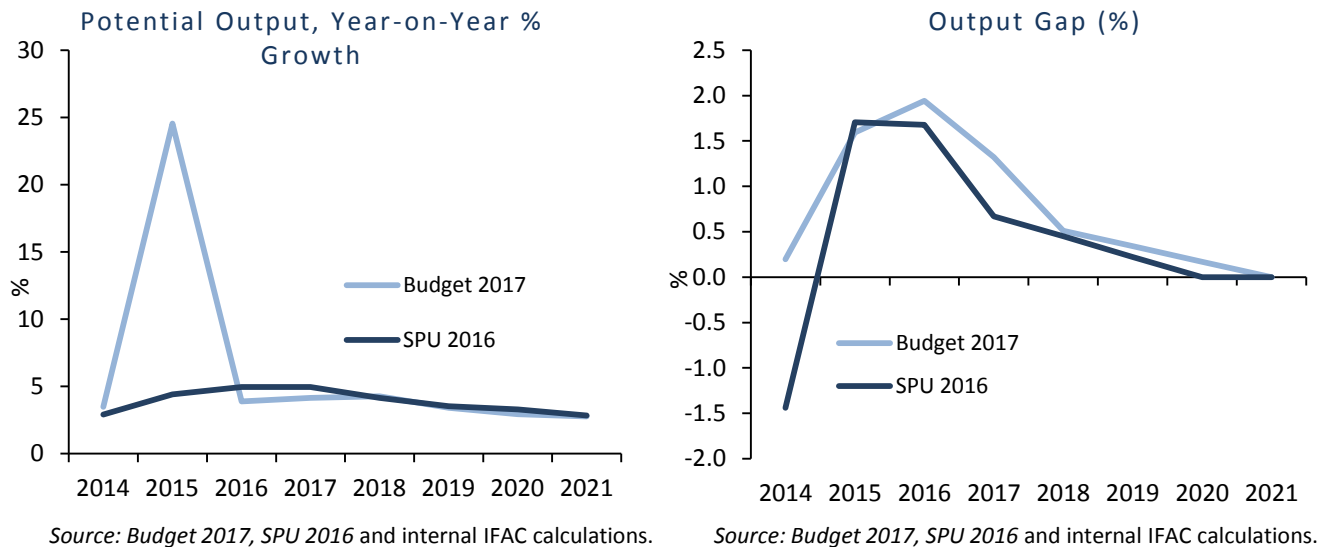


TABLE 2.3: MEDIUM-TERM DEMAND AND SUPPLY-SIDE FORECASTS

	% change	2015	2016	2017	2018	2019	2020	2021
Budget 2017	Real GDP Growth	26.3	4.2	3.5	3.4	3.2	2.8	2.6
	Potential GDP Growth	24.5	3.9	4.2	4.3	3.4	2.9	2.8
	Output Gap (% potential GDP)	1.6	1.9	1.3	0.5	0.3	0.2	0.0
SPU 2016	Real GDP Growth	7.8	4.9	3.9	3.9	3.3	3.1	2.9
	Potential GDP Growth	4.4	5.0	5.0	4.2	3.5	3.3	2.8
	Output Gap (% potential GDP)	1.7	1.7	0.7	0.4	0.2	0.0	0.0

Source: Department of Finance.

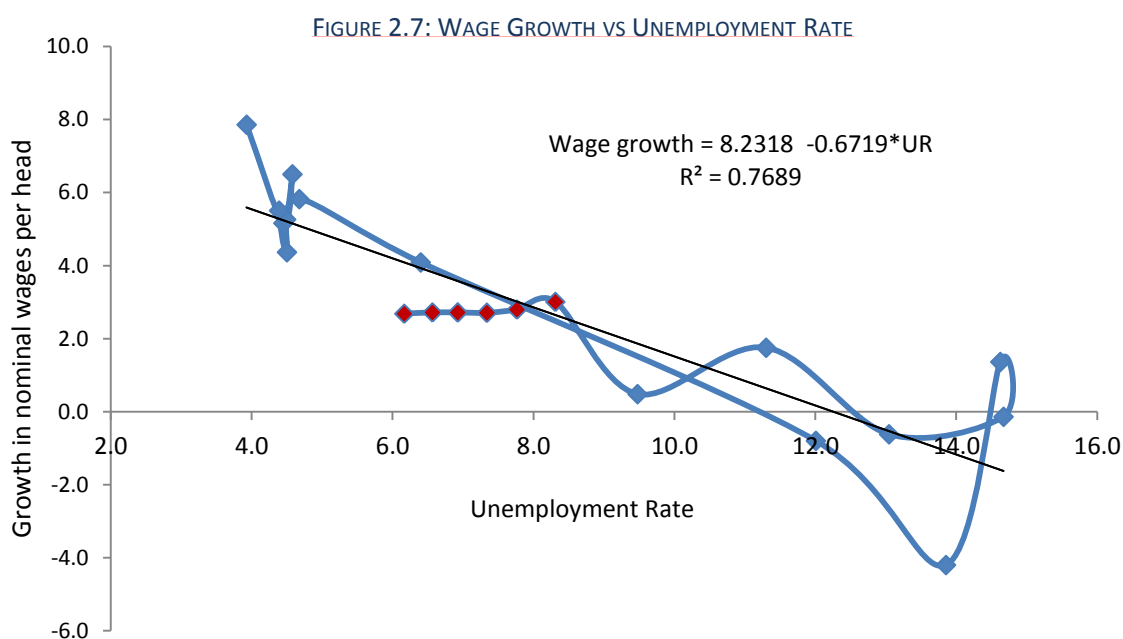
Notes: The forecasts for Budget 2017 are on an ex ante basis, taken from Annex 3.

While the medium-term outlook for overall GDP growth is within a plausible range, the balance of domestic and external sources of growth in the outer years of the forecast is problematic.

Underlying net exports are forecast to continue contributing substantially to growth throughout the forecast period. By contrast, contributions from underlying domestic demand shrink somewhat from 2017 onward (see Figure 2.4).¹⁵

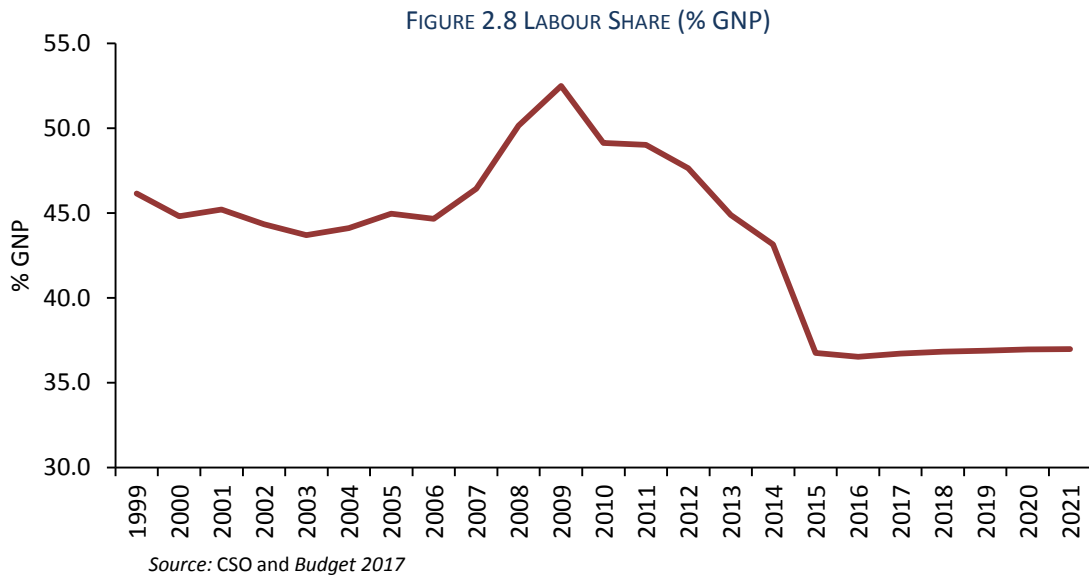
¹⁵ These forecasts are taken from Annex 3 of Budget 2017 and are on a no-policy-change basis. Ex post forecasts are published in Table 12 and Table 17 of the Budget for GDP but none of its components.

Given that the unemployment rate is forecast to fall substantially, the forecast wage growth is rather modest. This modest wage and consumption growth means that consumption per capita in 2021 is forecast to remain below its peak (2007) level. Real wage growth is forecast to be slightly below productivity growth from 2018 to 2021. Given that the labour market is forecast to tighten throughout the forecast period, one might expect that wage growth would accelerate, rather than remain largely flat, as forecast by the Department of Finance. Historically, it has been the case that lower unemployment rates are associated with stronger wage growth (Figure 2.7), but this does not appear to be the case in *Budget 2017* forecasts.



Source: *Budget 2017*, internal IFAC calculations.
 Note: *Budget 2017* forecast values (2016 - 2021) in red.

An alternative view of the medium term to that in *Budget 2017* might see the overall balance of growth weighted more towards underlying domestic demand with underlying net exports making smaller, albeit still significant, contributions to growth out to 2021. This would also be consistent with stronger wage growth as the labour market tightens, leading to some erosion of competitiveness. Such growth would also reflect considerable pent-up demand following prolonged low investment and subdued consumption growth as evident during the crisis. This would lead to an increase in the labour share in the economy. By contrast, *Budget 2017* forecasts the labour share to remain largely flat at historically low levels (Figure 2.8).



While ascertaining the current cyclical position of the economy is difficult, a broad range of indicators can be used to look for signs of overheating or unsustainability (see Appendix C). The Budget forecasts unemployment to be over 8 per cent on average this year. It is not clear what unemployment rate is consistent with stable inflationary pressures in Ireland. The Department's only anchor in this regard is the CAM-based NAWRU¹⁶ estimates, which tend to track actual unemployment quite closely. Despite this uncertainty, there are grounds to believe that the NAWRU lies below both the current unemployment rate of 8 per cent and the current CAM estimate of 9.2 per cent. The year to April 2016 saw net inward migration for the first time since 2009, which could significantly boost labour supply in future years.

Traditionally, the current account has been a key metric to monitor for signs of imbalance in the Irish economy. Previously there were issues with the current account surplus being artificially inflated due to the redomiciling of PLCs; however it was possible to correct for this distortion and report an underlying measure. Along with the publication of the 2015 National Accounts, there were substantial revisions to the current account, with the surplus being revised up substantially in line with the headline trade balance. These distortions appear more severe than was previously the case and are not only confined to redomiciled PLCs. Unfortunately, these distortions are not easily corrected for, and as such it is impossible to assess with certainty if the "true" current position.

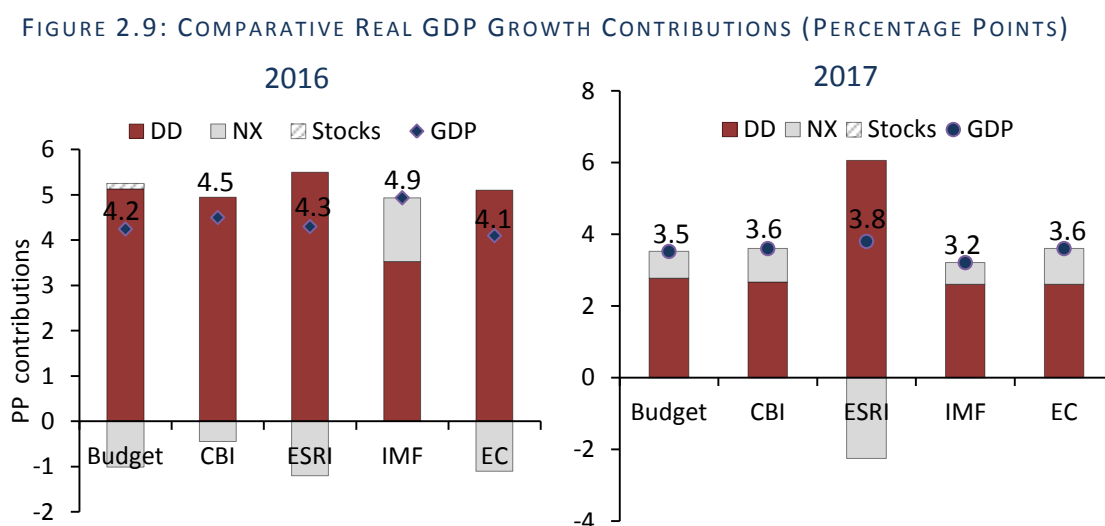
¹⁶ NAWRU stands for non-accelerating wage rate of unemployment and is a measure intended to capture the unemployment rate at which wage growth is stable.

Looking at domestic factors for imbalances, investment ratios are shown in Figure C.3. Although headline investment appears to be above its historical average as a percentage of GDP, this is mainly driven by investment in aircraft and intangible assets. A more useful indicator of potential imbalance from investment would be evident from an analysis of building and construction activity. Despite some modest increases in the last few years, output in this sector remains well below historical averages and the unsustainable pre-crisis highs.¹⁷ Looking at credit indicators, very different pictures emerge when looking at the adjusted and unadjusted credit-to-GDP levels.¹⁸ The adjusted credit-to-GDP level has continued to fall, reflecting continued deleveraging by Irish households and firms. The investment and credit ratios must be interpreted with caution given the problems with measured GDP.

Taking all these factors into account and keeping in mind the uncertainties surrounding the cyclical position of the economy, it would appear that the economy is currently operating fairly close to its potential level. This situation could change quite rapidly, however, with economic activity forecast to grow relatively strongly in coming years and unemployment continuing to fall.

2.3.5 FORECASTS OF OTHER AGENCIES

Most forecasting agencies envisage real GDP growth slowing down significantly as forecast in *Budget 2017* over the near term. For 2016, all agencies forecast growth to be mainly due to domestic demand. There are some compositional differences for 2017, with the ESRI forecasting a negative net export contribution (Figure 2.9).



¹⁷ Even when using alternative denominators, investment in building and construction remains low by historical standards.

¹⁸ The adjusted series excludes firms engaged in financial intermediation activities, and only includes Irish resident private sector enterprises as well as households.

Sources: *Budget 2017*; ESRI (*Quarterly Commentary Autumn 2016*); IMF (*World Economic Outlook, October 2016*); Central Bank *Quarterly Bulletin 4, October 2016*; and European Commission (*European Economic Forecast, Autumn 2016*).

Note: All contributions are on a headline basis to ensure comparability across institutions.

2.4 RISKS

While the near term prospects for the Irish economy remain relatively positive, substantial risks surround this central forecast. In 2013 and 2014 in particular, a number of external factors became more favourable. Exchange rates boosted competitiveness; a looser monetary policy stance helped a strained credit environment; oil prices remained low; and there was some demand growth in Ireland's major trading partners. Over the coming years many of these factors may reverse. Given the open nature of the Irish economy, each of these changes to the external environment could have a sizeable impact on the economy.

Table 2.4 below shows the macroeconomic risks identified in *Budget 2017* along with the Department's assessments of relative likelihoods and impacts. This table also includes an assessment from IFAC on each of the risks identified. Overall, the *Budget 2017* risk matrix presents a comprehensive list of the main macroeconomic risks. *Budget 2017* notes that "the balance of risk to the baseline forecast are firmly tilted to the downside". This is consistent with the Council's assessment.

A risk which is not identified in *Budget 2017* is that monetary policy could be inappropriate for Ireland. With output growth and inflation in the Euro Area remaining subdued, accommodative monetary policy looks set to continue.¹⁹ While this loose monetary policy stance has been helpful for Ireland in recovering from a deep recession, there is a risk that monetary policy could soon be looser than would be ideal for Ireland. The recent crisis showed the impact that inappropriate monetary policy can play in amplifying the business cycle. With this in mind, domestic policy (fiscal and macroprudential) may need to play an active role to prevent overheating in the economy (see FitzGerald, 2010).

¹⁹ Forecasts for inflation were revised down while forecasts for output were relatively unchanged in the recent World Economic Outlook of the IMF.

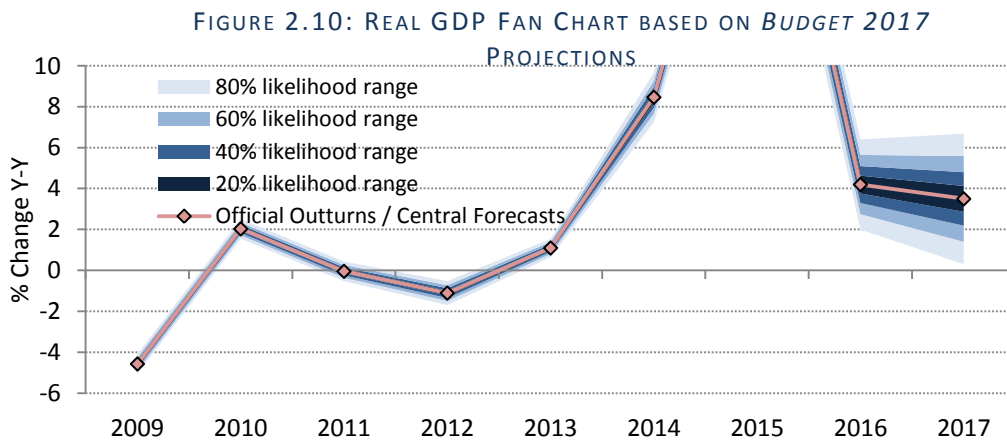
TABLE 2.4: ASSESSING *BUDGET 2017* RISK MATRIX

Risk	Likelihood	Impact	IFAC Assessment
External Demand Shocks	M	H	Ireland has benefited from its main trading partners performing relatively well recently. The slow pace of growth in world trade is concerning, as well as potential imbalances in China. Second round impacts of Brexit could also be significant here.
Geopolitical Risks	M	H	While the direct impacts from geopolitical tensions may be limited, second round effects could be significant, particularly if trade linkages are disrupted or there is a negative financial market reaction.
Persistence of low inflation	M	M	“Secular stagnation” and associated low inflation could have adverse impacts on demand for Irish exports. In addition, countries with high debt burdens (private and public) would welcome higher inflation as a means to reduce the real value of those debt burdens.
Currency Developments	H	H	Last year saw a significant depreciation of the Euro against the Dollar and Sterling. This year has already seen a dramatic appreciation against Sterling. In addition to the less favourable exchange rate, there is also the possibility of heightened volatility in the Euro-Sterling exchange rate in the coming years.
Rapid rebound in oil prices	L	M	As an importer, higher oil prices would reduce the purchasing power of Irish consumers and increase costs for businesses here, while weaker oil prices would be supportive of consumption.
Global financial market conditions	M	M	With continued low interest rates, a “search for yield” could raise financial stability concerns.
“Hard Brexit”	H	H	A WTO style arrangement would appear to have the most significant economic implications for both the UK and its trading partners. This scenario appears to be increasingly likely and could have significant implications for medium term growth prospects in Ireland.
Concentrated industrial base	L	H	Ireland’s industrial base is quite concentrated in a small number of sectors. As a result of this, some sector-or firm-specific shocks could have a disproportionately large impact on the Irish economy. Changes to the US corporation tax code could be one such shock which could have implications for inward FDI. Likelihood is medium.
Loss of competitiveness	M	H	Given the extremely open nature of the Irish economy, any losses in competitiveness could have significant implications for growth. There are several possible sources that could lead to an erosion of competitiveness, such as wage pressures and residential/commercial property inflation.
Private sector deleveraging	L	M	As noted in Section 2.3, consumption per capita remains below its peak (2007) levels. This is partially driven by the high levels of household debt post-crisis. Although falling, it is

			high at 150 per cent of disposable income. If households were to prioritise income gains for paying down debt rather than consumption, this would imply a downside risk to the consumption forecasts.
Risk	Likelihood	Impact	IFAC Assessment
Housing supply pressures	H	M	The lack of a supply response to the excess demand in the property market has seen escalating residential and commercial property prices. These both have negative implications for competitiveness, with compensating upward pressure on wages likely. While a stronger supply response is needed to keep prices and rents down, there are countervailing risks of the economy overheating if there were to be substantial increases in construction while other sectors continue to grow strongly. Policy measures which stimulate demand are likely to make these problems worse.

Note: Likelihood and impacts from *Budget 2017*: H= High; M = Medium; L = Low.

As has been highlighted in previous *Fiscal Assessment Reports* the Irish economy has historically been one of the most volatile in the OECD, along with a tendency towards large revisions to historic data. With this in mind Figure 2.10 shows the historic data and budget forecasts with fans based on historical revisions and forecast errors.



Note: Distributions or 'fans' around historical growth estimates are based on previous revisions to real GDP data. Forecast errors based on 1999-2007; 2010-2015 sample. The Y axis has been adjusted to keep 2016 and 2017 fans legible.