Irish Fiscal Advisory Council

# Fiscal Assessment Report

November 2013

**CONTENTS**

# 1. ENDORSEMENT AND ASSESSMENT OF MACROECONOMIC FORECASTS

## SUMMARY

- Under the so-called "Two Pack" of EU regulations, the Council has been assigned as the independent body required to endorse the macroeconomic projections underpinning Budgets and Stability Programme Updates. The obligation for the Department of Finance to submit its forecasts to external scrutiny and approval is a significant change in Ireland's budgetary architecture. This should help to improve the accuracy and transparency of official macroeconomic forecasts.

- The Council has developed its own forecasting methods and analytical capacity in order to provide a benchmark set of projections against which to judge the Department of Finance's forecasts.

- The Council endorsed the macroeconomic forecasts underlying *Budget 2014* based on a provisional final set of projections provided by the Department of Finance in advance of the Budget. The Council was satisfied that these forecasts were within its endorseable range, taking into account the methodology and the plausibility of the judgements made.

- As part of the endorsement exercise, the Council expressed a significant reservation relating to the quarterly profile for personal consumption expenditure given the Central Statistics Office's (CSO) estimates for the first half of 2013. This was resolved following clarifications by the Department of Finance regarding their assumptions relating to possible data revisions.

- The macroeconomic forecasts in *Budget 2014* assume GDP growth of 0.2 per cent in 2013, accelerating to 2 per cent in 2014, supported by stronger domestic demand and net exports.

- The growth outturn for 2013 is likely to be depressed by a number of specific factors. These include a background of on-going balance sheet repair, budgetary consolidation and anaemic demand in some of Ireland's main trading partners. The pharmaceuticals "patent cliff" is also likely to have a dampening effect on export growth over several years. These headwinds are expected to ease gradually, enabling net exports and domestic demand to pick up into 2014.

- There are considerable risks around the *Budget 2014* growth forecast. The Council agrees with the assessment in the Budget documentation that while there are risks on both sides of the forecast, they "appear to be tilted to the downside".

## 1.1 Introduction

The Council was given an additional mandate in July 2013 to endorse the macroeconomic projections in future Budgets and Stability Programme Updates. This marks a significant change in Ireland's budgetary architecture. For the Council, it creates an important new responsibility. Section 1.2 provides the background to the endorsement function. Section 1.3 sets out the Council's general approach to endorsement in terms of a framework and the methodologies used to support the endorsement exercise. Section 1.4 summarises some of the key elements of how this approach was applied to the endorsement of the *Budget 2014* projections.

The Council's mandate to assess the official macroeconomic projections remains in place, alongside the endorsement function. Section 1.5 provides the Council's overview of economic developments and an assessment of the forecasts contained in *Budget 2014*. Finally, Section 1.6 concludes with an assessment of the uncertainty surrounding the economic outlook.

## 1.2 The Basis for the Endorsement Function

In 2011, the Council was established as an independent body to "assess" the Government's macroeconomic projections, both on a backward- and forward-looking basis. However, there was no obligation for the Government to take the Council's assessments into account.[1] These assessments were qualitative in nature and the Council did not comment on the forecasts ahead of any budgetary decisions or relevant EU discussions.

In July 2013, the Council was given a new endorsement function fulfilling requirements under the so-called "Two Pack" of EU regulations, now enshrined in Irish law (see Chapter 3). The operational elements associated with this function are set out in a Memorandum of Understanding (MoU) signed between the Department of Finance and the Council (Box A).[2]

[1] The Government has responded to the Council's previous *Fiscal Assessment Reports* in its official publications.

[2] The MoU is available at: http://www.fiscalcouncil.ie

### Box A: The Endorsement Function and the Memorandum of Understanding

The Council's endorsement function has its origins in the "Two Pack" of new EU fiscal regulations that came into force on 30 May 2013.[3]

One element of the "Two Pack" — which deals largely with procedures to strengthen fiscal governance in the Euro Area and to reduce fiscal and financial risks — is the requirement that the macroeconomic forecasts underpinning Budgets and Stability Programme Updates must either be made independently or endorsed by independent bodies.

In Ireland, the Government decided that the "endorsement" approach would be adopted. The Department of Finance remains responsible for the forecasts, with the Council tasked as the independent body which would undertake the endorsement function. Following discussions, a joint Memorandum of Understanding (MoU) was signed by the Council and the Department of Finance.

Formally, the endorsement function has been implemented through an amendment to the *Fiscal Responsibility Act 2012* that provides a new element to the Council's mandate, to "...endorse, as it considers appropriate, the macroeconomic forecasts prepared by the Department of Finance on which the Budget and Stability Programme will be based".[4] For the purposes of the Budget, the forecasts do not include the impact of final decisions on discretionary tax and expenditure measures.

The MoU between the Council and the Department of Finance governs the operational aspects of the endorsement function. It sets out the background to the endorsement exercise and provides details on the coverage of the macroeconomic projections endorsed, the information requirements and the approach to be followed. The timing and arrangements around the endorsement process are also dealt with in the MoU.

The MoU is in line with guidelines on how to implement the "Two Pack", including the requirement to put in place arrangements to govern the implementation process (EC, 2013b). These include:

- The Council will communicate regularly about its approach to the endorsement function, including the analysis underpinning its assessments.
- The Council will make clear whether or not it endorses the forecasts. In the event that the Council were to conclude that it had significant reservations when presented with the preliminary forecasts in advance of the Budget or the Stability Programme, this would be communicated to the Department of Finance. Further discussions could then take place to produce a revised forecast addressing the concerns that the Council raised. If at the end of the process the Council was not in a position to endorse the macroeconomic forecasts, the absence of an endorsement and underlying reasons for it would be set out by the Council.

[3] Formally, (1) EU Regulation No 473/2013 on common provisions for monitoring and assessing draft budget plans and ensuring the correction of excessive deficit of the Member States in the Euro Area, and (2) Regulation No 472/2013 on the strengthening of economic and budgetary surveillance of Members States in the Euro Area experiencing or threatened with serious difficulties with respect to their financial stability.

[4] The *Ministers and Secretaries (Amendment) Act 2013* amends the *Fiscal Responsibility Act* (2012) to include a macroeconomic forecast endorsement function.

The obligation for the Department of Finance to submit its forecasts in advance to external scrutiny and endorsement is a significant change in Ireland's budgetary architecture. Until recent years, there was no direct review of official forecasts produced by the Department of Finance and the new function is a significant extension of the Council's role.[5]

The aim of the endorsement function is to help to ensure that forecasts are both unbiased and as accurate as possible. In particular, many countries have suffered from "optimism bias" in official forecasts, where the political system creates incentives to make over-optimistic growth forecasts that imply strong revenue growth so as to appear to ease fiscal constraints. In the case of Ireland, it is not clear that there has been such a bias although there have been periods marked by large and persistent forecast errors (see for example, IFAC, 2012b, 2013a). Outside scrutiny of the Department of Finance's macroeconomic projections could help to improve forecast performance.[6]

## 1.3 The Council's Approach to Endorsement

The Council is required to "…endorse, as it considers appropriate, the macroeconomic forecasts prepared by the Department of Finance…". The MoU further specifies that it should:

> …consider the appropriateness of the forecasts (as most likely projections), taking into account the suitability of the underlying forecast methodology and the plausibility of the judgements embedded in the projections.

This section sets out the framework and underlying methodologies used by the Council to inform its endorsement.

### 1.3.1 The Council's Endorsement Framework

The Council's approach to endorsement focuses on whether the macroeconomic forecasts are within a range of appropriate forecasts. The range, referred to as the "endorsable range" is informed by benchmark projections prepared by the Council's Secretariat (see below). The concept of a range reflects the high degree of underlying uncertainty surrounding economic forecasting,

[5] There were occasional assessments of the Department of Finance's forecasting performance but these were not systematic. For example, see the 2010 report *Strengthening the Capacity of the Department of Finance*, available from: http://www.finance.gov.ie/documents/publications/reports/2011/deptreview.pdf

[6] As well as the Council's endorsement function, at a European level, macroeconomic surveillance has been tightened as a result of reforms to the *Stability and Growth Pact*.

including the possibility of data revisions.[7] The point forecasts contained within each Budget (and Stability Programme) remain the responsibility of the Department of Finance and it would be inappropriate for the Council to undertake the role of forecaster by insisting on specific forecast numbers.

The endorseable range is informed by the Council's work on gauging the historical level of macroeconomic uncertainty. This is reflected in fan chart analysis undertaken by the Council based on the size of past forecast errors.[8] It is recognised, however, that the pattern of previous forecast errors may not necessarily be a reliable guide to current (and future) uncertainties.

The Council does not see the determination of the range as a mechanical exercise. It is anticipated that its size will be meaningfully informed by judgements about the acceptability of different ranges of uncertainty. The size of the endorseable range will vary across time and for different variables depending on economic conditions, making a fixed numerical range inappropriate. Moreover, by not specifying an explicit range, the potential for the range to influence the setting of Department of Finance forecasts is avoided.[9]

The Council is required to assess whether the forecasts are appropriate as "most likely" projections. As explained in Box B, this makes clear what assumptions about risk are embodied in the forecast and could determine whether a specific forecast number is within the endorseable range.

[7] See MoU "…The Council recognises the inherent uncertainty surrounding forecasts and that appropriate forecasts may lie within a range…"; "While point estimates of macroeconomic variables are required as forecast outputs, both parties note that output volatility and the magnitude of revisions to Irish economic aggregates can be large."

[8] See, Annex A: Fan Charts to Represent Forecast Uncertainty, pp. 71-73, in IFAC, 2012b.

[9] If the range was known, the Department of Finance might have an incentive to try to anticipate the Council's benchmark projection and endorseable range and set its forecasts accordingly. While there is no reason to believe that this would happen in practice, the possibility may warrant some caution in indicating any specific range.

## Box B: Forecasts on a "Most Likely" Basis – the Meaning of the Budget Projections

The MoU requires the Council to assess the appropriateness of Department of Finance forecasts "…. as most likely projections". This makes explicit — for the first time — the basis of the Department of Finance's macroeconomic forecasts and provides useful information about how to interpret and evaluate the forecasts.

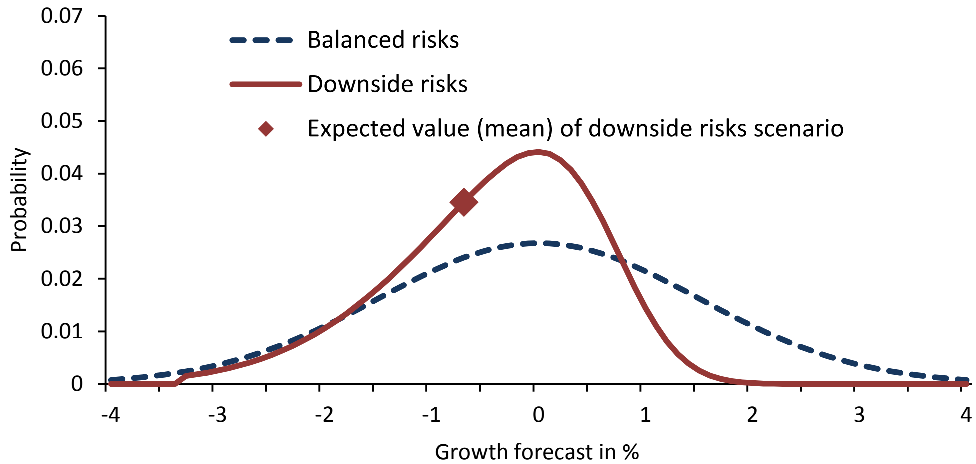
Given the volatility of the economy and the effect of unforeseen shocks, economic forecasts are inherently uncertain. A complete forecast would, therefore, give a range of outcomes with their corresponding probabilities. This could be expressed as a probability distribution, as the Council regularly shows through fan charts. However, projections are typically made and reported as a single figure. This requires a choice of a number to summarise the central tendency of the forecast distribution.

"Most likely" (modal) projections refer to the outcome with the highest probability of occurring, irrespective of where this is on the probability distribution. By contrast, a common alternative assumption is to make an expected-value forecast, i.e., the average of each possible outcome weighted by its probability. In many cases, including previous Department of Finance projections, the basis of the forecasts is not explicit.

Most-likely and expected-value forecasts can be identical or similar in many cases, for example, if the distribution of outcomes follows a Normal distribution.

However, there may be substantial differences if the distribution of risks is skewed. For example, Figure B1 shows the probability distribution for two different forecasts. The most likely outcome in both cases is zero growth. With balanced risks around the forecast (blue line), the expected-value forecast is also for zero growth. By contrast, for a forecast with risks tilted on the downside (red line), the expected-value forecast is -0.7 per cent.

### Figure B1: Comparison of a Balanced and Skewed Forecast Distribution




*Note:* Both forecast distributions have a mode of zero and a standard error of 1.5, which is equivalent to the one-year ahead forecast uncertainty in the Council's fan charts.

Are most-likely forecasts "conservative"? This depends on the distribution of risks. If downside risks predominate, the most-likely forecast is not conservative because it effectively places no weight on low probability, high impact events. By contrast, if risks are on the upside, the most-likely forecast — which will be lower than the expected-value — could be viewed as a conservative approach.

The Stability and Growth Pact requires Stability Programmes to be based "...on the most likely macro-fiscal scenario or on a more prudent scenario". The "most likely" forecasting approach embodied in the MoU effectively rules out making forecasts that are deliberately more prudent than the modal forecast.

However, from the viewpoint of setting policy, it is important to know the balance of risks, as well as the most likely forecast as these could affect the policy stance. For example, the Budget documentation includes an explicit statement of economic risks. When downside risks predominate, policymakers might want to build buffers in the public finances through policy decisions to protect against bad outcomes.

The Council's endorsement of *Budget 2014* covers the set of macroeconomic projections for 2013 and 2014, including GDP but also a range of components and other variables. Focusing on a set of variables is justified because the budgetary projections depend both on GDP and a range of other components, such as consumption for VAT or household incomes for income tax. Furthermore, a soundly-based forecast needs to be internally consistent in terms of the projections for different items, given the accounting relationships and economic links between different variables. The relevant set of forecasts includes the main expenditure components of GDP, the balance of payments, incomes, the labour market and prices.[10] The Council pays particular attention to those variables that have the greatest impact on the public finances.

In addition to the quantitative aspects of the forecast, the Council's approach to endorsement takes account of other elements, including the methodology used and the soundness of judgements involved.[11]

As set out in the MoU, the "provisional final" forecasts provided to the Council for endorsement do not include the impact of specific discretionary tax and expenditure measures included in the

[10] The MoU specifies "The set of key variables taken into account in the endorsement will cover those published in the Budget and the Stability Programme and will include, inter alia: (i) real and nominal aggregate GDP and GNP changes; (ii) changes in major expenditure components (nominal and real), namely, personal consumption of goods and services, gross domestic fixed capital formation, net expenditure by central and local Government on current goods and services, exports of goods and services, and imports of goods and services; (iii) the current account of the balance of payments; (iv) factor income and average wage compensation, employment and unemployment; and (v) HICP inflation and the GDP deflator".

[11] See IFAC, 2013a, Section 1.5.

Budget. Moreover, they may be based on an aggregate adjustment amount that differs from the final amount of adjustment depending on the timing of information availability. This created (in the case of *Budget 2014*) a difference between the forecasts underlying the Budget, which were based on an adjustment package of €2.5 billion and the forecasts endorsed by the Council based on a total package of €3.1 billion. In general, the differences between these forecasts should be small in the absence of significant policy changes at the time final budgetary decisions are taken.

### 1.3.2 Endorsement Methodology

The Council's endorseable range is informed by benchmark projections prepared by the Council's Secretariat (these are shown in Annex A). This involves a full-scale forecasting exercise and the development of a range of forecasting tools.[12] Technical analysis is complemented by the use of judgement in interpreting and adjusting the output from statistical models.

This forecasting exercise and set of benchmark projections help the Council to analyse relevant economic developments, to develop an understanding of key underlying economic trends, and to gain further insight into what forecasts could be considered as appropriate and endorseable. The benchmark projections draw heavily on the work of the Council's Secretariat and do not necessarily represent a collective forecast by the Council.

To ensure that the Council is able to provide an independent analysis of, and to effectively challenge the Department of Finance forecasts, the benchmark projections are completed *before* the Council engages in in-depth endorsement meetings with the Department of Finance.

The Council's benchmark projections may differ from the forecasts produced by the Department of Finance. However, the forecasts could still be endorseable either because (i) the differences are sufficiently small to be within the endorseable range, or (ii) if the Department of Finance provides convincing reasons for forecasts further from the benchmark projections. These reasons could include incorporating data or information that the Council did not have when making its benchmark projections, or a strong justification for different judgements to those embodied in the benchmark.

[12] This is consistent with the requirement of the MoU that "The Council will seek to develop and maintain the technical capacity and analytical expertise to evaluate in detail macroeconomic projections for Ireland. The Council will communicate regularly as to its approach to the endorsement function, including the analysis underpinning its assessments."

The basic framework underlying the benchmark projections is a system of equations mirroring the expenditure side of the national accounts with GDP and GNP derived using a "bottom up" approach from their components. In some cases, these components are in turn derived from forecasts of their sub-components. For example, investment is built up from investment in housing, other building and construction, and machinery and equipment. Demand components are linked to labour market variables, incomes and the output side of the economy. These linkages aim to achieve consistency across the various elements of the forecast.

Economic projections are conditional on a range of exogenous assumptions. These include interest rates, exchange rates, oil prices and growth rates outside of Ireland.[13] The assumptions used in the benchmark projections are broadly similar to those underlying *Budget 2014* and follow standard forecasting practices. For growth in Ireland's major trading partners (Euro Area, UK and US), the latest data were taken based on estimates from agencies such as the OECD, the IMF and the European Commission.

The benchmark projections are based around a "suite of models" approach. Given the uncertainty around the forecasts from any single model, it is prudent to look across a range of forecasts from different economic models to build up a more robust picture. It is generally accepted that the average across a range of forecast models outperforms and is more robust than relying on a single model (Bates and Granger, 1969; Stock and Watson, 1999). The Council will continue to develop this approach.

The models used include some based on the equations used by the Department of Finance and some developed by the Council's Secretariat. In some cases, Department of Finance models have been refined or adjusted. In contrast to some models that are estimated to maximise statistical fit over the historical sample, the Council's approach was to evaluate models by their forecasting performance. This is done by estimating equations up to some past date and then calculating the forecast errors if those estimates had been used to make forecasts. This approach more closely mirrors what forecasters have to do in real time.

[13] For exchange rates, oil prices and Euribor interest rates, the average of the ten days prior to the forecast exercise is calculated and then used as the value that applies over the remainder of the current quarter. For the remaining forecast horizon, Euribor and oil price assumptions are based on market forward rates. Demand in Ireland's major trading partners is also an exogenous assumption. This is calculated on the basis of trade shares over the period 1992 to 2012 which were fixed for the forecast horizon. Trade shares are then combined with the latest forecasts of import demand taken from various international sources in order to derive measures of external demand.

The benchmark projections rely heavily on quarterly CSO data, specifically from the *Quarterly National Accounts* and the *Quarterly National Household Survey*, both in the estimation of models and forecasting. Although quarterly data in Ireland are volatile and prone to revision, the volatility is part of the dynamics of the economy and should not be ignored. Furthermore, understanding the quarterly dynamics – within the constraints of the data – is necessary to make accurate predictions for annual National Accounts variables. The emphasis on quarterly data was a key input into the benchmark projections for 2013 (as well as carry-over effects into 2014 – see Box C).

This model-based analysis is then augmented with judgement to come to the final set of benchmark projections. This approach is in line with that taken by the major forecasting agencies in Ireland such as the Central Bank of Ireland, the Economic and Social Research Institute (ESRI) and the Department of Finance and internationally, by the IMF, OECD and European Commission.

The use of judgement is necessary for two reasons. Firstly, there are many factors affecting the economy in the short-term that are not described by macroeconomic models. For example, investment in Ireland is heavily influenced by aircraft purchases. The timing of these purchases reflects firm-specific developments in a small number of individual companies. These have to be taken into account outside of the normal macroeconomic framework. Secondly, macroeconomic models and the available data provide only a partial description of the economy that needs to be augmented by well-reasoned judgements to generate forecasts that may be more accurate. For example, the current balance sheet recession has many unprecedented features that cannot be captured using models based on historical data.

An important additional input into the preparation of the benchmark projections involved a round of discussions with other forecasters, coming from a wide range of different perspectives.[14] The purpose of these discussions was to get a range of views on issues forecasters were dealing with, both data-related as well as substantive economic matters.

[14] In September 2013, the Secretariat had discussions with forecasters at the Central Bank, the European Commission, the ESRI, the IMF, Davy, Goodbody, Investec, the Nevin Economic Research Institute and Mr Joe Durkan of University College Dublin. The Secretariat also met with the CSO to gain further insights into topical issues and to gain more information on the statistical treatment of a number of key variables.

## 1.4 Endorsement of the *Budget 2014* Projections

The first endorsement exercise by the Council covered the *Budget 2014* forecasts for 2013 and 2014 and was carried out under the terms of the MoU. The Department of Finance provided a good level of cooperation to the Council, including in responding to questions and requests for additional information.[15]

The timeline underlying the endorsement process is set out in Figure 1.1.

Figure 1.1: Timeline for the Endorsement of *Budget 2014* Projections

| Date | |
|---|---|
| **23-24 September** | Benchmark projections were finalised in advance of receiving forecasts for *Budget 2014* from the Department of Finance. |
| **24 September** | The Council received the preliminary set of "provisional final" forecasts from the Department in line with requirements under the MoU. |
| **25 September** | These forecasts were presented by Department of Finance staff to the Council's Secretariat explaining the underlying reasoning and answering clarifying questions. Two Council members also participated in the meeting. |
| **29 September** | The Council met to discuss the Department of Finance forecasts. |
| **30 September** | Department of Finance staff met with the full Council and Secretariat to present and answer substantive questions on the "provisional final" forecasts. These forecasts were unchanged from those provided to the Council the previous week. The Council raised questions on a number of issues. |
| | Following the meeting, the Department provided further clarification on their forecast for consumption. The Council subsequently decided that a "significant reservation" (as per the MoU, section 5) remained over the consumption forecast. |
| **1 October** | As specified in the MoU, the Council Chair communicated its "significant reservation" to Department staff. |
| **1-3 October** | The Department provided further clarification on its consumption forecast and committed to including information on the potential for upward revisions to *Quarterly National Accounts* personal consumption data for the first half of 2013 in the Budget documentation. |
| **4 October** | The Chair of the Council issued a letter to the Department of Finance endorsing the set of macroeconomic forecasts for 2013 and 2014 in *Budget 2014*. This letter was published on 9 October. |

[15] The Council's Secretariat also met with Departmental staff early in the summer to discuss the main equations and data used in their macroeconomic forecasts.

As described earlier, the framework and methodology for the process were developed over the summer. This work included the preparation of a set of benchmark projections that were finalised on 24 September, incorporating the *Quarterly National Accounts* release of 19 September but *before* receiving the preliminary set of forecasts specified in the MoU from the Department of Finance. These benchmark projections, which were not shared with Department of Finance staff, are set out in Annex A.

Following the receipt of the Department of Finance's preliminary forecasts and a presentation of these projections to the Council's Secretariat and some Council members, the Council met to consider the preliminary forecasts. The Council's examination of the forecasts included comparing them to the benchmark projections and against its sense of the endorseable range, as well as assessing the consistency of the overall set of projections. Subsequently, Department of Finance staff presented to the full Council and Secretariat the "provisional final" forecasts, which were unchanged from the preliminary forecasts presented the week before.[16] These forecasts had previously been shared with Ministers by Departmental staff. The Council questioned Departmental officials, based on issues identified by the Council in its earlier deliberations, and requested some additional information.

The overall forecasts for real GDP growth for 2013 and 2014 in the Department's "provisional final" forecasts were quite close to the benchmark projections. However, as is evident from Annexes A and B, the composition of growth differed. In particular, the benchmark projection for exports was much stronger, and that for consumption much weaker, compared with the Department's forecast.[17, 18] Given the nature of short-term forecasting, some divergences were to be expected and the Council's endorsement methodology is designed with that in mind.

In the case of exports, the Council found explanations provided by Department of Finance staff for a weaker forecast to be plausible. These explanations included further information available to Department staff about how to include developments in the crucial pharmaceuticals sector (the so-

[16] These forecasts were subsequently presented to the Joint Oireachtas Committee on Finance, Public Expenditure and Reform on 8 October 2013.

[17] The benchmark projections include export growth of 0.6 per cent and 4.3 per cent respectively for 2013 and 2014 compared with -0.6 per cent and 1.9 per cent in the Department of Finance's forecasts.

[18] The benchmark projections include consumption growth of -0.4 per cent and 0.4 per cent respectively for 2013 and 2014 compared with -0.2 per cent and 1.1 per cent in the Department of Finance's forecasts.

called “patent cliff”) in their export projections.[19] In light of these clarifications, the Council viewed the export growth forecasts as within an appropriate range.

The Council remained concerned, however, about the internal consistency of the provisional final forecasts for personal consumption expenditure. Taking the published CSO quarterly estimates of a decline in consumption in 2012Q4 and 2013Q1 and modest growth in 2013Q2 as given, the Department’s projections for annual growth in 2013 appeared to imply implausibly high growth rates in the third and fourth quarters of the year. The quarterly profile implied by taking the CSO data as given looked problematic even in the context of a likely bounce back in consumption in the second half of 2013 as a result of some sector-specific factors (discussed in Section 1.5.1). The relationship between annual growth rates and quarterly growth profiles is explored in more detail in Box C.

### Box C: Annual GDP Growth and Carryover Effects

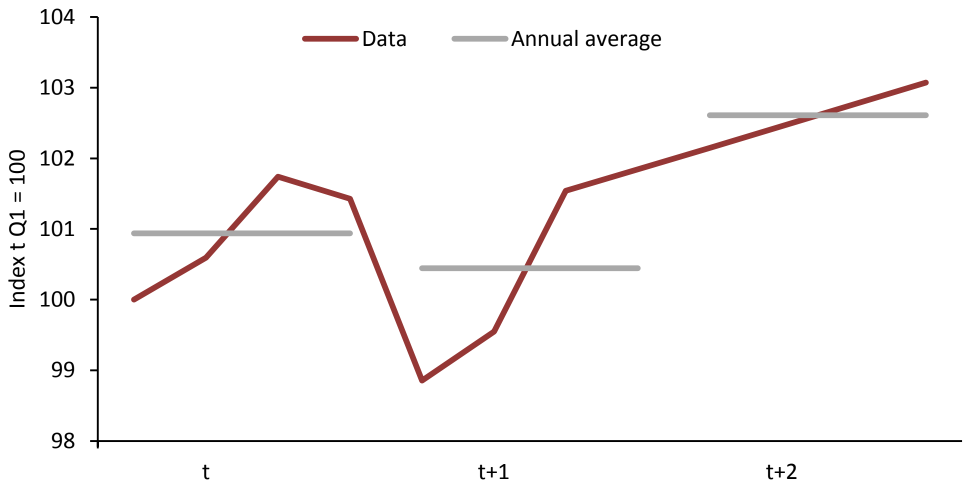
The Budget includes forecasts for annual GDP and other variables, both in terms of their level and the growth rate between calendar years. Department of Finance forecasts are made for these annual aggregates.

This is a standard approach. However, it can lead to growth projections that are unintuitive or appear misleading given the irregular (seasonally-adjusted) pattern of quarterly growth in the economy measured in the National Accounts. Furthermore, an annual growth rate covers developments over 8 quarters and can therefore give a rather backward-looking picture of growth around turning points. Therefore, care is needed in interpreting annual growth forecasts as these may not closely match the underlying pattern in the quarterly data.

Taking a hypothetical example, the (seasonally-adjusted) aggregate in Figure C1 has an irregular pattern of growth. However, the aggregate clearly reaches a trough at the beginning of year t+1 and expands continuously thereafter to reach a higher level by the end of t+1 than at the end of period t. However, the annual average level over the four quarters of year t+1 is actually *lower* than it was in period t and therefore the annual growth rate registers a *contraction* between t+1 and t, despite the recovery that is occurring during that year. This is an example of how annual growth rates may present a misleading picture of the underlying quarterly developments.

[19] Developments in the pharmaceuticals sector were already factored into the benchmark projections but in a different way.

FIGURE C1: AN ECONOMIC AGGREGATE WITH IRREGULAR DATA




At the same time, the increase in the level of the aggregate during the course of year t+1 means that, even if the aggregate were to stay at that level it reaches by the end of t+1 throughout t+2, there would be a strong annual growth rate registered in t+2 even with no actual growth during the course of that year. This is known as the "carryover" effect.

For the example above, these effects are shown in Table C1.This shows the negative growth measured on an annual growth basis in t+1 and the very strong growth in t+2, despite only modest assumed quarterly improvements during that year. The table also shows growth rates measured as the change between the fourth quarter of one year and the fourth quarter of the preceding year. This can give a clearer picture of how much the economy has grown during the course of the year.

TABLE C1: HYPOTHETICAL EXAMPLE OF GROWTH AND CARRYOVERS

| % Change | t | t+1 | t+2 |
|---|---|---|---|
| **Annual Growth** | -0.3 | -0.5 | 2.2 |
| **Of which carryover** | | 0.5 | 1.4 |
| **Q4/Q4 Growth** | 0.8 | 0.4 | 1.2 |

An implication of carryover effects is that annual growth rates are very sensitive to growth rates in the early quarters of the year – varying one-for-one with growth in the first quarter (other things equal) – but depending much less on developments towards the end of the year (varying one-for-four with growth in the fourth quarter). However, the carryover for the following year is strongly affected by growth in the final quarters of the previous year.

It is important for forecasts to reflect these underlying developments in quarterly terms in the formulation of annual growth projections. Otherwise, there is a risk that annual growth rates that seem reasonable actually imply quarterly growth profiles that are implausible, suggesting that the annual growth forecasts are in fact unlikely. While a lot of the variation in early CSO estimates of the quarterly profile may be revised away, much of the volatility in expenditure from quarter-to-quarter is a real feature of a volatile economy such as Ireland's and needs to be taken into account for annual forecasts to be accurate.

The Council's "significant reservation" on this aspect was subsequently communicated to Department staff on an informal basis, as set out in the MoU. In response, Department officials agreed to explain, as part of the *Budget 2014* documentation, their rationale for the quarterly profile implied by their annual consumption forecasts, and in particular to reference the potential for upward revisions to consumption data for the first half of 2013. As a result, the *Budget 2014 Economic and Fiscal Outlook* included the following statement:

> The quarterly profile for personal consumption expenditure has been somewhat erratic over the course of this year, in part due to a structural change in the vehicle registration system which has had the effect of smoothing the purchase of vehicles over the course of the year. Initial estimates for consumer spending for the first quarter were subsequently revised upwards, and the possibility of further revisions cannot be excluded, particularly in an environment in which high-frequency data (core retail sales) point to a relatively strong pace of expansion in the third quarter.[20]

An upward revision in the CSO consumption data for the first half of 2013 – a by no means unlikely possibility given the normal volatility and frequency of revisions to such data – would reduce the implied growth needed in the second half of the year to meet the Department's forecast for consumption growth in 2013. On this basis, the Council concluded that its concerns had been adequately addressed and a letter endorsing the set of forecasts in *Budget 2014* was sent by the Chair of the Council to the Secretary General of the Department of Finance on 4 October 2013.

## 1.5 An Assessment of Forecasts Contained in *Budget 2014*

### 1.5.1 Macroeconomic Forecasts in *Budget 2014*

The "provisional final" macroeconomic forecasts underlying *Budget 2014* were endorsed by the Council (see Annex B). The macroeconomic outlook was, however, revised between the endorsement and the publication of *Budget 2014*, reflecting a lower level of consolidation in the Budget.[21] The Department is expecting real GDP growth of 0.2 per cent in 2013 and 2 per cent in 2014 (Table 1.1).

[20] *Budget 2014*, page C.6.

[21] The provisional final forecasts endorsed by the Council assumed €3.1 billion in consolidation measures for 2014. The actual consolidation was €2.5 billion.

TABLE 1.1: *BUDGET 2014* MACROECONOMIC FORECASTS

| % change unless otherwise stated | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| Real GDP | 0.2 | 0.2 | 2.0 | 2.3 | 2.8 |
| Real GNP | 1.8 | 1.0 | 1.7 | 1.7 | 2.1 |
| Consumption | -0.3 | -0.2 | 1.8 | 1.2 | 1.1 |
| Investment | -1.0 | 4.9 | 6.8 | 5.9 | 5.1 |
| Government | -3.7 | -0.9 | -1.9 | -1.5 | 0.2 |
| Exports | 1.6 | -0.6 | 1.9 | 2.7 | 4.2 |
| Imports | 0.0 | -0.4 | 1.5 | 2.1 | 3.5 |
| Current Account (% of GDP) | 4.4 | 4.4 | 4.0 | 3.8 | 3.7 |
| Employment | -0.7 | 1.6 | 1.5 | 1.3 | 1.3 |
| Unemployment Rate (%) | 14.7 | 13.5 | 12.4 | 11.8 | 11.4 |
| Inflation (HICP) | 2.0 | 0.7 | 1.2 | 2.0 | 2.0 |
| Nominal GDP (€ billions) | 164.0 | 165.9 | 170.6 | 177.0 | 184.7 |

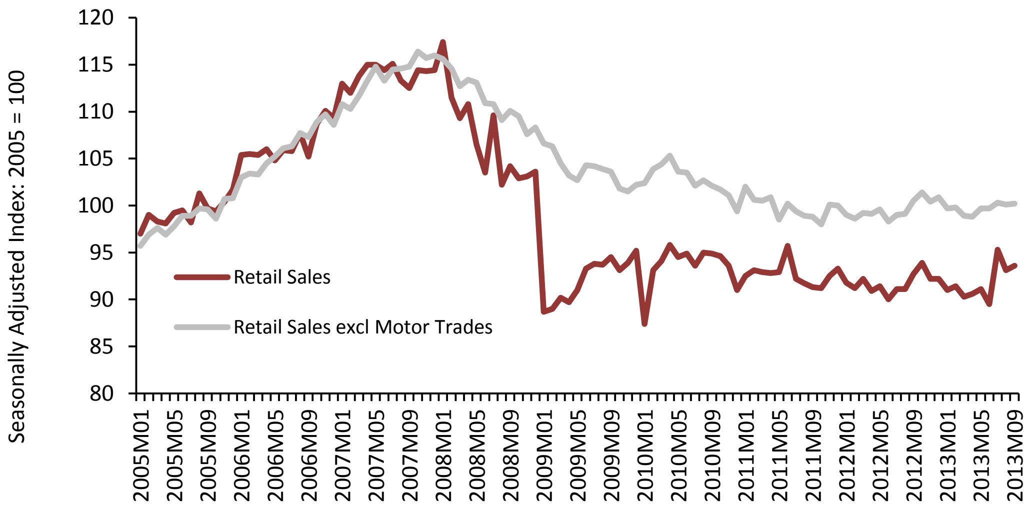
The growth outturn for 2013 is likely to be depressed by a number of specific factors, including the "patent cliff" in the pharmaceutical sector reducing exports, and one-off factors that reduced domestic demand in the first half of the year.[22] This comes against the background of on-going balance sheet repair and budgetary consolidation, as well as anaemic demand in some of Ireland's main trading partners. However, these headwinds are expected to ease gradually over the forecast horizon enabling a pick-up in net exports and domestic demand into 2014, boosted by the unwinding of some sector specific factors affecting 2013.

Personal consumption expenditure growth is expected to contract in 2013. This reflects a weak outturn for the first half of the year, in part due to changes in the car registration system that depressed sales. This impact should unwind in the second half of the year; more recent indicators,

[22] *Quarterly National Accounts* data for the first half of 2013 were weak with real GDP down 1.1 per cent year-on-year. The volume of exports of goods and services declined by 1.5 per cent in the first half of 2013 (twice the rate of decline of imports) with personal consumption expenditure down by 1.2 per cent over the same period.

such as the retail sales index (Figure 1.2) are consistent with a pick-up in consumption spending.[23] For 2014, positive consumption growth is envisaged helped in part by stronger real disposable incomes. While high levels of debt and fiscal consolidation will continue to weigh on consumption, the improved outlook for the labour market (and disposable incomes in turn) should encourage spending. The personal savings ratio is also expected to decline as confidence improves.

FIGURE 1.2: RETAIL SALES INDEX




Investment spending is expected to grow at a healthy rate in 2013 and to accelerate in 2014. Data for the first half of the year point to a strong underlying recovery in most components of investment, although very weak aircraft purchases kept overall growth subdued (Figure 1.3).[24, 25] Output in the construction sector appears to be strengthening, although overall housing and construction investment continues to be at very low levels and accounts for a much smaller share of investment than during the pre-crisis period. The positive trends in investment, including favourable indications on foreign direct investment inflows, suggest stronger growth in capital formation in 2014.

Government spending is expected to contract by 0.9 per cent in 2013 and by 1.9 per cent in 2014, partly reflecting the effect of current and past consolidation measures. The overall level of

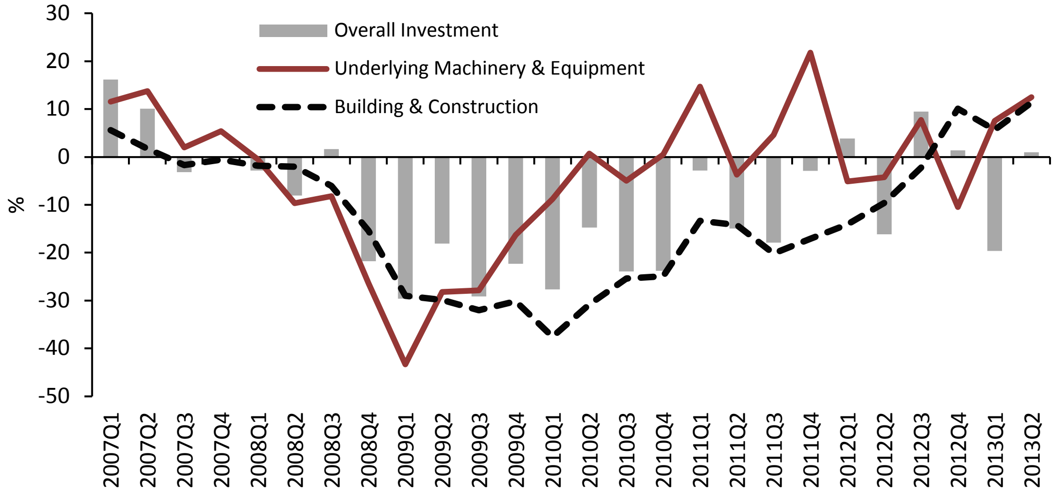
[23] Retail sales data to end-September show a 2.5 per cent annual rise in the volume of total retail sales in the third quarter of the year. Retail sales excluding motor trades were up 0.6 per cent over the same period.

[24] Excluding transport equipment, investment in volume terms was up 9.1 per cent in the first half of the year. Building and construction investment grew by 8.5 per cent with machinery and equipment (excluding transport) up 9.8 per cent.

[25] Company financial statements indicate that significant future aircraft purchases are planned and it is assumed that some deliveries will be taken in the second half of 2013.

consolidation in *Budget 2014* was reduced by €0.6 billion to €2.5 billion relative to plans prior to the Budget. This is expected to exert a small positive effect on GDP growth.[26]

FIGURE 1.3: ANNUAL CHANGES IN INVESTMENT




*Note:* Underlying Machinery & Equipment Investment excludes transport equipment.

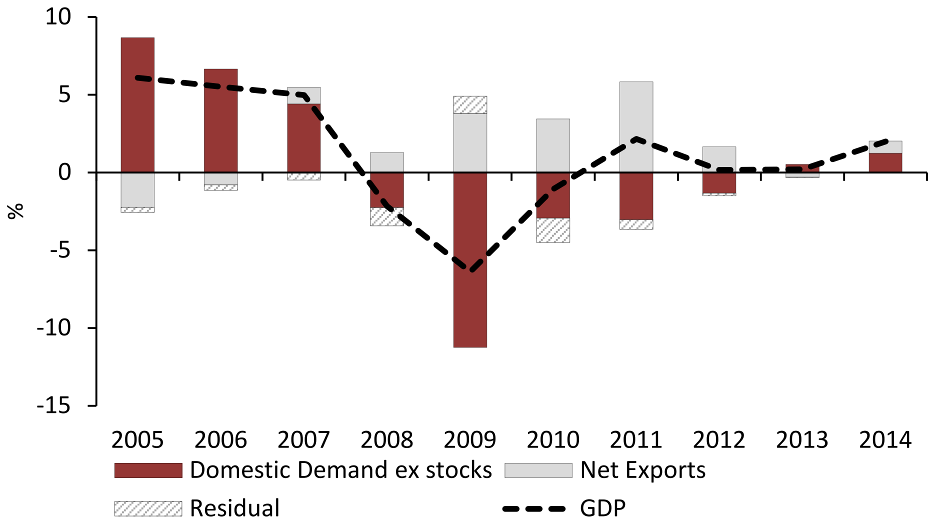
Exports of goods and services were very weak in the first half of the year in large part due to the effects of the "patent cliff". This is occurring as the patents on a number of key domestically produced pharmaceuticals products expire, leading to a reduction in the value of goods exports. Pharmaceutical exports account for around half of Irish manufactured goods exports. The precise speed and extent of the patent cliff effects are not fully known, although the Department of Finance has provided some detailed analysis.[27] These developments have made it more difficult to forecast exports and have contributed to a breakdown in the historic relationship between exports and their main determinants. As a consequence, goods exports are likely to be affected significantly over the next few years. In contrast, services exports (which now account for around half of total exports) are expected to remain robust. Over the forecast horizon, total exports should benefit from a strengthening in demand in Ireland's major trading partners, domestic competitiveness improvements and the resilience of the services sector.

[26] This can be seen from the fact that GDP growth in 2014 was revised up from 1.8 per cent to 2 per cent between the forecasts endorsed by the Council (which assumed consolidation of €3.1 billion) and *Budget 2014*.

[27] See Enright and Dalton (2013), *The Impact of the Patent Cliff on Pharma-Chem Output in Ireland,* available from: http://www.finance.gov.ie/viewdoc.asp?DocID=7850&CatID=45&StartDate=1+January+2013

Imports are projected to contract in 2013 before growing in 2014, reflecting the more positive outlook for exports and personal consumption. Overall, net exports are expected to contribute negatively to growth in 2013, before turning positive in 2014 (Figure 1.4).

FIGURE 1.4: CONTRIBUTIONS TO GROWTH[28]



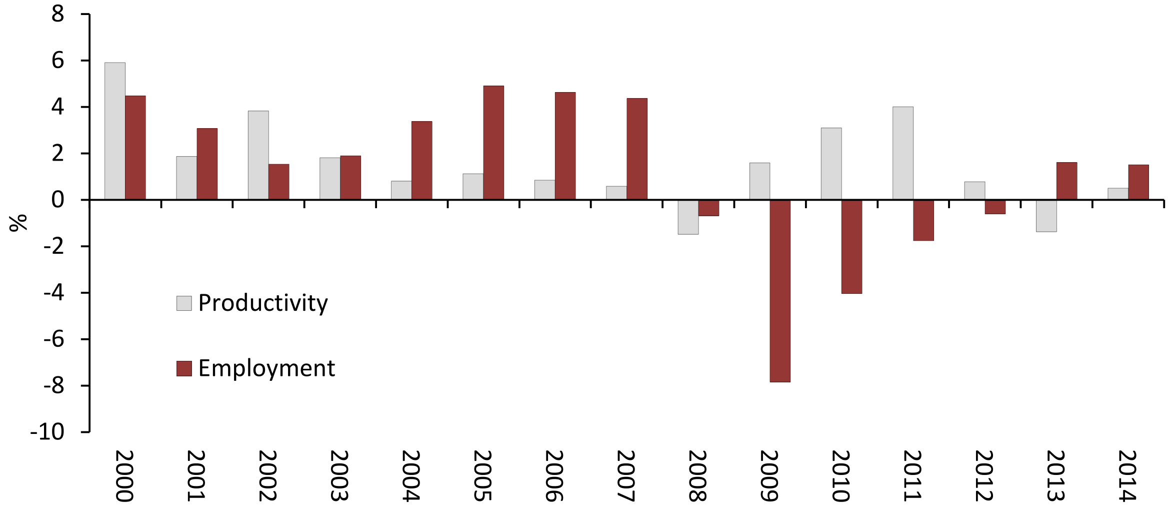

Labour market data have been positive over the past year, despite the relative weakness of GDP growth. Economy-wide employment grew by 1.5 per cent in the first half of the year according to the *Quarterly National Household Survey* (QNHS). Employment increased in 9 of the 14 sectors in the second quarter of 2013, relative to the previous year. More recent data from the live register show a continued decline in the unemployment rate.[29] The positive employment developments signal that firms are becoming more optimistic in terms of demand prospects. In contrast, data from the survey on *Earnings Hours and Employment Costs* (EHECS) paints a less positive picture with very weak earnings growth (although inflation remains subdued). This points to the need for caution in assessing employment prospects.

Taken together, the strength of employment relative to output growth implies an unusually large decline in measured productivity in 2013 (Figure 1.5). This may partly reflect the unusual decline in activity in pharmaceuticals, typically a high value-added sector with low employment.

[28] Forecast years based on the outlook in *Budget 2014*.

[29] In the three-month period to end-October, the number of persons on the register declined by 2.2 per cent quarter-on-quarter. In October, the standardised unemployment rate was 13.2 per cent (down from 14.3 per cent in October 2012).

FIGURE 1.5: ECONOMY-WIDE PRODUCTIIVTY AND EMPLOYMENT GROWTH




For 2015 and 2016, the forecasts in *Budget 2014* envisage average annual GDP growth of 2.6 per cent. These projections were not subject to endorsement by the Council. The forecasts essentially repeat the outlook presented in most two- to three-year ahead forecasts for the Irish economy. More favourable external demand conditions and a sustained improvement in domestic expenditure are the main underlying factors.

An assessment of Ireland's growth prospects must balance the recent positive signals of recovery – employment growth, stabilisation in retail sales, underlying investment growth – against continuing concerns about the persistence of the "balance-sheet recession" (Box D). The unpredictable dynamics of a balance-sheet recession means that there remain significant risks around current projections for the economy, as evidenced by a continued pattern of downward revisions to growth forecasts (see IFAC, 2012a, 2012b, and 2013a).

### Box D: The Dynamics of Balance Sheet Recessions

This box reviews the underlying dynamics of Ireland's post-crisis balance sheet recession. This remains a significant downside risk to the current macroeconomic forecasts.

There are a number of adverse feedback loops that typify a post-crisis balance sheet recession (Figure D1).[30] Stressed balance sheets in the Government, financial and non-financial sectors tend to interact in ways that slow post-crisis growth. Starting with the Government sector, Ireland's gross debt as a share of GDP rose from about 25 per cent at the end of the boom to close to 125 per cent today. A significant proportion of this increase was due to the direct costs of covering losses of the banking system, with the remainder due to the sharp rise in the deficit as the economy contracted and property-related revenues collapsed. These debt and deficit developments – together with uncertainty about future prospects – led to a loss of the Government's market borrowing capacity, which in turn fed back to the banking system (through lost credibility of liability guarantees, the credibility of capital backstops, and direct losses on Government bonds) and also to the real economy (through the need for pro-cyclical retrenchment and heightened uncertainty).[31, 32] The two-way interaction between the Government and the banks is sometimes referred to as the "diabolic loop".[33]

A feature of a balance-sheet recession is that households and businesses attempt to repair their balance sheets by curtailing spending, reducing debt and selling assets (Koo, 2009). While these actions might be rational at the individual level, they can lead to a cascade of falling incomes and asset prices, worsening the incomes and balance sheets of other businesses and households in the economy. The forces of retrenchment are heightened by the effects of uncertainty in the face of the unpredictable dynamics of the recession, and also by the fact that important trading partners may be simultaneously suffering similar problems.[34]

Figure D2 shows the large rise in the gross saving rate during the crisis, although there are recent signs that the rate has fallen back.[35] Figure D3 shows the rapid build-up of household debt prior to the crisis. The nominal value of household debt has been substantially reduced in recent years, in part because many households remain credit constrained. However, debt has fallen only slightly relative to disposable income given the spillovers from household-

[30] Reinhart and Rogoff (2009) document the long history of weak growth performance following financial crises. IMF (2013) examines the adverse interactions between high levels of debt in the Government, financial and non-financial private sectors of the economy.

[31] See Zoli (2013) for an examination of the links between sovereign risk and the funding costs faced by Italian banks during the crisis.

[32] Jordà *et al.* (2013) examine how the adverse impacts of the credit-driven boom-bust cycle are conditioned by Government debt levels in the aftermath of a financial crisis.

[33] See, e.g., Brunnermeier *et al*. (2011).

[34] Inflation often helped to lower the real burden of household and business debt in past financial crises. Inflation in Ireland and across the Euro Area has remained extremely low, although persistent deflation has been avoided.

[35] CSO, Institutional Sector Accounts measure.

level balance-sheet repair to domestic demand.[36]

FIGURE D1: ADVERSE FEEDBACK LOOPS

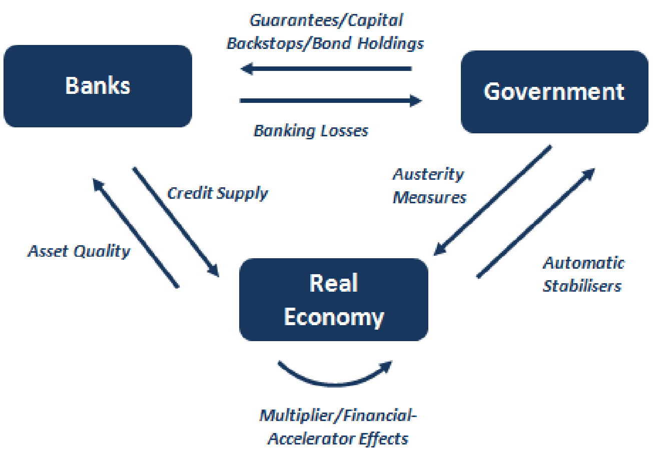
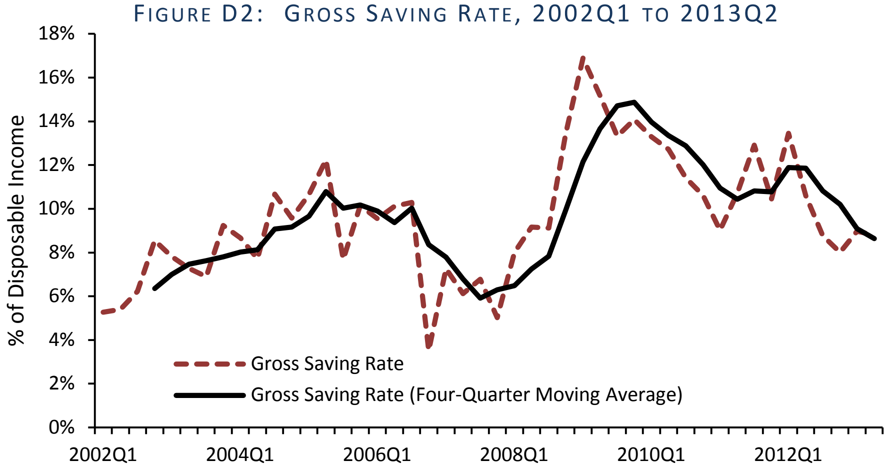



FIGURE D2: GROSS SAVING RATE, 2002Q1 TO 2013Q2




*Source:* CSO.

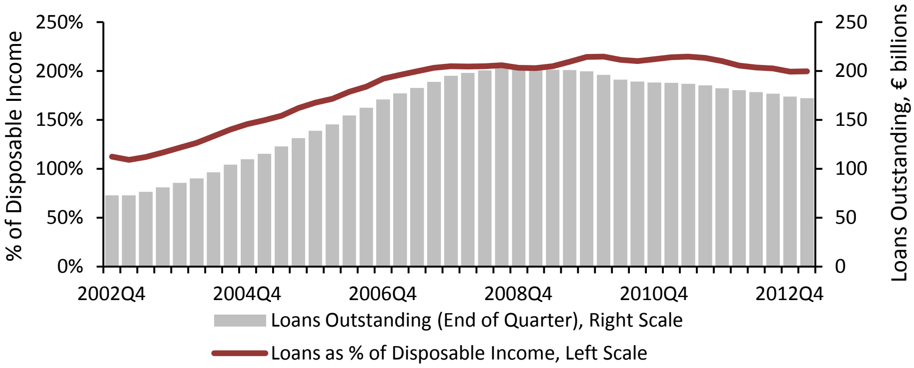
A central feature of Ireland's balance-sheet recession has been the impairment of balance sheets in the banking system. A two-way positive interaction between credit and property prices fuelled the initial price and construction bubbles. In the wake of the bursting of those bubbles, this interaction has worked in reverse. While the impairment of bank balance sheets is not the only contributor to weak credit growth – other factors are the impaired balance sheets of potential borrowers and weak credit demand – there is evidence that banks across the Euro Area have tightened lending standards and raised interest margins as they themselves attempt to deleverage and improve operating income in the face of

[36] See IMF 2012 for an examination of how the balance-sheet recession has affected the consumption of Irish households. See Mian *et al*. (2013) for county-level evidence from the United States on how marginal propensities to consume are affected by household-balance-sheet health.

uncertain capital positions and funding conditions.

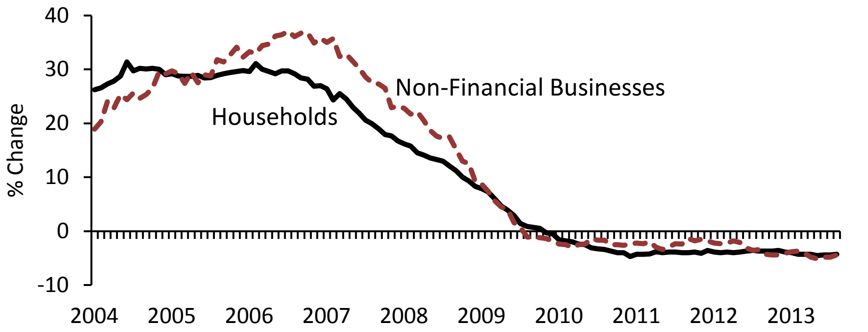
Figure D4 shows the rapid pre-crisis growth and then contraction in the stock of credit extended to households and businesses.[37] A significant part of the contraction reflects the paying down of loans as part of the balance-sheet repair process. Concerned about risks to solvency, businesses may forgo profitable investment opportunities, instead choosing to pay down debt and build liquidity reserves.

FIGURE D3: HOUSEHOLD LOANS OUTSTANDING




*Note:* Disposable income equals sum over last four quaters.
*Sources:* Central Bank of Ireland (Loans); Central Statistics Office (Disposable Income).

FIGURE D4: GROWTH RATES IN CREDIT TO THE PRIVATE SECTOR, JANUARY 2004 TO AUGUST 2013, PERCENTAGE CHANGE FROM SAME MONTH IN PREVIOUS YEAR

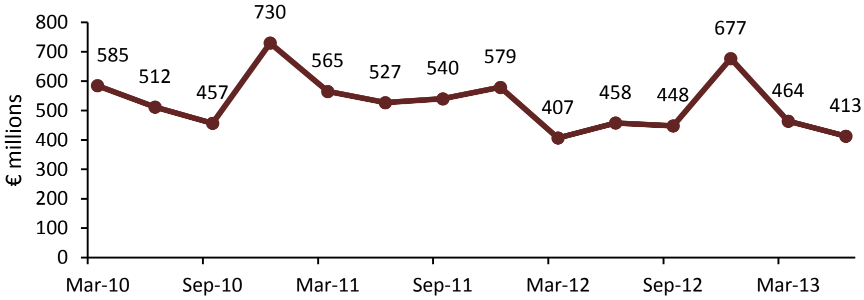



*Source:* Central Bank of Ireland.

In terms of supporting domestic demand growth, it is important that new lending continues to take place. Figure D5 shows the recent evolution in gross new lending to the non-financial/non-property SME sector. This lending has not yet shown significant signs of recovery.

[37] There is a large literature in macroeconomics that studies the effects of credit availability on business-cycle dynamics. The credit-channel of shock transmission focuses on the way that shocks are amplified through "financial-accelerator" effects, as balance sheets become impaired and credit rationing increases (see, e.g., Bernanke *et al*.1994; Bernanke and Gertler, 1995).

FIGURE D5: NEW CREDIT ADVANCED TO NON-FINANCIAL/NON-PROPERTY IRISH SMEs, MARCH 2010 TO JUNE 2013




*Note:* Gross new lending is the amount of new credit facilities drawn-down during the quarter by SME counterparties, i.e. where this credit facility was not part of the outstanding amount of credit advanced at the end of the previous quarter. Gross new lending is defined to exclude renegotiations or restructuring of existing loans.

*Source:* Central Bank of Ireland.

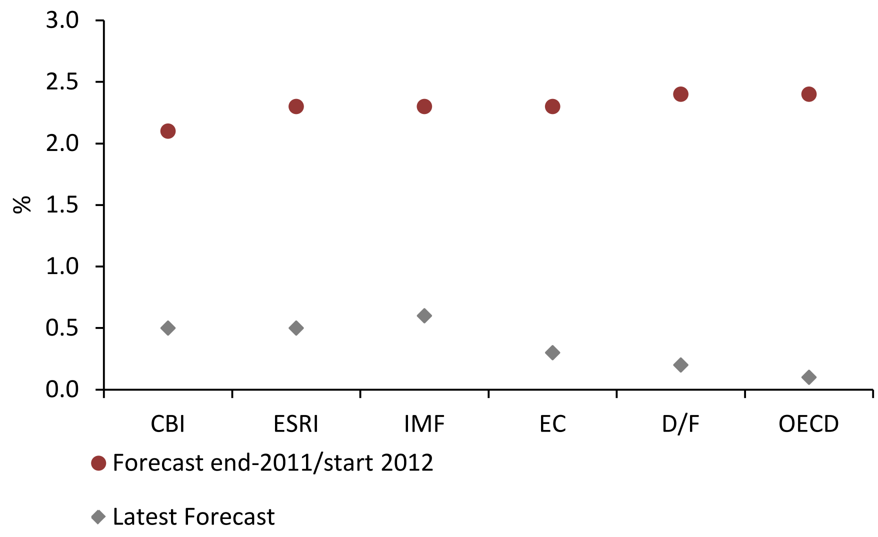
Set against these adverse dynamics, stabilising forces should eventually gain momentum, as balance sheets are repaired, the stock of postponed spending increases, liquidity targets are reached and fears about the future gradually recede. The restoration of the Government's own creditworthiness is likely to be a necessary stabilising force, helping to underpin confidence in the banking system, and lessening fears that it will be unable to effectively phase required fiscal adjustments over time.

### 1.5.2 *BUDGET 2014* FORECASTS COMPARED WITH OTHER AGENCIES

The *Budget 2014* forecasts are generally in line with the broad consensus among the forecasting community that the economy will grow modestly this year but that GDP growth will pick up in 2014 (Annex C). Most agencies foresee growth of about 0.5 per cent in 2013 with growth of approximately 2 per cent forecast for 2014. Exceptions include the ESRI who foresee real GDP growth of 2.6 per cent in 2014 with the European Commission expecting growth of 1.7 per cent.

As noted in previous *Fiscal Assessment Reports*, forecast agencies have consistently revised down forecasts over time. This could reflect an underestimation of downward pressures created by the balance sheet recession as well as weaker than expected international growth outturns. This pattern has continued during the second half of 2013 with downward revisions to growth projections. In Figure 1.6, current estimates of growth in 2013 by the main forecasting agencies are shown relative to forecasts made at the end of 2011/beginning of 2012.

FIGURE 1.6: FORECAST FOR REAL GDP GROWTH IN 2013




## 1.6 UNCERTAINTY SURROUNDING FORECASTS

Irish macroeconomic forecasts are the subject of considerable uncertainty. This partly reflects the inherent volatility in the economy, the unknown impact of the balance sheet recession as well as other domestic and global financial risks. The presence of significant one-off factors affecting consumption and investment in 2013, as well as the "patent cliff", add to these uncertainties.

*Budget 2014* reports on a number of short- and medium-term macroeconomic risks. It notes that "...risks to the central forecast emanate from both external and internal sources, and appear to be tilted to the downside".[38] This clear statement of the overall balance of risks is welcome. It improves transparency and communication around the forecasts. The downside risks include the fragility of the emerging recovery and risks to consumption from high levels of debt. Upside risks include a stronger rebound in export demand and a more pronounced recovery in domestic demand. The risk that the negative effect on exports from the pharmaceuticals sector could be greater than anticipated is also noted.

The Council itself assesses that risks remain tilted to the downside, although the potential for forecast errors in either direction around turning points is high and upside risks should not be overlooked. An important source of risks is the possible re-intensification of financial stability

[38] Given that the Budget forecasts are on a "most likely" basis (see Box B), this suggests that it is more likely than not that the macroeconomic outturns will be weaker than the projections if standard assumptions about the risk distributions are applied. (That is, the expected value of the macroeconomic variables would be lower than the *Budget 2014* most likely projections).

tensions in the Euro Area, not least in view of the forthcoming asset quality review and stress tests of the banks (see Chapter 2). Looking further ahead, the medium-term growth potential of the Irish economy is highly uncertain in the wake of the crisis.

The Council's fan chart analysis provides some gauge of forecast uncertainty, albeit based on historical forecast errors. By construction, the fan charts assume that risks are balanced. A fan chart based on the GDP growth projections in *Budget 2014* is shown in Figure 1.7.

FIGURE 1.7: FAN CHART FOR REAL GDP GROWTH