

2. ASSESSMENT AND ENDORSEMENT OF MACROECONOMIC FORECASTS

KEY MESSAGES

- The Council endorsed the *SPU 2015* macroeconomic forecasts to 2020. Taking into account the uncertainties and judgemental elements involved, it was satisfied that these forecasts were within an endorsable range.
- The underlying growth trajectory for the near term continues to strengthen, with evidence mounting that the recovery is now broadening into the domestic economy. If activity continues to strengthen, questions concerning the sustainability of growth rates and risks of an eventual overheating will become more pertinent.
- It is essential that the Government's forecasts for the medium term are well-founded to provide a sound basis for setting the public finances on a sustainable path. Ensuring this requires the development of a fuller picture of the supply-side outside of the EC framework, which is only required for fiscal surveillance. To this end, the Department of Finance should develop a set of medium-term baseline estimates for the supply-side that are aligned to their forecasts for actual variables. This may require greater prioritisation and allocation of resources by the Department towards developing such estimates as it is likely to remain a pivotal issue for future endorsements.
- While near-term prospects for the economy have clearly improved, with risks more balanced than in previous years, chances that growth may disappoint cannot be ignored. The error margins around Irish growth forecasts are very high by international standards and unusual uncertainties regarding the present outlook exist. Notwithstanding recent positive developments, the Euro Area – Ireland's largest trading partner – has yet to durably escape a protracted recession. Developments in Greece and a planned British referendum on EU membership further magnify near-term levels of uncertainty for the external environment. Domestic challenges also exist, with household, corporate and public sector debt still at relatively high levels.

2.1 INTRODUCTION

The Council's fourth endorsement exercise covers the set of macroeconomic projections in *SPU 2015*, representing a longer horizon (2015-2020) than in *Budget 2015*.¹ The timeline for the endorsement process is detailed in Appendix C. As in previous exercises, the Department of Finance provided high levels of cooperation in all of their interactions with the Council.

The ongoing development of the "suite of models" approach has seen the Secretariat continue to develop its set of tools for both short-term and medium-term forecasting. Since November, considerable efforts have been made to build on an understanding of supply-side estimates of the Irish economy in particular. These are all the more urgent given the centrality of potential output estimates to Ireland's fiscal rules as well as the well-documented² concerns with the standard EU Commission approach. For the short term, new models of the GDP deflator, trade prices, consumption and incomes have been added while input into a new working paper (Casey and Smyth, 2015) investigating the importance of revisions in quarterly macroeconomic data provides additional insight for the endorsement mandate.³

Section 2.2 discusses the *SPU 2015* forecasts and puts these in context relative to forecasts of other agencies, while Section 2.3 provides an assessment of the uncertainty and risks surrounding the economic outlook. Section 2.4 concludes by outlining the endorsement process as it applied to the *SPU 2015* projections. Three boxes are included: the first reviews the impact of contract manufacturing on net exports last year; the second updates the Council's analysis of the pattern of errors in the Department of Finance's growth forecasts; and the third documents some of the Council's recent work on supply-side estimates of the economy.

2.2 AN ASSESSMENT OF THE MACROECONOMIC FORECASTS IN *SPU 2015*

2.2.1 SHORT-TERM FORECASTS, 2015-2016

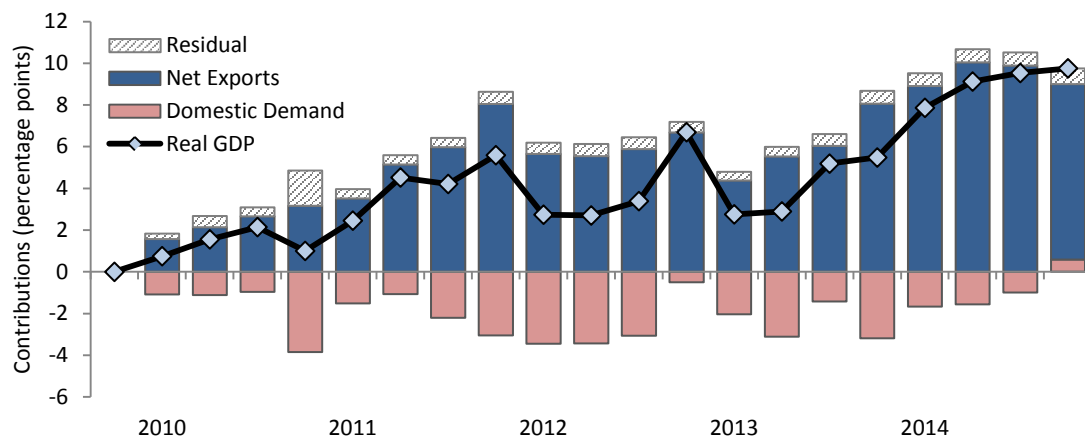
SPU 2015 expects last year's resurgent growth to continue into the remainder of 2015, with real GDP projected to expand by 4.0 per cent, followed by a 3.8 per cent expansion in 2016. While trade developments in the multinational sector flattered growth rates at the beginning of 2014, evidence of a broadening recovery has since strengthened.

¹ The endorsement function is outlined in detail in IFAC, (2013b) and in IFAC, (2014a).

² See, for example, IFAC (2014b), Analytical Note 2, Bergin and Fitzgerald (2014), and Department of Finance (2003).

³ In addition to discussions with Council members, an important input into the preparation of the Benchmark projections involves rounds of discussions with other external forecasters, coming from a wide variety of different perspectives. For this round of forecasts, the Secretariat held discussions with economists and forecasters at the EU Commission, the ESRI and Goldman Sachs. The Secretariat also met with the CSO to gain further insights into recent *National Accounts* and *Balance of Payments* data.

FIGURE 2.1: CUMULATIVE CONTRIBUTION TO REAL GDP GROWTH SINCE 2009 TROUGH



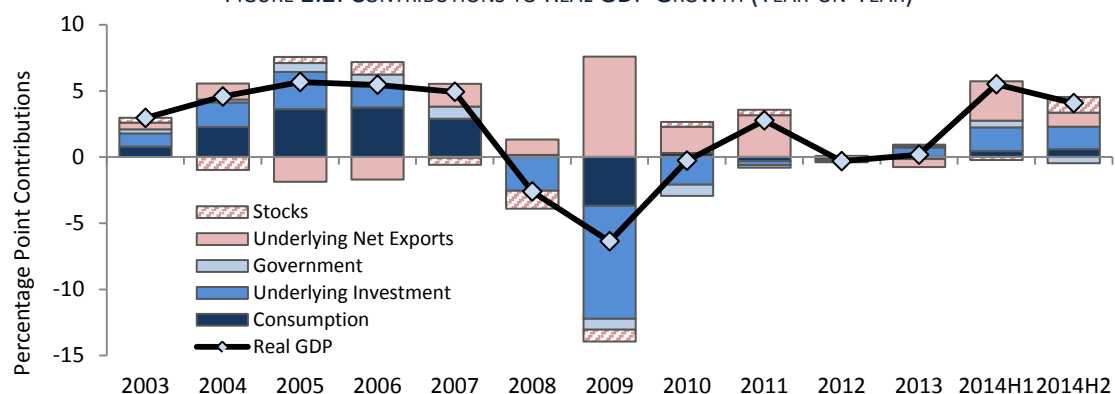
Sources: CSO and internal IFAC calculations.

Note: Q4 2010 data correct for the statistical discrepancy. Domestic demand includes changes in stocks.

The prolonged drag from domestic demand during the crisis appears to have finally abated. In particular, last year's real GDP growth outturn of 4.8 per cent saw a primarily export-led recovery (Figure 2.1) partly supported by expanding underlying investment activity (i.e., excluding aircraft) as well as a nascent recovery in consumer spending.

It is useful to consider the 2014 performance in two halves. The boost from contract manufacturing activities (Box A) to growth rates in the first half of 2014 – when real GDP registered a year-on-year increase of 5½ per cent – unwound in the latter half of the year as associated royalty/licenses imports offset the increase in exports (see Box A). The negative impact from this unwinding was limited, however, due to a pick-up in underlying activity in the latter half of the year (Figure 2.2). Sharp increases in stocks – expected to be related to imported items for eventual consumer purchase – were evident in the final quarter, while net exports (on an underlying basis) still made a solid contribution to real GDP growth even as imports accelerated.

FIGURE 2.2: CONTRIBUTIONS TO REAL GDP GROWTH (YEAR-ON-YEAR)

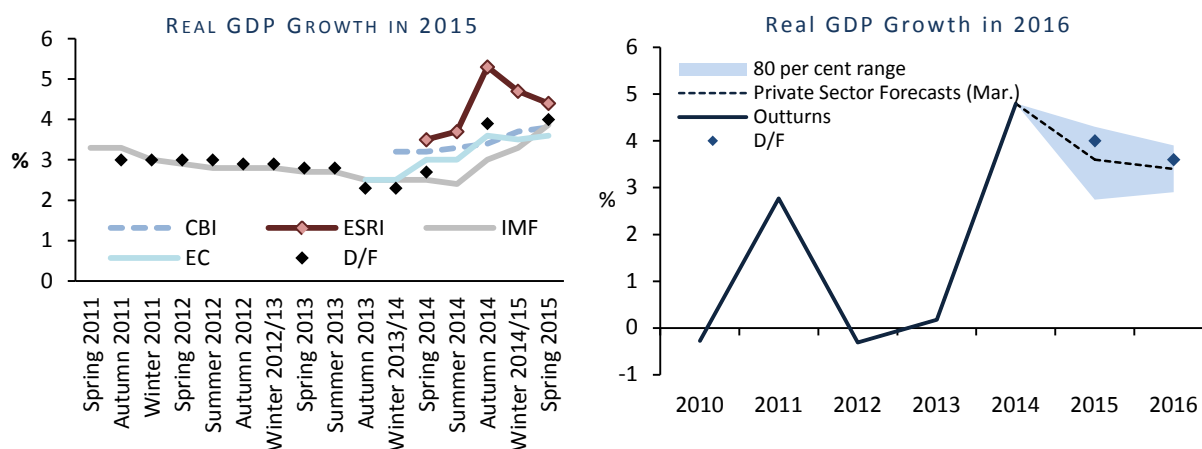


Sources: CSO; internal IFAC calculations.

Notes: "Underlying" 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.

Looking ahead, the recovery in domestic demand is expected to coincide with more favourable external factors. Moderate gains in real incomes and a sturdy pace of employment creation bode well for consumption, while supply pressures in commercial and residential sectors will likely fuel further investment growth. The euro depreciation, weaker oil prices and an improved outlook in key trading partners, meanwhile, should boost trade performance. Most forecasters have consequently revised upwards projections of real GDP growth rates for this year and continued strength is envisaged for 2016, with projections broadly concentrated in the 3-4 per cent range (Figure 2.3).

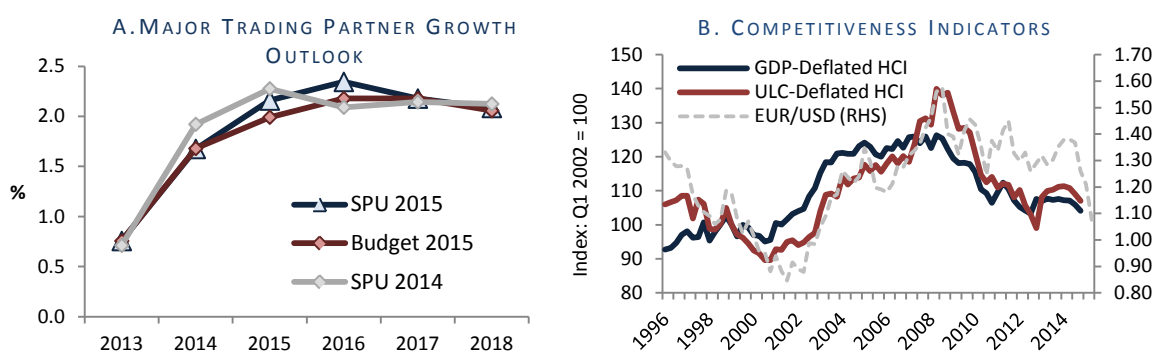
FIGURE 2.3: COMPARATIVE REAL GDP FORECAST VINTAGES (% CHANGE YEAR-ON-YEAR)



Sources: Department of Finance (D/F); European Commission; International Monetary Fund (IMF); Central Bank of Ireland (CBI); Focus Economics and the Economic and Social Research Institute (ESRI).

Exports should continue to aid real GDP growth this year and next. Projected external demand growth is slightly better than at Budget time (Figure 2.4 A), when brisk UK and US growth rates were already factored in. The improvement stems from the Euro Area outlook, where a more accommodative monetary stance, a weaker euro and lower oil prices are all supportive of renewed activity. The latter factors should benefit Irish competitiveness, adding further stimulus to real exports (Figure 2.4 B) and building on the reversal in competitiveness losses visible since 2008.

FIGURE 2.4: EXTERNAL TRADE FUNDAMENTALS IMPROVE



Sources: Department of Finance (D/F); internal IFAC calculations.

Notes: Trading partner forecasts are trade-weighted EC/IMF real GDP forecasts for UK; US and Euro Area as used by D/F. HCI = Harmonised Competitiveness Indicators; ULC = Unit Labour Costs.

BOX A: CONTRACT MANUFACTURING IN 2014

At the time of the November *Fiscal Assessment Report*, outturns for the first two quarters of 2014 were the most recent official National Accounts estimates of real GDP growth in 2014. As noted in the November *FAR*, these outturns were being heavily influenced by an activity referred to as ‘contract manufacturing’. This Box reviews the role played by this activity over the course of last year.

CONTRACT MANUFACTURING

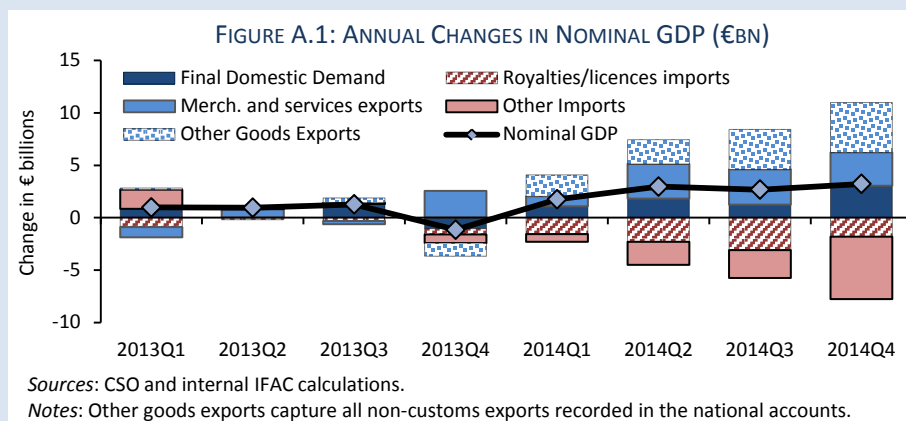
Contract manufacturing activities occur when an Irish-resident firm (not necessarily Irish-owned) contracts a manufacturer overseas to produce a good for supply to an end-client abroad. The sale of the good is recorded as an Irish export of goods, while the contracted production is considered an import of services.⁴ The value added that accrues to Ireland is the sale price of the good produced less some assortment of the following costs: manufacturing services used; the supply of material inputs used in production; imports of royalties for use of the patents; and imports of other services including transport.

In its previous *Fiscal Assessment Report*, the Council noted that the activity served to flatter early-year outturns, while also magnifying the degree of uncertainty around projections for net exports. It was also noted that it would be unlikely to boost domestic employment and that the contribution to the tax base was unclear. In terms of a full-year impact, it was believed at the time that the activities might represent a temporary, once off boost to real GDP growth for 2014 or that they might actually unwind in full before year-end.

IMPACT IN 2014

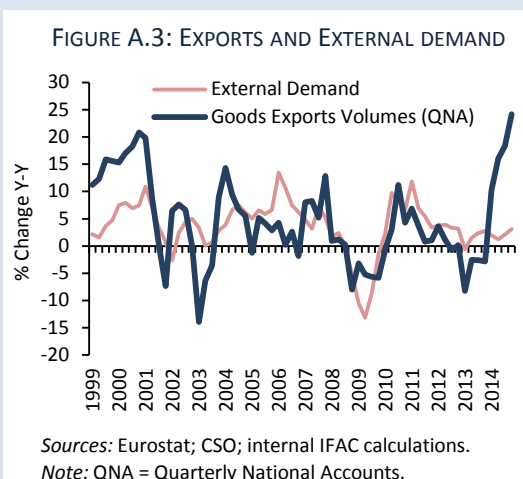
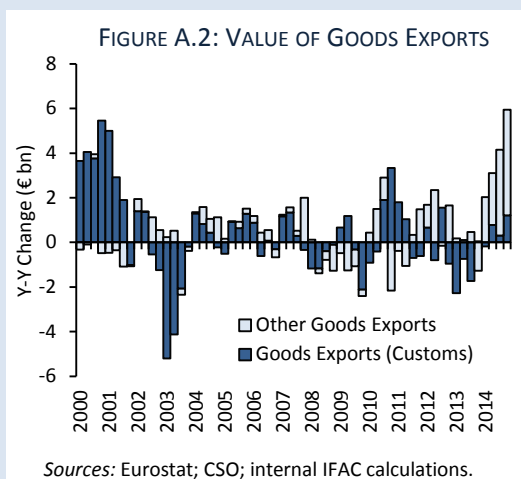
Data for 2014 suggest that the initial impact from Contract Manufacturing on GDP growth did unwind in the second half of the year. Fortunately, accelerated activity elsewhere offset the impact of this unwinding. The unwinding emerged as sharp increases in imports of royalties (including patents related to the use of intellectual property that covered finished products) offset the early-year boost from contract manufacturing-related exports. Total royalties/licenses imports were particularly strong in the third quarter of 2014 (Figure A.1).

⁴ These activities, which reflect the complex global supply chains that multinational enterprises (MNEs) partake in, are expanded on in Box 1 of *Budget 2015* and Box 1 of the *IMF's 2015 Article IV Consultation – Staff Report* (IMF, 2015a). The CSO have noted that as of March 2015 only 16 companies resident in Ireland were engaged in contract manufacturing, while the IMF (2015) note that the issue is most important in the pharmaceutical sector.



As a result of this unwinding, the CSO (2015) noted that contract manufacturing was “...not particularly significant” in explaining the provisional real GDP growth estimate for the full year at 4.8 per cent, though associated activities did have an impact on individual quarters. Although the net impact in 2014 is likely to be small, it is not possible to be precise as regards the exact scale of the impact on growth for two reasons in particular: (i) the activities in question relate to a very small number of companies and thus fall under the CSO’s limits for discretion/uncertainty so that confidentiality issues are not breached; and (ii) data limitations mean it is not possible to net specific quantities of imports against corresponding exports relating to contract manufacturing activities.

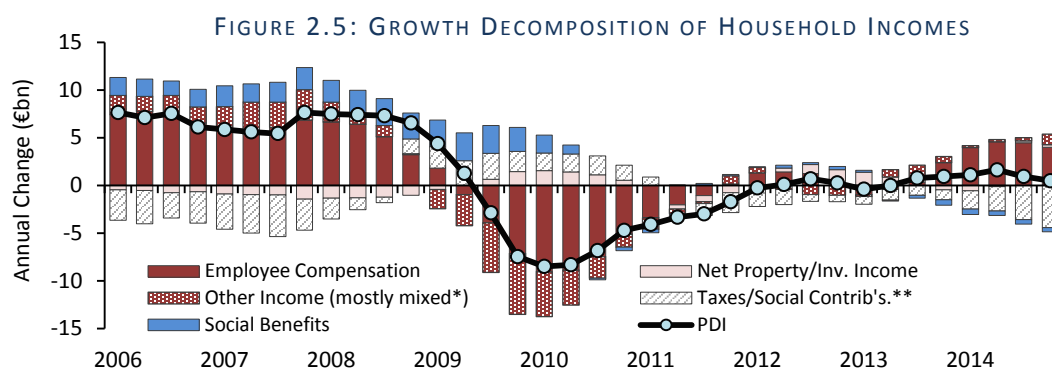
Looking ahead, there may continue to be some impact from adjustments to goods exports like that of contract manufacturing. Such activities have caused goods exports – as measured in the National Accounts⁵ – to deviate more than usual from customs data on exports (Figure A.2) as well as usually reliable indicators of external demand (Figure A.3). However, we anticipate that this will continue to be offset by related import growth so that the net effect should be relatively negligible even if gross imports and exports data continue to be impacted.



Personal consumption volume growth is expected to continue to be less subdued in the near term than in recent years (see Table 2.1 forecast summary). Spending on services towards the end of 2014 was less weak than in previous quarters, thus raising expectations that overall spending will

⁵ The National Accounts measure of goods traded include adjustments to the primary data sourced from the monthly international trade series covering goods exports/imports (i.e., customs data). As well as contract manufacturing activities, the former also reflect merchandising and other conceptual adjustments.

accelerate further this year, while high-frequency retail sales data point to strong durables consumption in the first quarter. Income data are supportive of the outlook: hourly earnings trends for households are more positive, while employment growth appears to have gathered pace again after a slight hesitation in early 2014. Furthermore, taxes and social contributions are not expected to dampen disposable incomes as much as in previous years, given the less contractionary fiscal stance (Figure 2.5).



Sources: CSO Institutional Sector Accounts; internal IFAC calculations.

* Mixed income includes compensation for work by self-employed persons & family members as well as any operating surplus; ** includes other net current transfers.

Household spending is likely to face constraints, however. Savings rates appear to have already descended from crisis highs, limiting the scope for further falls to fuel consumption. In addition, household deleveraging – while progressing – is expected to continue in the near-term, with debt levels far above international levels and historical norms. Recent research (McCarthy and McQuinn, 2014) suggests that higher incomes are associated with additional deleveraging, which may also imply a more limited than usual pass-through of rising incomes to consumer spending.

Investment spending is expected to continue a strong cyclical recovery. Notwithstanding this, the exceptionally low base and various brakes on responses to tightened supply mean that the *SPU* does not expect the building and construction sector to converge on its historical share of GDP (excluding the “bubble” period) even by 2020. A diminished capital stock also means that firms are expected to continue restoring underlying machinery and equipment investment (i.e., excluding aircraft) at a brisk pace.

The GDP deflator in 2015 is expected to benefit from improving terms of trade amid weaker oil prices and a substantive depreciation in the euro, particularly vis-à-vis the US dollar. Continued rental cost growth will add to otherwise relatively subdued domestic inflationary pressures (given the weight of imputed rents in National Accounts-measured personal consumption). The GDP

deflator is expected to moderate next year as oil price declines reverse (in line with futures markets) and as exchange rate effects fall out of the base.

TABLE 2.1: *SPU 2015* MACROECONOMIC FORECASTS (TO 2016)

% change in volumes unless stated	2013	2014	2015	2016
GDP	0.2	4.8	4.0	3.8
GDP Deflator	1.0	1.2	2.8	1.5
Nominal GDP	1.2	6.1	6.9	5.4
GNP	3.2	5.2	3.9	3.5
Consumption	-0.8	1.1	2.4	2.5
Investment	-2.4	11.3	15.3	12.1
Government	1.4	0.1	1.1	1.6
Exports	1.1	12.6	7.6	4.8
Imports	0.6	13.2	8.7	5.4
Current Account (% of GDP)	4.4	6.2	7.2	6.4
Employment	2.4	1.7	2.2	2.2
Unemployment Rate	13.1	11.3	9.6	8.8
Inflation (HICP)	0.5	0.3	0.2	1.1
Nominal GDP (€ billions)	174.8	185.4	198.3	208.9

Sources: CSO and Department of Finance (*SPU 2015*).

2.2.2 MEDIUM-TERM FORECASTS, 2017-2020

The *SPU* forecasts annual real GDP growth to slow towards 3 per cent by 2020: below the average of the past 20 years, but above most expectations for advanced economies⁶ (Table 2.2). This picture is broadly in line with *Budget 2015*, with economic activity driven by domestic demand initially, before exhibiting a more balanced composition after 2018 as the contribution of net exports to growth rises while growth in domestic activity moderates.

TABLE 2.2: REAL GDP GROWTH RATE FORECASTS

% change	2014	2015	2016	2017	2018	2019	2020
Real GDP Growth	4.8	4.0	3.8	3.2	3.2	3.0	3.0
Domestic Demand (p.p.) ¹	2.8	3.4	3.3	2.2	1.7	1.5	1.5
Net Exports (p.p.) ¹	2.2	0.6	0.5	1.0	1.5	1.5	1.4

Source: Department of Finance (*SPU 2015*).

¹ Contributions to real GDP growth rates in percentage points. Domestic demand includes changes in inventories.

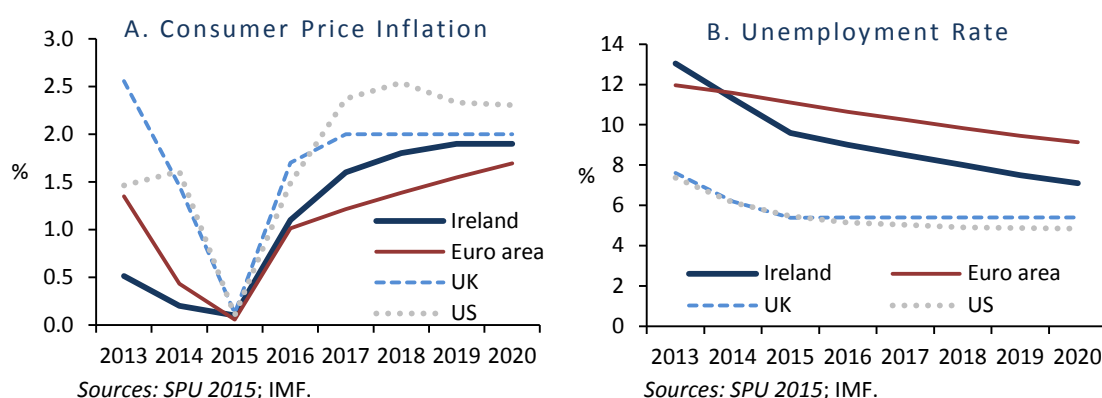
While the medium-term outlook is within a plausible range, the extent to which growth might be fuelled by the external sector in later years could prove challenging. For the growth composition beyond 2018 outlined in *SPU 2015* to be realised, recent competitiveness gains would have to be

⁶ By comparison, the IMF (WEO, April 2015) project growth rates over 2017-2020 for 37 advanced economies averaging 2.3 per cent per annum. The *SPU* projections would, therefore, place Ireland just inside the upper quartile of the IMF projections for advanced economies in later years.

sustained in the face of rising domestic pressures. *SPU 2015* forecasts consumer price inflation exceeding Euro Area rates (Figure 2.6 A), and a stronger labour market (Figure 2.6 B), yet real hourly wage growth (HICP-adjusted) is projected to weaken to 0.4 per cent per annum over 2017-2020 from 1.1 per cent over 2014-16. It is essential that the Department's labour market and income projections are consistent with expectations for overall activity, especially compared to that in economies whose products compete with Ireland's.

There is vast uncertainty as to the current cyclical position of the economy, which certain statistical methods may fail to grasp if used in isolation (Box B). In the absence of a clear sense of equilibrium, one might look to a variety of indicators of slack or tensions on productive capacity in order to help to inform an understanding of this position. In this respect, broad-based real wage and price pressures across the economy as well as the strong current account surplus do not appear indicative of tensions as yet.⁷ Even if unambiguous signs of pressures may not be immediately obvious, there are huge uncertainties and risks to this perspective that warrant careful attention.

FIGURE 2.6: CONSISTENCY OF MEDIUM-TERM PROJECTIONS



Assessing the medium-term forecasts in the *SPU* is complicated by the Department's reliance on the EC methodology as the central guide for supply-side forecasts in later years. While the Department produces – but does not publish – some variations on this approach, a richer alternative should form part of the supply-side assessment.⁸ The EC methodology follows a standard approach to medium-term forecasting that anchors these in a set of projections for productivity, capital and labour. However, in the *SPU*, the supply-side estimates merely conform to the EC methodology. Technical projections on this basis may be necessary for fiscal surveillance requirements, but they do not have to represent the Department's only detailed estimates of the

⁷ See also Appendix B on house prices.

⁸ As well as some variants of the EC methodology, the Department has produced some unpublished HP filtering estimates, however, these do not appear to represent substantive alternatives to the EC methodology.

supply-side. Well-documented problems with the EC approach mean that medium-term demand forecasts are also not well aligned with these supply-side figures.⁹

This approach, for example, leads to estimates of potential output growth exceeding projected real GDP growth by more than half a percentage point in each of 2019 and 2020 (Table 2.3). Beyond the business cycle horizon, it is normally expected that actual and potential output growth would converge, but this is not the case for SPU projections.

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

	% change	2014	2015	2016	2017	2018	2019	2020
<i>SPU 2015</i>	Real GDP Growth	4.8	4.0	3.8	3.2	3.2	3.0	3.0
	Nominal GDP Growth	6.1	6.9	5.4	4.2	4.4	4.2	4.2
	Potential GDP Growth	2.0	2.7	3.2	3.5	3.6	3.6	3.6
	Output Gap (% potential GDP)	-0.9	0.4	1.0	0.7	0.4	-0.2	-0.8
<i>Budget 2015</i>	Real GDP Growth	4.7	3.9	3.4	3.4	3.4	-	-
	Nominal GDP Growth	5.2	5.3	5.1	5.2	5.2	-	-
	Potential GDP Growth	2.1	2.7	3.4	3.8	3.9	-	-
	Output Gap (% potential GDP)	-0.1	1.0	1.0	0.7	0.1	-	-

Source: Department of Finance.

The EC methodology attributes a large share of potential growth to changes in labour supply. This problematic approach is due to the fact that estimates of equilibrium unemployment rates (NAWRU¹⁰) track actual rates of unemployment very closely.¹¹ As such, swings in actual unemployment are considered to be almost entirely structural in nature under the EC approach.

Irish labour supply responds to excesses/shortfalls in demand through standard channels like unemployment rates, but migration also plays a substantive role. That such flows are highly responsive to changing economic activity is not surprising, but the relative scale of these flows when compared to the size of the existing labour force is (e.g., net inward migration flows were equivalent to 4½ per cent of the total labour force in 2006, Figure 2.7).¹² Furthermore, FitzGerald *et al.* (2013) show that net migration sensitivity is much higher for the working age (15-64) population

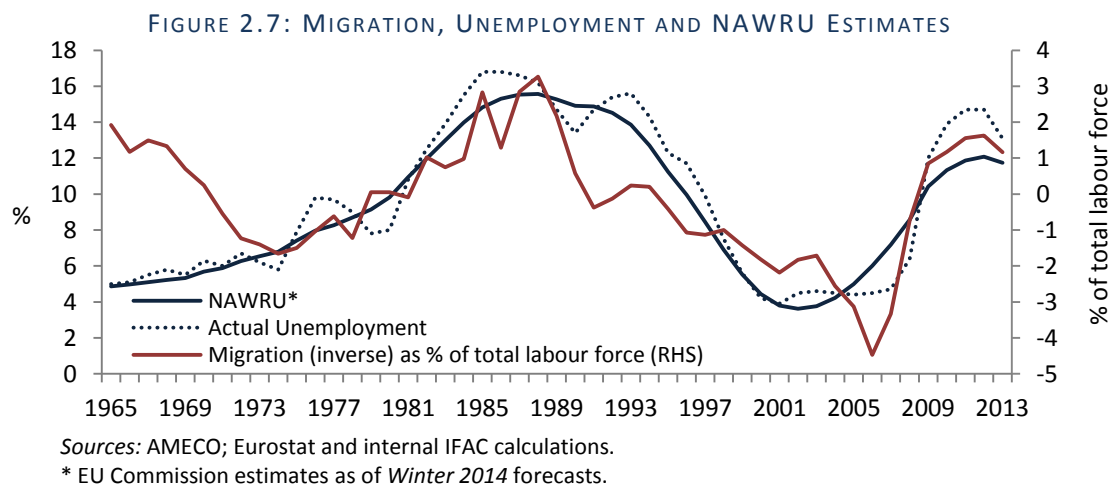
⁹ Criticisms of the approach are widely noted, including by the Department itself (Department of Finance, 2003) and in several of the Council's previous reports (IFAC, 2014a Chapter 2 and Analytical Note 2; IFAC, 2013a; and IFAC, 2011 Box 3.1). Bergin and FitzGerald (2014) also provide a very useful discussion in the context of the structural balance.

¹⁰ Defined as the 'Non-Accelerating Wage Rate of Unemployment' (NAWRU).

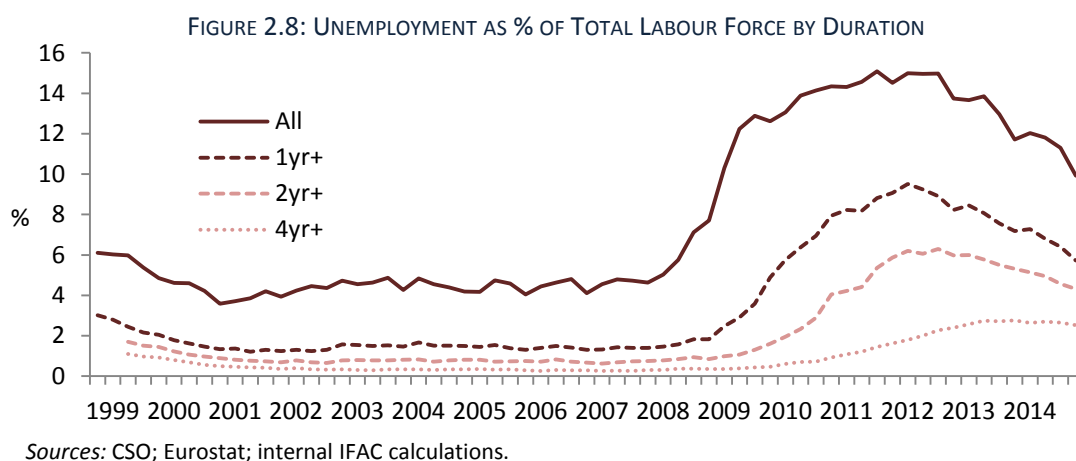
¹¹ Potential labour inputs in the EC methodology are measured as: $[(POPW \times PARTS \times (1 - NAWRU)) \times HOURST]$ where *POPW* is the Population of Working Age; *PARTS* the Smoothed Participation Rate; *NAWRU*, the structural unemployment rate; and *HOURST* is trend average hours worked.

¹² The openness of the Irish labour market to additional inflows of labour can limit wage pressures as unemployment rates decline. This can obscure estimates of the natural rate of unemployment if signalled by inflation.

than for the dependent population. As such, migration can exacerbate already procyclical estimates of the working force in Ireland, in turn contributing to more volatile potential growth estimates.¹³



It is quite feasible that true structural unemployment remains lower than current actual levels and estimates of the NAWRU. Following Ireland's fiscal crisis in the 1980s, the EC-estimated NAWRU will likely continue tracking actual unemployment downwards as activity recovers. Recent data on actual long-term unemployment show rapid declines in unemployment rates among those who have been unemployed for longer than one year since a peak in early 2012 (Figure 2.8). Indeed, only the very long-term unemployed (i.e., longer than four years) appear unresponsive to recent aggregate declines. The extent to which various measures of unemployment track activity makes it harder to identify more generalised disequilibria in the domestic economy, which are of greater relevance for fiscal sustainability.¹⁴



¹³ Department of Finance estimates of potential output growth for Ireland more than double between 2013 (1.3 per cent) and 2020 (3.6 per cent), with the contribution from labour rising from 0.3 to 1.5 percentage points, respectively.

¹⁴ The IMF (2015b) find that changes in gross value added of multinational-dominated sectors have no statistically significant impact on revenues net of discretionary measures.

The Council sees it as essential that the Department's projections for the medium term are well-founded. Ensuring this requires the development of a fuller picture of the supply-side. There are a number of advantages to developing a set of alternative approaches for medium-term projections:

- the Department could align their medium-term growth projections more closely with their actual best assessment of future supply-side developments;
- This would facilitate a more realistic basis for assessing fiscal expectations over the medium term as well as associated risks; and
- it would enable more effective responses to anomalies that arise in terms of fiscal surveillance¹⁵ as well as potentially providing a more reasonable basis for implementing the fiscal rules.

“MEDIUM-TERM BASELINE” PROJECTIONS OF SUPPLY-SIDE

Future Department publications should seek to establish alternative estimates for the medium term. These projections should not employ the same framework as that underpinning the EC methodology, which are required solely for the purposes of EU fiscal surveillance, but would represent the Department's medium-term baseline projections of the supply-side. The medium-term baseline projections could be based on the Department's forecasts of actual real GDP and real investment growth for the short-term, while different income and labour market assumptions would underpin the projections than those used in tandem with EC methodology estimates.¹⁶

Producing a set of medium-term baseline projections should be part of an overall upgrading of the assessment of and methodology for medium-term projections. Additional cross-checks that ensure the consistency and robustness of forecasts should also be developed. These would be particularly useful for verifying forecast changes in incomes and employment, which are central to estimates of potential output. As part of progress towards a wider set of forecasting tools that could eventually be used by the Department for the medium term, consideration could be given to approaches emphasising the endogeneity of factor supply (e.g., capital and labour) to the attractiveness of foreign investment towards Ireland and the demand for Irish output as influenced by relative

¹⁵ Potential output estimates derived from the EC harmonised methodology are currently used as the basis for fiscal surveillance measures like the Expenditure Benchmark and the Budgetary Rule (Chapter 4). Issues that recently arose in relation to the Expenditure Benchmark were highlighted in a previous *Analytical Note* (IFAC, 2015a).

¹⁶ These may also serve as a better basis for revenue projections used by the Government for outer years.

productivity and price competitiveness. This approach is similar to that underpinning the new modelling work on Ireland within COSMO for example.¹⁷

An obvious starting point for progress on developing more reasonable estimates of the supply side might concentrate on arriving at an appropriate estimate of equilibrium for the Irish labour market. Overcoming this problem may require closer attention being paid to migration assumptions and their interaction with the relative performance of Irish economic activity. In addition, given Ireland's high openness and membership of a monetary union, accounting for other possible disequilibria in the economy (e.g., imbalances in the current account, housing and credit markets) is vital in order to better estimate the cyclical position (Box B).¹⁸

BOX B: TOWARDS MORE RELEVANT MEASURES OF POTENTIAL OUTPUT

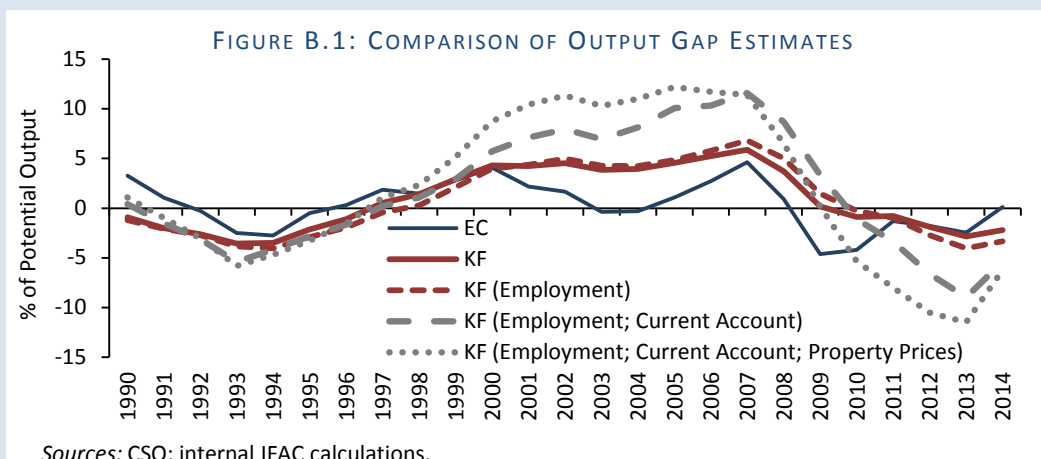
Potential output estimates and estimates of the cyclical position of the economy are important inputs to the design of sustainable fiscal and macroeconomic policies. In the past, however, estimates of these for Ireland have been problematic. The EC methodology, which underpins the fiscal rules, has come in for particular criticism related to the real-time estimates of potential output it produces. This Box outlines the work that the Council has engaged in to progress toward more appropriate measures for assessing the fiscal stance as well as to help in assessing medium-term forecasts produced by the Department of Finance.

ACCOUNTING FOR OTHER IMBALANCES

For the purposes of fiscal sustainability, estimates of economic potential should strive to account for imbalances in the economy that have a significant bearing on government revenue and expenditure. A number of these are overlooked by the EC methodology and incorporating them may help to overcome a key failing of the methodology during the bubble period, when severe credit and housing imbalances contributed to an unsustainable revenue base, yet were not highlighted by estimates under the EC methodology. Various imbalances such as those related to Ireland's balance of payments position have been cited as important factors (Bergin and FitzGerald, 2014).

¹⁷ COSMO (CORE Structural MODEL of the Irish economy) is one model class in the joint ESRI/Central Bank project intended to develop a suite of modern macroeconomic models of Ireland suitable for policy analysis, forecasting and simulation over a three year horizon. For more details, see <http://www.modelling-ireland.com/>

¹⁸ Bergin and FitzGerald (2014) highlight the importance of such disequilibria, while drawing attention to how unhelpful the volatility of NAWRU estimates under the EC methodology can be. The small and open nature of the Irish economy can lead to behaviour more akin to that of a regional economy than a typical national economy. Regional economies can display periods of self-reinforcing growth as inward migration supports scale economies and incomes, thus attracting further inward flows.



One approach that seeks to resolve this issue is to use multivariate filters that incorporate other variables, which signal such imbalances. A common approach in the literature is to augment a multivariate Kalman filter with structural economic relationships. These incorporate additional data intended to better inform or guide the filtering process. Most approaches in recent literature combine earlier strands of research that focus on the Philips Curve, for example. Using this model, one can produce what might be considered a basic potential output estimate to which additional information can be incorporated such as financial, trade, credit and housing imbalances. There have been some criticisms of this approach.¹⁹

Figure B.1 compares the use of the various Kalman filter estimates to the EC Harmonised Method. Various indicators of potential imbalances are added to a basic KF (with drift) in order to better inform the degree of slack that exists in the economy. These additional indicators are incorporated through the output gap equations as proposed by Borio *et al.* (2014). The estimated overheating in the economy pre-crisis is more significant when using the various multivariate filters as compared to the EU approach; with a deeper dip below potential during the crisis and post-crisis period also evident. However, growth above potential begins in the late 1990s, which is slightly earlier than would be expected a priori, (e.g., Honohan, 2009). Additional issues arise in that the magnitude of some of the output gaps estimated under the various KF approaches appear unusually large; some of the indicators of imbalances, when included over the full estimation period, appear statistically insignificant; issues of instability with respect to parameter estimation can arise; and, finally, structural breaks in trend growth rates may not be adequately addressed.

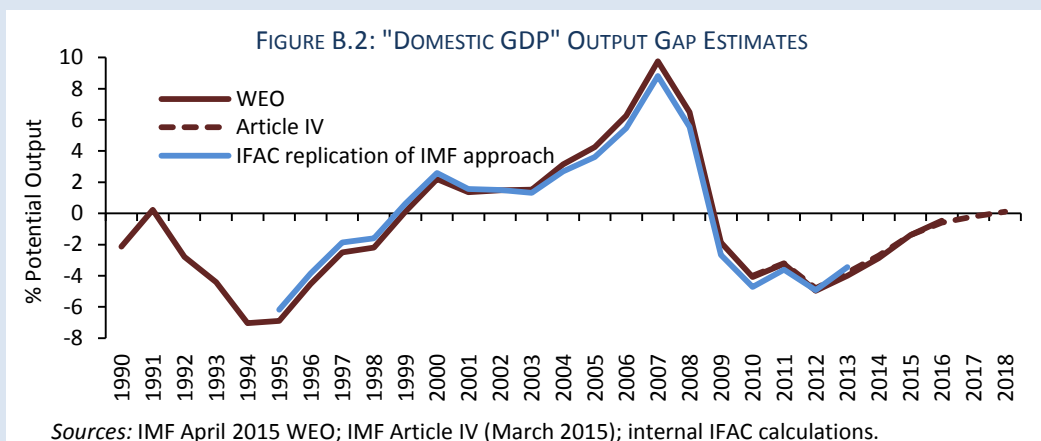
FOCUSING ON DOMESTIC SECTORS

For the purposes of fiscal sustainability, focusing on activity outside of the volatile multinational-dominated sectors may also be of more relevance. The multinational sector in Ireland has relatively little fiscal impact compared to more domestic-oriented sectors, while their impact on employment is also relatively low.²⁰ For these reasons, the IMF (2015a and 2015b) have adopted an alternative approach as a guide for the medium term

¹⁹ Borio *et al.* (2014) criticise the imposition of economic theory on Kalman filter estimates as the resulting output gaps are highly sensitive to the model specification. These can also perform poorly in real time and are arguably more opaque than other methods. They suggest the adoption of a more 'parsimonious approach' that involves incorporating additional, observable economic data directly in the output gap equation as an explanatory variable rather than imposing economic relationships to direct the filter.

²⁰ Recent analysis by the IMF (2015b) also suggests that changes in GVA of these sectors do not have a statistically significant impact on revenues.

that involves filtering real GDP excluding the multinational-dominated sectors as measured by the CSO. This approach yields a measure of trend growth that might be labelled “domestic GDP”. The corresponding output gap estimates (Figure B.2) show a relatively intuitive excess emerging in the 2000s, magnified in the pre-crisis period, and followed by a sharp swing into negative territory before gradually recovering in the post-crisis period.



While an approach that emphasises domestic sectors has obvious advantages, there are drawbacks. For instance, the common problem of end-point bias can result in an overweighting of the most recent outturns when estimating trend growth rates under some statistical filters. Moreover, the use of a univariate filter could lead to a failure to pick up on other critical imbalances that matter for public finances, such as a housing bubble, for example. Estimates of the multinational-dominated sectors' GVA are also produced with a longer lag relative to headline GDP figures. Finally, as noted previously, filtering methods in general may fail to capture large structural changes in trend growth.

AREAS FOR DEVELOPMENT

The issues outlined above give a sense of the challenges facing policymakers when determining sustainable fiscal policies on the basis of medium-term macroeconomic activity. The Council views progress on multivariate filter approaches as part of the toolkit for developing alternative estimates of potential output. In addition to statistical filters, further work is planned that would develop analyses in a number of key areas pertaining to the imbalances that matter most for the public finances. The work being undertaken as part of the Central Bank of Ireland/ESRI Macro Modelling Project could also shed light on important questions around Ireland's medium-term growth potential.

2.2.3 RECONCILIATION TABLES

The *SPU* provides a reconciliation table reflecting changes between the endorsed projections and those that are published in the document itself, which account for the €1.2 billion extra fiscal measures for 2016 announced. Additional tables were provided to the Council outlining the details of these differences.²¹

²¹ This requirement is reflected in the MoU between the Department and IFAC.

The fiscal package for 2016 is expected to boost overall real GDP for 2015 by an additional 0.2 percentage points relative to the endorsed set of forecasts. At an aggregate level, this increase appears reasonable. Most of the impact arises in the form of increased consumer spending expected to result from income gains following tax and expenditure changes. The remaining changes arise due to higher estimates for investment (capital spending) and government consumption (current spending).²² Employment estimates were revised up slightly on account of budgetary measures which impacted on both public and private workforce estimates.

Supply-side estimates were also subject to some revisions between the endorsed and *SPU* projections, with potential output higher by 0.2 percentage points on average over the forecast horizon. The increases, in part, reflected the changes to demand-side forecasts described above, which impact on key inputs to the estimation of potential output (e.g., employment, employee compensation, investment, etc.).²³ While such changes – in so far as they are clearly linked to budgetary measures – are understandable sources of revisions, methodological changes should not occur between the endorsed and published forecasts.²⁴ As a principle, views regarding supply-side potential should not be influenced by small changes arising from demand-side measures of this sort. The fact that it does further suggests issues with the methodology used. This is an avoidable source of change between the endorsed and final set of projections and the Council expects that sufficient margins will be allowed in the chosen parameters to prevent such technical changes from occurring in future.

2.2.4 FORECASTS OF OTHER AGENCIES

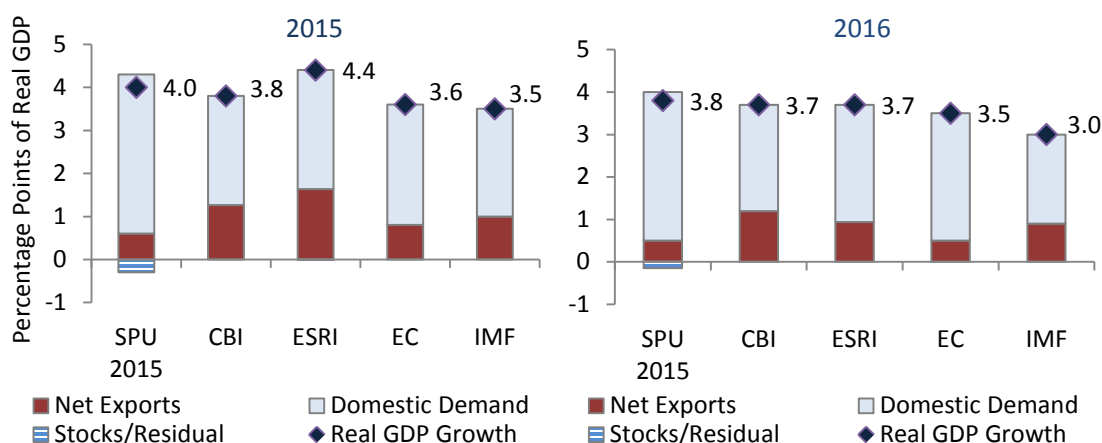
Most forecasting agencies envisage real GDP growth continuing to expand briskly as in the *SPU* over the near term. Compositional differences – although weighted toward domestic demand slightly more in *SPU* – are less pronounced than on previous occasions (Figure 2.9).

²² The forecasts assume a marginal propensity to consume out of income of 0.8, while an overall import content assumption of 0.5 is applied to the increase in final demand due to fiscal measures.

²³ IFAC 2014a, *Analytical Note No. 2* details these inputs to supply-side estimates.

²⁴ On this occasion, it appears that certain technical adjustments included in the endorsed forecasts – and permitted under guidelines on the EC methodology – subsequently caused limits to be breached when the fiscal measures announced in the *SPU* were included. This necessitated that changes be made to the endorsed forecasts in order to ensure compliance with the guidelines.

FIGURE 2.9: COMPARATIVE REAL GDP GROWTH CONTRIBUTIONS (PERCENTAGE POINTS)



Sources: SPU 2015; ESRI (Quarterly Commentary Spring 2015); IMF (Article IV, Mar 2015); Central Bank Quarterly Bulletin 2, Apr 2015; and European Commission (European Economic Forecast, Spring 2015).

For the medium term, the Department is forecasting activity growth of a relatively similar pace to that expected by other forecasters over this time horizon (Table 2.4). The range of projections for later years of between 2½ per cent and 3 per cent per annum on average is relatively typical of medium-term projections currently envisaged for Ireland.²⁵

TABLE 2.4: MEDIUM-TERM MACROECONOMIC FORECASTS TO 2018

% change unless stated	2014	2015	2016	2017	2018	2019	2020
SPU 2015							
GDP	4.8	4.0	3.8	3.2	3.2	3.0	3.0
Employment	1.7	2.2	2.2	1.9	1.9	1.8	1.7
Productivity	3.0	1.7	1.5	1.2	1.2	1.2	1.2
IMF (April WEO)*							
GDP	4.8	3.9	3.3	2.8	2.5	2.5	2.5
Employment	1.7	2.0	2.0	1.5*	1.5*	1.5*	1.5*
Productivity (implied)**	3.0	1.9	1.3	1.3	1.0	1.0	1.0
OECD (Nov 2014)***							
GDP	4.8	3.3	3.2	3.3	3.0	2.8	2.8

Sources: SPU 2015; ESRI (Medium-Term Review 2013); IMF (12th Review); OECD.

* Employment growth rates for 2017 onwards are taken from the March 2015 Article IV Consultation-Staff Report

** Implied productivity is simply GDP growth less employment growth.

*** OECD projections for 2017 onwards are taken from the OECD May 2014 long-term baseline projections.

2.3 RISKS

Near-term prospects for the economy have clearly improved, with risks more balanced than in previous years. The Council welcomes the fact that *SPU 2015* clearly notes the balance of risks to the Department's macroeconomic forecasts having failed to do so in more recent publications.

²⁵ ESRI (FitzGerald *et al.* (2013)) also produce medium-term forecasts, albeit the most recent update is from mid-2013. The central "recovery" scenario outlined at that time envisaged real GDP growth rates averaging 4 per cent per annum over 2016-2018, with implied productivity growth of 1.7 per cent.

Statements like these are seen as critical inputs into discussions around the macroeconomic and fiscal outlook and the Council had repeatedly requested their inclusion in previous *Fiscal Assessment Reports*.²⁶

Welcome improvements are evident in efforts to bring together previously fragmented risk analyses, including through the *National Risk Assessment* publication. Where relevant risks remain pertinent – such as those documented in the *National Risk Assessment* – it might be more useful to incorporate these into a single risk discussion that gives a more comprehensive sense of risk exposure. To improve transparency, this discussion might be more appropriately incorporated into the *SPU* itself.

TABLE 2.4: MACROECONOMIC RISKS COVERED IN *SPU 2015*

Risk	Direction	Details
Oil Prices	Upside	This is largely positive for competitiveness and for household real purchasing power. Some downside risks exist if oil prices rise faster than expected.
Exchange Rates	Upside	Euro depreciation vis-à-vis sterling and US dollar aid exports destined for markets outside the euro area, namely the UK and US.
Household Debt	Downside	Prioritisation of household income rises for further debt reduction rather than consumption might spell downside risk to consumption forecasts.
Competitiveness	Downside	Possibility that wage/productivity growth exceeds that of Euro Area and elsewhere, thus damaging competitiveness.
Euro Area Growth	Downside	Euro Area shows more encouraging growth prospects of late, but has a recent history of growth disappointments. Uncertainties surrounding developments in Greece could induce re-emergence of financial stress.
Global Financial Markets	Downside	Risks of a return to global financial market turbulence could increase due to asset market mispricing or low market liquidity.
Deflation	Downside	Deflation could raise real interest rates and depress aggregate demand.
Banking System	Downside	Progress has been made on restoring financial viability of banking system, but vulnerabilities in asset books may weigh on bank credit ratings.
Geopolitical Risks	Downside	Any acceleration in tensions could pose downside risks for growth.

Source: *SPU 2015*.

Note: The direction of risk is inferred from but not specified in *SPU 2015*.

Even though risks are judged to be now more evenly balanced than in recent years – when downside risks dominated – *SPU 2015* still highlights manifold risks to the downside (summarised in Table 2.4). The external environment, in particular the Euro Area, is central to the *SPU* discussion. The region accounts for one-third of Irish exports when customs data and services trade data are

²⁶ In a written response to concerns raised in the *June 2014 FAR*, the Minister noted that “...a statement on the overall balance of risks can be provided in future”. However, *Budget 2015* again failed to include such a statement despite a substantive risk discussion documenting predominantly downside risks. In a similar response to the *November 2014 FAR*, the Minister noted that “...given the sensitive and often self-fulfilling nature of annotating such risks, the existing high-level approach taken in these documents is considered sufficient”. The Council does not accept these reasons for not providing an assessment of the balance of risks. A salutary lesson from the recent property bubble is that it is better to officially recognise risks at an early stage so that appropriate preventative measures can be taken.

both accounted for. This is roughly the same as the UK and US combined. Recent data suggest that risks of deflation and recession have subsided in the monetary union, but the lack of evidence of a durable escape from recession remains concerning.²⁷ Immediate risks relate to developments in Greece.²⁸ However, new research suggests that the Euro Area may face more secular declines in potential output growth related to ageing and declining fertility rates among other factors.²⁹

The British referendum on EU membership could magnify uncertainties over the near term, while longer term implications of any departure – if voted for – are unclear. The UK accounts for approximately 16 per cent of Ireland's exports, with a high concentration of more labour-intensive sectors represented. Uncertainties produced by the referendum lead-in itself could stymie investment, thereby weakening the UK economy's near-term outlook, but also having ramifications for long-run potential growth if capital stock accumulation is substantially reduced. In terms of outcomes, a departure or even renegotiated terms of membership would likely have wide-ranging implications for free movement of goods, services and labour. It could also alter the contours of decision making at EU level as well as potentially transforming the relative competitiveness environment, with knock-on effects for future FDI flows.

It is envisaged that Euro Area interest rates will remain low for a protracted period. While accommodative for near-term growth and beneficial for highly indebted sectors, financial stability risks are posed by a continued easing in the monetary stance. If Euro Area monetary conditions were to remain highly accommodative into the medium term, there is also a risk that such a continued easing might eventually prove inappropriately loose for the anticipated cyclical rebound in Ireland. An expected normalisation in US monetary policy could also lead to disruption in financial markets if not handled smoothly.

Domestically, there is a risk that the so-called balance sheet recession represses growth rates more than expected and heightens vulnerabilities to falling incomes or rising interest rates. Household debt levels when expressed as a proportion of disposable incomes, though falling, remain among the highest in the EU at just under 169 per cent. Parts of the non-financial corporate sector also

²⁷ The sluggish exit from recession led the official arbiter of the business cycle for the region (CEPR, 2014) to preclude calling an end to a recession estimated to have started in late-2011 when it met last year.

²⁸ Though direct economic and financial exposures to Greece are relatively limited in Ireland and most Euro Area member states, uncertainties created by an exit could heighten redenomination risk attached to debt of other member states, with consequent impacts on sovereign and bank funding costs, on creditworthiness more generally and on business and consumer confidence.

²⁹ McQuinn and Whelan (2015) identify weakening trends in TFP growth and capital accumulation as additional areas for more enduring concern. These have been aggravated further by crisis legacies including weak private investment across the region, which – given public and private debt overhangs – could continue to dampen potential output. Echoing these concerns, the IMF (2015c) point to skill erosion related to high structural and youth unemployment rates in some Euro Area economies as possibly depressing growth further.

face high levels of indebtedness, while difficulties accessing credit remain apparent, with domestic reliance on bank funding very high compared to other economies.³⁰ Other domestic risks to be considered relate to possible cost competitiveness pressures related to recent rapid house price increases and supply constraints (Appendix B).

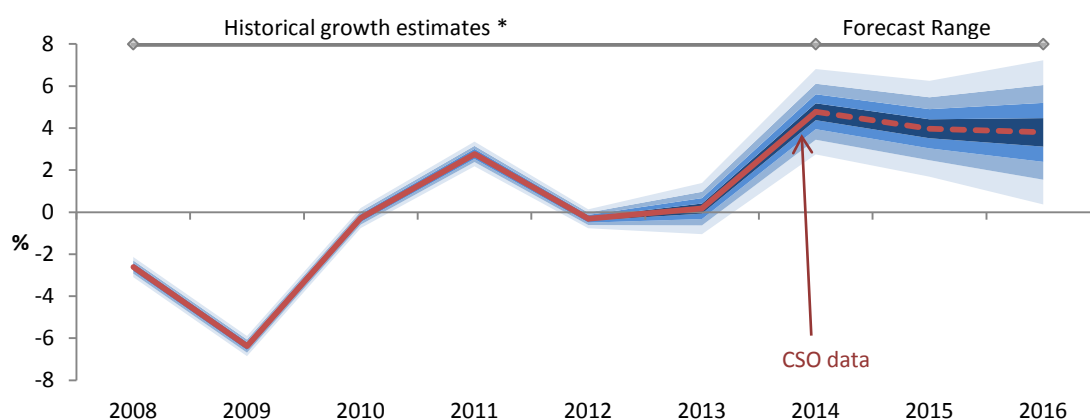
There are few signs of overheating apparent in the economy at present as the recovery takes hold after the balance sheet recession. However, forecasts suggest that the economy will grow substantially in the coming years. This would most likely close any negative output gap, but also raises the question of whether the economy risks overheating at some point. One scenario is that euro area interest rates would remain low, while cyclical conditions in Ireland would warrant a tighter policy stance. As in the past, there are risks that the true level of sustainable demand and output could be misperceived. For example, were potential output growth to be lower than is currently thought for Ireland, then actual growth rates at their current pace could lead to a rapid closing of the output gap and a potential overshooting of the economy's equilibrium.

The Irish economy is inherently more volatile than others: absolute real GDP forecast errors are among the widest in the EU (IMF, 2013); quarterly data show some of the largest historical revisions in the OECD;³¹ and the influence of large multinational-dominated sectors means that substantial variations in output can arise quite abruptly without increasing domestic resource utilisation.³² These issues pose substantial difficulties for forecast accuracy, with confidence intervals particularly wide in Ireland and further increased by the uncertainties and risks described above. Illustrating this in part, Figure 2.10 shows the fan chart surrounding the Department's growth forecasts to 2016 based on past errors along with the range related to expected data revisions for the historical period.

³⁰ The Central Bank (2014) notes that aggregate debt-interest costs remain above euro area equivalents, but that nearly 84 per cent of SMEs have debt-to-turnover ratios less than one-third, while one third of SMEs have no debt at all.

³¹ Even when controlling for relatively high historical growth rates revisions are still among the highest recorded in the OECD (Casey and Smyth, 2015).

³² CSO data show that three broad categories of multinational-dominated sectors accounted for close to one quarter of total gross value added in the economy in 2013.

FIGURE 2.10: REAL GDP FAN CHART BASED ON *SPU 2015* PROJECTIONS (TO 2016)

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

* Distributions or 'fans' around historical growth estimates are based on previous revisions to real GDP data. Both forecast errors and revisions are based on 1999-05 sample.

2.4 ENDORSEMENT OF THE *STABILITY PROGRAMME UPDATE 2015* PROJECTIONS

This section details the fourth endorsement exercise undertaken by the Council covering *SPU 2015*, outlining the Council's considerations around the time of the endorsement (Appendix C details the timeline). Data available at the time may differ from that available for the purposes of the assessment. The forecasts for the endorsement were predicated on a no policy change basis (i.e., a neutral *ex ante* discretionary budget adjustment).

The Council endorsed the *SPU 2015* macroeconomic forecasts to 2020. It was satisfied that these were 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 Benchmark and other projections.

First, focusing on the methodology used by the Department of Finance, the Council remains satisfied that short-term projections broadly conform to standards set by other forecasting agencies both internationally and domestically. The Department continues to provide detailed information on models used in the development of its forecasts for assessment by the Council.

In relation to medium-term projections, the correct application of the common European Commission (EC) methodology to estimate trend supply-side variables was verified as at the time of the endorsement of the spring 2014 *SPU* projections. Although the Council endorsed the medium-term forecasts produced by the Department to 2020, this does not amount to an endorsement of the EC methodology as the most adequate approach for describing Ireland's cyclical position and potential output in the medium term. The Department of Finance (2003) has itself long

documented the difficulties associated with estimates of Ireland's potential output and output gap in terms of estimating the overall fiscal stance. Due to the difficulties associated with estimating supply-side trend variables using the EU methodology as well as in linking these to actual forecasts, the Council's endorsement instead refers to the actual demand-side projections.

Further efforts toward developing medium-term, supply-side projections, which are consistent with the Department's views on the demand-side are essential, however, as explained in Section 2.2. This may require a greater prioritisation and possibly allocation of resources by the Department towards development as it is likely to remain a pivotal issue for future endorsements.³³

Second, in terms of the pattern of errors in recent Department of Finance forecasts, the Council has in the recent past emphasised some evidence of systematic bias related to the domestic and external split of aggregate demand. As detailed in Box C, the previously observed 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 Benchmark projections³⁴ and other forecasts showed less of a deviation with the Department's own forecasts than in previous endorsement rounds both in aggregate and across components. The flow of high frequency economic data at the time of the endorsement was largely positive with respect to growth. In addition, real GDP growth rate differences were negligible relative to Benchmark projections, while price deflator projections were considered to be within a reasonable range (Appendix Table A.1). The Department's projections were slightly higher than consensus estimates available at the time, though the most recent forecasts showed broadly upwards revisions.

BOX C: DECOMPOSITION OF FORECAST ERRORS (AN UPDATE)

Understanding deviations between Government forecasts of the macroeconomy and actual outturns forms an essential part of the endorsement process within the Council's mandate and its role in assessing macroeconomic projections.

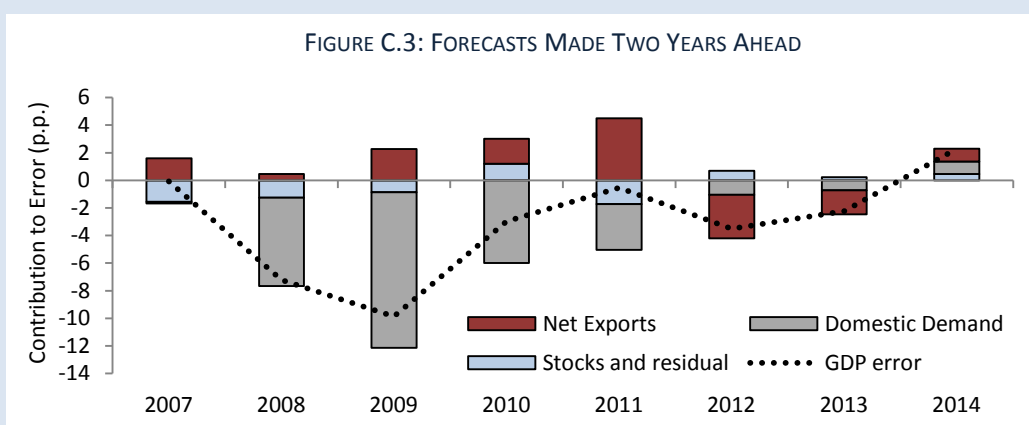
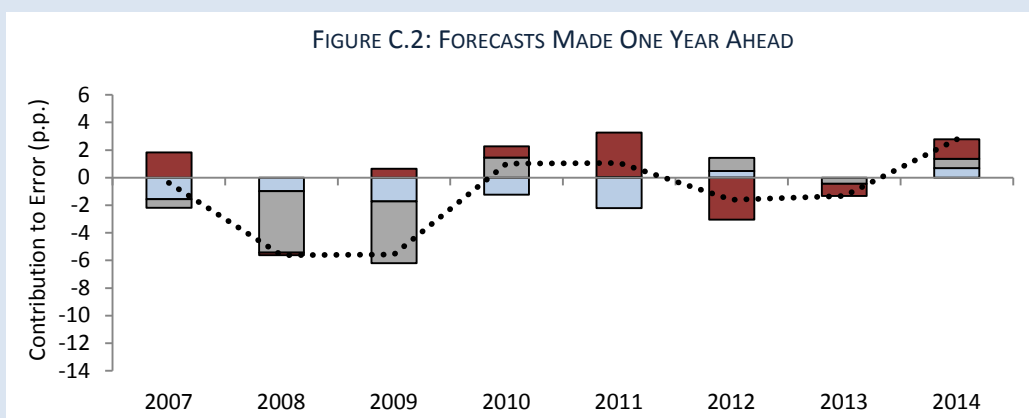
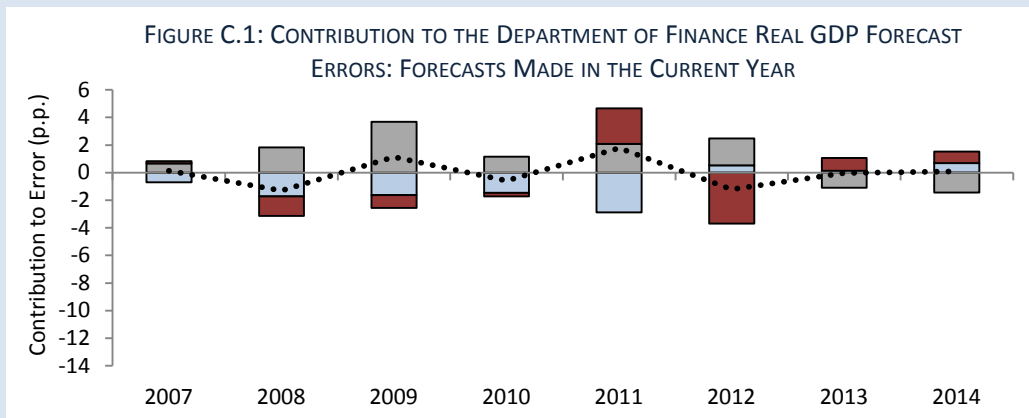
The *April 2013 FAR* (Box A) highlighted a clear systematic tendency for Department of Finance forecasts to overestimate domestic demand – which is more tax-rich in nature – in preceding years, with the reverse true for net exports. This Box updates the analysis, using the latest available data for 2007-14, documenting the sources of real GDP forecast errors at different horizons (Figures C1–C3).

For the earlier crisis years, the Department's systematic tendency to over-estimate domestic

³³ For the near-term at least, the fiscal rules are likely to be evaluated on the basis of the EC methodology so the Department will necessarily be required to continue to engage with this method also.

³⁴ Benchmark projections form a key part of the endorsement process (see IFAC, 2013b and 2014a).

demand is still evident – though this tendency appears to have lessened of late. A more sluggish than expected export performance in 2012 and 2013 coincided with specific developments in the multinational-dominated sectors of the economy. In particular, underestimation of the pharmaceutical patent cliff and declines in the gross value added from ICT-related sectors (Nov 2014 FAR, Box C) likely prompted large forecast errors on the contribution of net exports to real GDP growth. By comparison, 2014 real GDP growth over-performed on all fronts relative to earlier expectations as a broadening recovery surprised most forecasters.



Sources: Department of Finance (Budget/SPU documents); internal IFAC calculations.

