



**Irish Fiscal
Advisory Council**

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Summary Assessment

Introduction

This report is the third assessment by the Irish Fiscal Advisory Council. It assesses the macroeconomic and budgetary projections set out by the Government in the *Stability Programme Update (SPU) 2012*. In advance of *Budget 2013*, the appropriateness of the fiscal stance over the period to 2015 is also assessed. In a preliminary exercise, the report also considers the longer-term implications of compliance with the fiscal rules in the Fiscal Responsibility Bill (FRB).

A number of themes are developed. These include the *uncertainty* that surrounds economic and budgetary forecasts, the *large size of remaining adjustments required for debt sustainability* and the importance of *transparency* in the recording of revisions in the Government's fiscal accounts and plans.

Assessment of Macroeconomic Forecasts

To assess the macroeconomic forecasts, the report: (i) reviews the performance of past forecasts; (ii) compares the *SPU* forecasts with the contemporaneous forecasts of other agencies; (iii) examines the recent pattern of forecast revisions; and (iv) graphically illustrates the uncertainty surrounding official forecasts using a fan chart.

The National Income and Expenditure Accounts for 2011, released in July 2012, estimate that annual real GDP growth in 2011 was 1.4 per cent. This was higher than official forecasts while real GNP growth in 2011 was almost three percentage points lower than forecast by the Department of Finance in 2011. The large under prediction of real GNP highlights the difficulties in anticipating accurately the component "net factor income from abroad", which is the difference between GNP and GDP. The level of nominal GDP was also underestimated by the Department of Finance.

An analysis of forecast errors over the period 1995 to 2011 indicates that the pattern of past forecast errors is similar across agencies. Current Department of Finance forecasts for 2012-2015 are also similar to forecasts of other agencies. In general, forecasters remain of the view that growth rates of about 3 per cent will return over a two- to three-year horizon, although earlier forecasts of such a rebound have not materialised.

In recent years, the forecast levels of GDP and GNP have generally been lowered by the Department of Finance (and other agencies) in each successive forecast. This pattern is more apparent for nominal GNP than it is for nominal GDP.

The uncertainties surrounding the growth outlook for the Irish economy, highlighted in the Council's previous report (IFAC, 2012a), remain and are illustrated in this report through the use of fan charts. The fan chart for nominal GDP attaches a probability to each of a wide range of possible outcomes over the coming years. Although the fan chart is symmetric by construction, the Council sees the risks to growth to be weighted to the downside. While the enhanced discussion of risks included in *SPU 2012* is welcome, uncertainty should be more explicitly factored into the presentation of official forecasts through a more detailed sensitivity analysis.

Assessment of Budgetary Forecasts

To assess the budgetary forecasts the report: (i) reviews the accuracy of past Department of Finance forecasts; (ii) examines the latest set of projections in *SPU 2012* using the most recent Exchequer data; (iii) compares the *SPU* forecasts with the contemporaneous forecasts of other agencies and (iv) analyses the uncertainty surrounding budgetary forecasts using fiscal fan charts and sensitivity analysis.

The Government complied with the deficit targets set for Ireland under the Excessive Deficit Procedure in 2011. The General Government deficit adjusted for the impact of banking related transfers is estimated to have improved to 9.0 per cent of GDP last year. This was approximately €1.2 billion better than had been anticipated in last December's *Budget*.

For 2012, the forecast for the General Government deficit was revised to 8.3 per cent of GDP in *SPU 2012*, from 8.6 per cent in *Budget 2012* despite a downward revision in forecast growth. This reflected, in part, revisions to interest payments and the impact of banking-related revenues. A General Government deficit of 8.3 per cent of GDP for 2012 looks achievable at this stage based on the cumulative trends in the Exchequer data and the economic outlook. That said, there have been significant spending overruns in Health and Social Protection over the first eight months of the year. The current year overrun in Health reflects a pattern in recent years. There has also been a notable increase in non-tax revenues, partly related to the State's involvement in the banking sector. These sources of income should be closely monitored.

There were a number of significant changes to budgetary data and forecasts over the past year. To facilitate adequate assessment of budgetary projections, the Council urges that comprehensive and timely explanations be provided publicly on methodological changes and data revisions that impact on the fiscal outturn or official forecasts, on sources of major modifications to forecasts and on the components of non-tax revenues.

For the period 2013 to 2015, the *SPU* projections are in line with forecasts from other agencies. This outlook is heavily dependent on achieving significant reductions in Government expenditures and a sustained upturn in growth. Given the extent of the required total adjustment, the Council again urges that all adjustment margins be kept under close review, including tax rates, public-sector pay/pensions, and welfare rates.

The debt to GDP ratio is expected to peak in 2013 at just over 120 per cent of GDP. The fan charts and sensitivity analysis undertaken in this report reveal risks around the budgetary targets and the fragility of debt sustainability.

Assessment of the Fiscal Stance

As in earlier reports, the appropriateness of the fiscal stance is analysed in terms of a trade-off between supporting domestic demand and ensuring debt sustainability.

The Council assesses the Government's fiscal stance, as set out in *SPU 2012*, to be – in the language of the FRB – “conducive to prudent economic and budgetary management”. However, debt sustainability and creditworthiness remain fragile. Weighing the risks to debt sustainability and ongoing weakness in the real economy, the Council supports an alternative fiscal stance involving a total of €1.9 billion of additional adjustments in the period to 2015 compared to the Government's baseline (see Summary Table). Due to continued weakness in demand and some further improvement in market assessments of Ireland's creditworthiness, the amount of additional adjustment is scaled back by €0.9 billion since the previous *Fiscal Assessment Report*, with no additional adjustments for 2013 in the Council's alternative scenario. Model-based projections indicate that this alternative scenario would yield a primary budget surplus of 3.7 per cent of GDP in 2015, which is 0.9 per cent of GDP higher than under current plans. This would also help to put the debt to GDP ratio on a faster downward trajectory and would provide additional insurance, albeit limited, in the effort to ensure debt sustainability.

While recognising possible rationales for a separate stimulus programme, balancing various considerations, the Council is of the view that any relaxation sought by the Government in the overall fiscal stance should be examined within the context of the main fiscal adjustment programme. However, the Council does not see a case for a relaxation of the fiscal stance as set out in the SPU.

Debt sustainability remains fragile and judgements on this issue are coloured by whether it is believed GDP or GNP provides the most appropriate measure of Ireland's fiscal capacity. Each of these measures has limitations. Recognising this, the Council explores a "hybrid" measure that puts differential weight on the fiscal capacity of a euro of GNP and a euro of the GDP-GNP excess. The required fiscal adjustment appears challenging under all three measures, and most so under GNP. A more encouraging perspective emerges when the additional adjustments are compared to what has been already achieved in the fiscal adjustment process. While relief on the banking-related part of Ireland's debt is unlikely to be a panacea, any relief would increase the chances of a successful adjustment, measured by a robust return to market creditworthiness.

Summary Table: Alternative General Government Deficit Targets and Discretionary Adjustments

General Government Balance, % of GDP	2013	2014	2015	
<i>SPU 2011 (April 2011)</i>	-7.2	-4.7	-2.8	
<i>IFAC October 2011 Alternative Adjustment Path</i>	-6.4	-3.6	-1.0	
<i>Budget 2012 (December 2011)</i>	-7.5	-5.0	-2.9	
<i>IFAC April 2012 Alternative Adjustment Path</i>	-7.4	-4.6	-1.7	
<i>SPU 2012 (April 2012)</i>	-7.5	-4.8	-2.8	
<i>IFAC September 2012 Alternative Adjustment Path</i>	-7.5	-4.5	-1.9	
Assumed Consolidation € billions	2013	2014	2015	2013 - 2015
<i>SPU 2011 (April 2011)</i>	3.1	3.1	2.0	8.2
<i>IFAC October 2011 Alternative Adjustment Path</i>	3.9	3.8	3.7	11.4
<i>Budget 2012 (December 2011)</i>	3.5	3.1	2.0	8.6
<i>IFAC April 2012 Alternative Adjustment Path</i>	3.9	3.8	3.7	11.4
<i>SPU 2012 (April 2012)</i>	3.5	3.1	2.0	8.6
<i>IFAC September 2012 Alternative Adjustment Path</i>	3.5	3.5	3.5	10.5

Compliance with Fiscal Rules: A Preliminary Examination

Ireland has an obligation to comply with the *EU Stability and Growth Pact*, which was revised in 2011, and the “Fiscal Compact” which is being implemented in national law through the FRB. As part of its mandate under the latter, the Council would be required to provide an assessment, at least once a year, of compliance with the fiscal rules. While the details are complicated, the rules in essence relate to the budget balance, the structural budget balance (consistent with the EU’s Medium-Term Objective or “Budgetary Rule”) and a debt reduction requirement (i.e. the “Debt Rule”).

The *SPU* projections to 2015 show that the projected adjustment to the structural balance would be more than in line with the required adjustment path under the Budgetary Rule. The Debt Rule would not apply until after 2018. To get an early sense of the implications of the rules, the Council explores a policy and economic scenario that extends to 2020. This illustrative scenario is consistent with compliance with all rules, but implies a sustained period of expenditure restraint – effectively flat expenditure in real terms – in the absence of discretionary tax increases.

1. Introduction

The Irish Fiscal Advisory Council was established in June 2011 as part of a wider agenda of reform of Ireland's budgetary architecture. Forthcoming legislation under the Fiscal Responsibility Bill (FRB), which was published in July 2012, will establish the Council as an independent body on a statutory basis. Under the proposed legislation, the Council will monitor and assess compliance with fiscal rules set out in the Bill. The Council will also be required to provide an assessment of official forecasts and, in relation to each *Budget* and *Stability Programme*, assess whether the fiscal stance is conducive to prudent economic and budgetary management, including with reference to the provisions of the Stability and Growth Pact. Although the legislation is not expected to be enacted until later in the year, this report is written in line with the proposed mandate.

This report is the third fiscal assessment produced by the Council. The report is structured as follows: Chapter 2 assesses the macroeconomic forecasts set out in the *Stability Programme Update 2012* (SPU). More recent forecasts on the Irish economy are also examined in this context, as is the pattern of downward growth revisions. The Council also illustrates the high levels of uncertainty surrounding growth prospects. Chapter 3 assesses the medium-term budgetary forecasts in *SPU 2012*. The chapter also documents some of the more significant fiscal developments since the Council's last assessment report in April. Recognising the uncertainties inherent in the growth outlook, the sensitivity of medium-term projections to changes in the macroeconomic outlook is examined. Chapter 4 assesses the appropriateness of the Government's proposed fiscal stance over the period to 2015 in advance of *Budget 2013*. The chapter also considers the issue of debt sustainability based on different measures of fiscal capacity. Finally, Chapter 5 considers what the implications of the proposed fiscal rules might be in the longer term, and specifically beyond 2015, using an illustrative scenario.

A number of themes are developed in this report. Continuing a theme from the Council's previous assessment (IFAC, 2012a), this report stresses the *uncertainty* that surrounds macroeconomic and budgetary projections. Fan charts are developed as a useful graphical depiction of this uncertainty. The report also explores the fiscal implications of a number of alternative growth scenarios.

A second theme is the *large size of remaining adjustments required for debt sustainability*. Planned adjustments in real expenditure are especially large up to 2015. Even after 2015, a preliminary analysis of what might be required to meet fiscal rules indicates limited room for expenditure growth through the rest of the decade, notwithstanding significant underlying expenditure pressures. Given the total

size of these adjustments, it is important that all adjustment margins – including tax, public-sector pay and welfare rates – are considered. The perceived adjustment challenge is even greater if GNP is taken as the appropriate measure of fiscal capacity. The report also explores a “hybrid” measure that puts differential weights on GNP and the excess of GDP over GNP. Although official relief on banking-related State debt will not be a panacea, reasonable success in the Government’s effort to reduce the burden of official debt will be important given the size of the adjustment challenge.

A third theme is the importance of *transparency* in the recording of revisions in the fiscal accounts and plans. While recognising the complexity of the fiscal accounts and the rapidly evolving fiscal situation, the Council encourages more detailed reporting with regard to methodological and data revisions, forecast revisions and the composition of non-tax revenue.

The Council is chaired by Professor John McHale, National University of Ireland, Galway. The other members are Mr Sebastian Barnes, Organisation for Economic Co-operation and Development; Professor Alan Barrett, Trinity College Dublin (on secondment from the Economic and Social Research Institute); Dr Donal Donovan, University of Limerick (formerly of the International Monetary Fund) and Dr Róisín O’Sullivan, Associate Professor, Smith College, Massachusetts. The Secretariat is Diarmaid Smyth (Head of Secretariat), Rachel Joyce and Eimear Leahy. Council members would like to thank the Secretariat for their excellent work in producing this report. The assistance of Gerard O’Reilly and Colin Bermingham (Central Bank of Ireland), who provided valuable advice on the use of fan charts, is also gratefully acknowledged.

2. Assessment of Macroeconomic Forecasts

2.1 Introduction

As part of its mandate under the Fiscal Responsibility Bill (FRB), the Council is required to provide “...an assessment of the official forecasts” (Department of Finance, 2012b).¹ This chapter assesses the macroeconomic forecasts which were set out by the Government in the most recent Stability Programme Update (*SPU*) 2012 and in previous publications.

Internationally, one reason that this assessment function has sometimes been assigned to fiscal councils is to try to guard against potential over-optimism on the part of official forecasters. Such over-optimism can be seen as a contributing factor to deficit-bias on the part of governments (Calmfors and Wren-Lewis, 2011).² The ideal approach would be for the agency undertaking the assessment to prepare its own forecasts and for a comparison to be made between them and the official forecasts. However, as the remit (and the resources) of the Council do not extend to undertaking such independent forecasts, an alternative approach is adopted.

The Council’s approach involves four strands. First, a comparison of official forecasts with actual outcomes is presented, something that is not always done on a regular basis. Over time, large forecasts errors and/or errors which are repeatedly in the same direction would point to deficiencies in the methods used. Second, the official forecasts are compared with those published contemporaneously by the European Commission (EC), the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OCED), the Economic and Social Research Institute (ESRI) and the Central Bank of Ireland (CBI). The comparison of Department of Finance forecasts with those of other agencies allows one to assess if the official methodology is giving rise to sets of forecasts that are significantly different from those of other agencies.³ Third, the pattern of forecast revisions is examined in order to assess the presence of any systematic tendencies. Fourth, the pattern of identified forecast errors is used to provide an explicit treatment of the uncertainty surrounding growth forecasts using a technique known as a fan chart.

¹ The FRB is available at: <http://www.finance.gov.ie/viewdoc.asp?DocID=7320>

² Calmfors and Wren-Lewis (2011) use the term “optimism bias” to describe the tendency of governments to err on the side of higher forecasts for rates of economic growth, relative to likely outturns and relative to the forecasts of other agencies, in an effort to generate more favourable forecasts for the public finances.

³ In March 2011, a review of the Department of Finance was published by an independent review panel which stated that the Department’s work was “...as good as any other institution making forecasts of the Irish economy. However, the recent past also demonstrates that it is extremely difficult to project ‘turning points’ particularly in a rapidly growing economy.” The review is available at <http://www.finance.gov.ie/viewdoc.asp?DocID=6707&CatID=45&StartDate=01+January+2011>

The chapter is organised as follows. In Section 2.2, the outturn for economic activity in 2011, as estimated by the Central Statistics Office (CSO), is compared to forecasts for 2011 provided by the Department of Finance in April 2011 (*SPU 2011*) and December 2011 (*Budget 2012*). Section 2.3 considers forecast errors for short- and medium-term forecasts over the period 1995 to 2011. Section 2.4 contains a contemporaneous comparison of forecasts from the Department of Finance and other agencies. Section 2.5 highlights the on-going pattern of downward revisions reflected in recent years' forecasts. The uncertainty that this entails is explored in Section 2.6 through the use of a fan chart. Section 2.7 summarises the chapter's main findings.

2.2 How Close was the 2011 Economic Outturn to the Department of Finance Forecasts?

The National Income and Expenditure Accounts (NIE), released in July 2012, provide an opportunity to assess how close the official forecasts for 2011 published in the *SPU 2011* and *Budget 2012* were to the actual outturn (Table 2.1).⁴ The NIE estimate that annual real GDP growth in 2011, at 1.4 per cent, was stronger than official forecasts, while real GNP growth in 2011 was almost three percentage points lower than forecast.

Table 2.1: Department of Finance Forecasts for 2011 versus the Outturn

% change between 2010 and 2011 unless otherwise stated	2011 Forecast	2011 Forecast	2011 Outturn
	<i>SPU 2011</i> April 2011	<i>Budget 2012</i> December 2011	NIE July 2012
Real GDP	0.8	1.0	1.4
Real GNP	0.3	0.4	-2.5
Nominal GDP (€ billions)	156.1	155.3	159.0
Nominal GDP	1.4	-0.5	1.6
Nominal GNP (€ billions)	n.a.	126.5	127.0
Nominal GNP	n.a.	-1.4	-2.4

The higher outturn for the *level* of nominal GDP in 2011 reflects a number of factors, including both the stronger real growth rate and an upward revision to the estimated level of GDP in 2010. The level of nominal GNP is roughly in line with the *Budget 2012* estimate as weaker growth was offset by upward revisions to the 2010 level. The large under prediction of real GNP highlights the difficulties in anticipating accurately the component "net factor income from abroad" which is the difference between GNP and GDP (see Box A). GDP measures the total output of the economy, while GNP measures output (domestic and foreign) accruing as income to Irish residents, i.e. net factor payments (in Ireland's case, mainly net profit transfers by multinationals) are subtracted. In

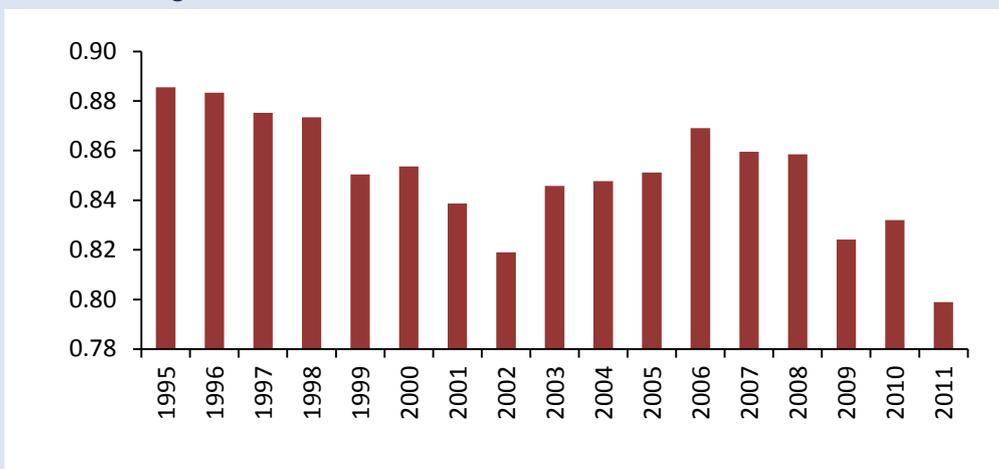
⁴ By December 2011, there were already considerable economic data for 2011 available. Hence, the "forecast" for 2011 at that time was a combination of estimation and forecasting.

Ireland, unlike most other countries, the difference between GNP and GDP is very sizeable and also somewhat volatile. Chapter 4 discusses the implications of using GDP or GNP as the scale variable in assessing fiscal policy and indebtedness.

Box A: Measures of Output: GDP and GNP

Gross Domestic Product (GDP) measures the total output produced in an economy. Gross National Product (GNP) measures the output (domestic and foreign) accruing to residents. The difference between GNP and GDP equals net factor income from abroad (NFI). For most countries the difference between GNP and GDP is very small but in Ireland it is highly significant and volatile, with the growth rates of the two variables varying considerably in some years (Figures A1 and A2). In 2011, the level of nominal GNP was about 20 per cent (€32 billion) lower than nominal GDP. This has important implications both in terms of forecasting and in considering the appropriate scale variable to use in assessing fiscal policy and indebtedness (the latter issue is discussed in Chapter 4).

Figure A1: Ratio of Nominal GNP to Nominal GDP



Source: CSO, National Accounts Data. Note: Data at current market prices.

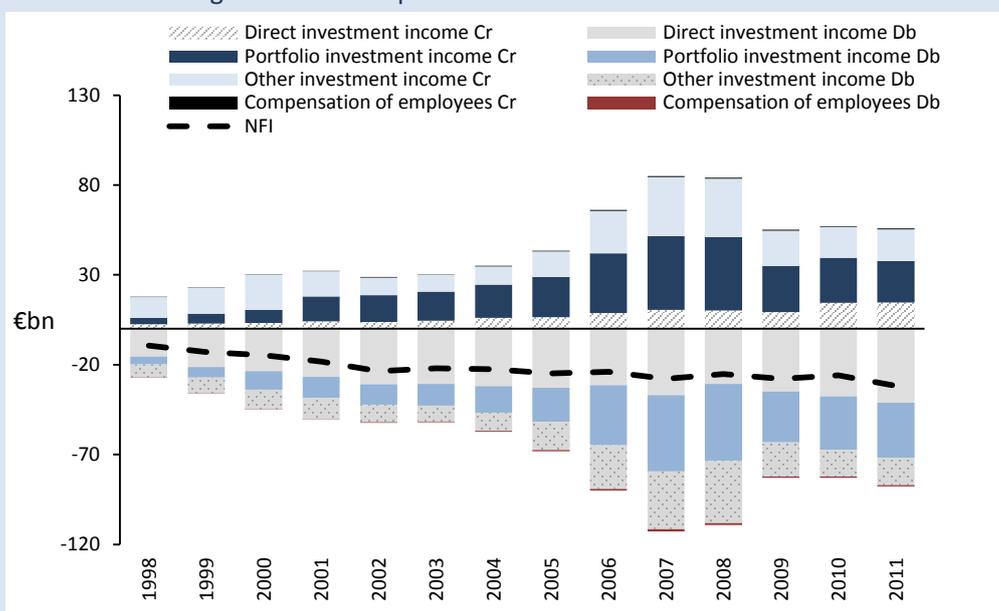
The breakdown of NFI by major category is shown in Figure A.3. A large part of NFI is the profits and dividends of foreign multinationals located in Ireland. Net interest payments, although minor to date, are beginning to grow in importance due to rising public debt service payments, which are reflected in Portfolio and Other investment income in Figure A3.

Figure A2: Real GDP and Real GNP Growth Rates



Source: CSO, National Accounts Data.

Figure A3: Components of Net Factor Income



Source: CSO, Balance of Payments Data.

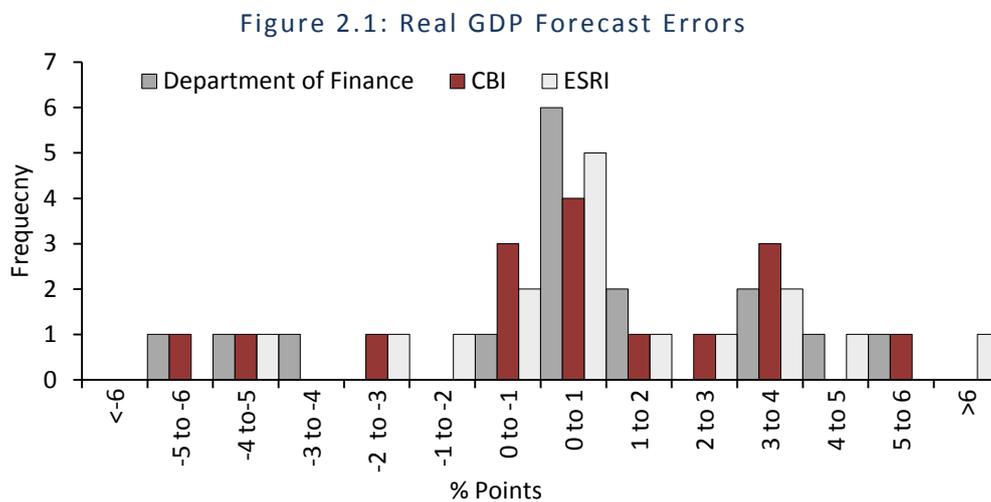
Notes: Db = Debit, Cr = Credit.

The volatility of NFI in recent years partly reflects the application of particular tax management strategies at a given time. Estimation of the output and related transactions of the multinational sector often requires firm specific data, especially for large enterprises. Forecasts for NFI and GNP by the ESRI, the CBI and the Department of Finance are linked closely to projections for exports of the multinational sector, taking into account any special factors. Projections for the (increasingly important) net interest component reflect the estimated debt service payments contained in the *Budget* adjusted as applicable to take into account up to date interest rate developments.

2.3 A Look Back at Forecast Errors

2.3.1 Short-Term Forecasts

This section examines the one-year forecast errors for real GDP over the period 1996 to 2011 in order to detect any evidence of systematic errors or bias. Figure 2.1 summarises the distribution of the one-year forecast errors associated with the forecasts undertaken by the Department of Finance, the CBI and the ESRI.⁵ The percentage forecast errors, i.e. the values on the horizontal axis, are calculated as the actual growth rate minus the forecast growth rate and thus positive values represent an underestimation. The modal value for the Department of Finance forecasts is between 0 and 1 per cent, although there were very large errors from time to time.⁶ The short-term forecasts of the ESRI and the CBI follow a similar pattern. Hence, the official forecasts do not exhibit evidence of optimism bias viewed relative to those of other agencies or in isolation.



Note: The histogram reflects one-year forecasting errors between 1996 and 2011.

The forecast errors shown in Figure 2.2 represent the percentage point difference between the outcome for a given year, labelled t , and the forecast published by the Department of Finance in the previous year ($t-1$).⁷ Both positive and negative errors were observed over the period. One-year ahead forecasts showed large positive errors (under prediction) in 1999/2000. There were consistently positive errors in the one-year ahead forecasts during the upswing from 2002, typically of less than one percentage point in magnitude. Relatively large errors were observed during the

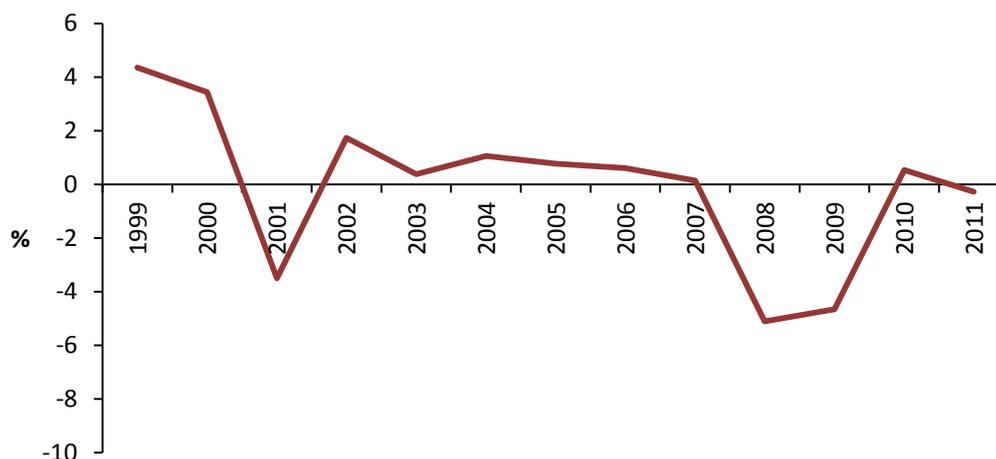
⁵ The Department of Finance forecasts are taken from annual Budgets. The CBI forecasts are taken from the final *Quarterly Bulletin* to be published in a calendar year. The ESRI forecasts are taken from the final *Quarterly Economic Commentary* to be published in a calendar year.

⁶ The pattern of forecast errors is similar across agencies, with the largest errors occurring in the late 1990s, 2007 and 2008.

⁷ For example, if year t is 2010, the $t-1$ forecast is that published in December 2009 (i.e. *Budget 2010*).

downturn in 2001, as well as in 2008 and 2009, but one-year forecasts for 2010 and 2011 showed much smaller errors.

Figure 2.2: Department of Finance Real GDP Forecast Errors: Short-Term Forecasts



Source: IFAC calculations.

2.3.2 Medium-Term Forecasts

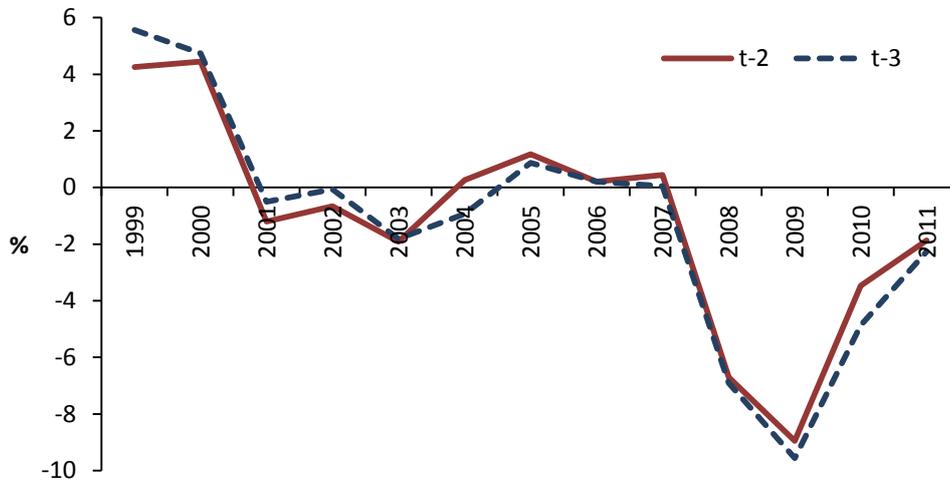
The Department of Finance provides real GDP growth forecasts not only for the current year but also for up to 3 years ahead. Figure 2.3 shows the forecast errors from *Budget* publications' medium-term forecasts between 1999 and 2011, where $t-2$ and $t-3$ represent forecasts for year t published two years and three years previously.^{8,9} As was the case with the short-term forecasts, medium-term forecasts were relatively more accurate in the early period of the decade leading up to the recession, when compared to the latter years of the nineties. Following the large errors in 2008 and 2009, the negative errors for 2010 and 2011 indicate some underestimation of the length and depth of the current recession.¹⁰

⁸ Taking 2010 as t again, the $t-2$ forecast is from December 2008 (i.e. *Budget 2009*) and the $t-3$ forecast is from December 2007 (i.e. *Budget 2008*).

⁹ The *SPU* started in 1999 and up until 2010 was published with the *Budget* in December. As part of the European Semester, the *SPU* was published in April in 2011 and 2012. For consistency, this analysis takes forecasts from *Budget* publications from 1999 onwards.

¹⁰ The forecasts of other agencies such as the EC and the IMF follow a similar pattern.

Figure 2.3: Department of Finance Real GDP Forecast Errors:
Medium-Term Forecasts



Source: IFAC calculations.

2.4 Comparison with Contemporaneous Forecasts

The forecasts published by the Department of Finance in *SPU 2012* are similar to the contemporaneous forecasts of other agencies. In the *SPU*, the Department of Finance's forecast for real GDP growth of 0.7 per cent in 2012 (Table 2.2) was revised downwards significantly from the estimate published in *Budget 2012* (1.3 per cent) while the forecast for nominal GDP in 2012 was also reduced due to a slightly lower inflation outlook. The most recent forecast of the CBI, which was published after the release of the NIE for 2011, has a much higher outlook for nominal GDP than the Department of Finance. The Department of Finance's forecast for real GNP has also been revised downwards significantly since *Budget 2012* but remains similar to the forecasts of other agencies. It is worth noting that the Department of Finance does not provide a forecast for nominal GNP in the *SPU*. It would be preferable for the Department to include this in future *SPU* publications given the importance of this variable.

As was the case in earlier forecasts, the Department of Finance expects all components of domestic demand to continue to decline in 2012. Investment expenditure is envisaged to fall, although there is some variation across agencies as to the magnitude. Available information does not permit an assessment of whether the investment stimulus package announced by the Government in July 2012 will affect this estimate. There is a consensus that the export growth rate will be lower in 2012 than in 2010-11, reflecting the ongoing Euro Zone debt crisis and the associated uncertainty. All agencies, except the OECD, anticipate that imports (a sizeable portion of which are associated with the multinational export sector) will increase slightly in 2012.

Table 2.2: Macroeconomic Forecasts for 2012

% change unless otherwise stated	SPU 2012	OECD	ESRI	EC	IMF	CBI
	Apr-12	May-12	Jun-12	Jun-12	Jun-12	Jul-12
Real GDP	0.7	0.6	0.6	0.5	0.5	0.7
Real GNP	-0.2	-0.7	0.0	n.a.	-0.1	-0.3
Consumption	-1.7	-1.5	-2.0	-1.7	-1.7	-1.6
Investment	-2.5	-2.1	-2.7	-4.0	-4.5	-1.7
Government	-2.2	-2.9	-2.3	-3.8	-2.0	-2.0
Exports	3.3	2.1	3.3	3.2	3.0	3.2
Imports	1.4	-0.6	0.9	1.2	1.0	1.7
Current Account (% GDP)	1.1	1.3	2.9	1.6	0.9	2.6
Employment	-0.4	-0.1	-0.7	-0.6	-0.8	-0.8
Unemployment Rate (%)	14.3	14.5	14.9	14.3	14.3	14.7
HICP*	1.8	2.0	1.7	1.7	1.7	1.4
GDP Deflator	0.9	0.6	1.9	1.2	1.2	2.1
Nominal GDP (€ billions)	158.9	158.4	160.4	159.2	159.2	163.4
Nominal GDP	1.6	1.2	2.5	1.8	1.8	2.8

Note: *Harmonised Index of Consumer Prices. The ESRI forecast refers to the Consumer Price Index.

Continuing the pattern observed in forecasting since the crisis began, all agencies are expecting a recovery in activity next year, followed by a further pickup in the outer years (Table 2.3). In line with most forecasting agencies, the Department of Finance anticipates real GDP growth to gain momentum in 2013 and a resumption of positive real GNP growth is expected. Investment is forecast to grow for the first time since 2007 and while the Department of Finance's investment forecast is similar to that of the OECD and the, EC and IMF, it is significantly below that of the ESRI (Table A1 of the Appendix to this chapter). Consumption is anticipated to remain weak in 2013.

The Department of Finance has maintained its 2014 and 2015 real GDP and real GNP growth forecasts since *Budget 2012* despite downward revisions to the short-term growth outlook. The EC and the IMF have lowered their medium-term growth forecasts slightly. Nonetheless, the Department of Finance's medium-term forecasts for consumption and investment are lower than those of the IMF and EC (Table A2 of the Appendix to this chapter).

Table 2.3: Macroeconomic Forecasts 2013, 2014 and 2015

% change unless otherwise stated	SPU	OECD	ESRI	EC	IMF	CBI
	Apr-12	May-12	Jun-12	Jun-12	Jun-12	Jul-12
2013						
Real GDP	2.2	2.1	2.2	1.9	1.9	1.9
Real GNP	1.4	1.6	0.5	n.a.	1.4	0.9
Unemployment Rate (%)	13.6	14.4	14.7	13.6	13.7	14.4
Nominal GDP	3.3	3.0	3.7	3.1	3.1	3.2
2014						
Real GDP	3.0	n.a.	n.a.	2.6	2.6	n.a.
Real GNP	2.3	n.a.	n.a.	n.a.	2.2	n.a.
Unemployment Rate (%)	12.8	n.a.	n.a.	13.0	13.0	n.a.
Nominal GDP	4.3	n.a.	n.a.	4.1	4.1	n.a.
2015						
Real GDP	3.0	n.a.	n.a.	2.9	2.8	n.a.
Real GNP	2.3	n.a.	n.a.	n.a.	2.4	n.a.
Unemployment Rate (%)	11.7	n.a.	n.a.	12.4	12.3	n.a.
Nominal GDP	4.5	n.a.	n.a.	4.5	4.5	n.a.

2.5 The Recent Pattern of Downward Revisions and Delayed Upturns in Forecasts

In this section the evolution of forecasts for the Irish economy in recent years is examined. This provides an insight into the difficulties posed by the particularly high degree of uncertainty prevailing currently.

Figures 2.4a and b show how forecasts for real GDP growth in 2012 and 2013 across agencies have been successively modified over time. These forecasts have generally been revised downwards, continuing the pattern observed in 2010 and 2011.¹¹

The turnaround in the economy has been consistently forecast to start around the time the forecast was made and then to recover at a healthy pace. However, this has not occurred. For example, the recovery that had been expected to occur in 2010/2011 did not materialise and, instead, is now envisaged to occur, albeit at a slower pace, in 2014/2015.

¹¹ The evolution of forecasts for 2011 was illustrated in previous *Fiscal Assessment Reports* (IFAC, 2011 p.8; IFAC, 2012a p.10).

Figure 2.4a: Evolution of 2012 Real GDP Growth Forecasts¹²

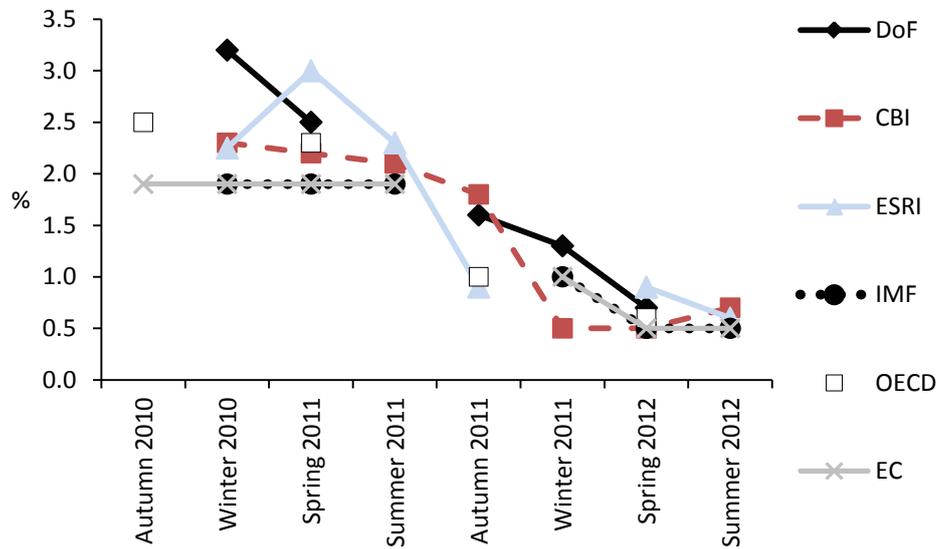
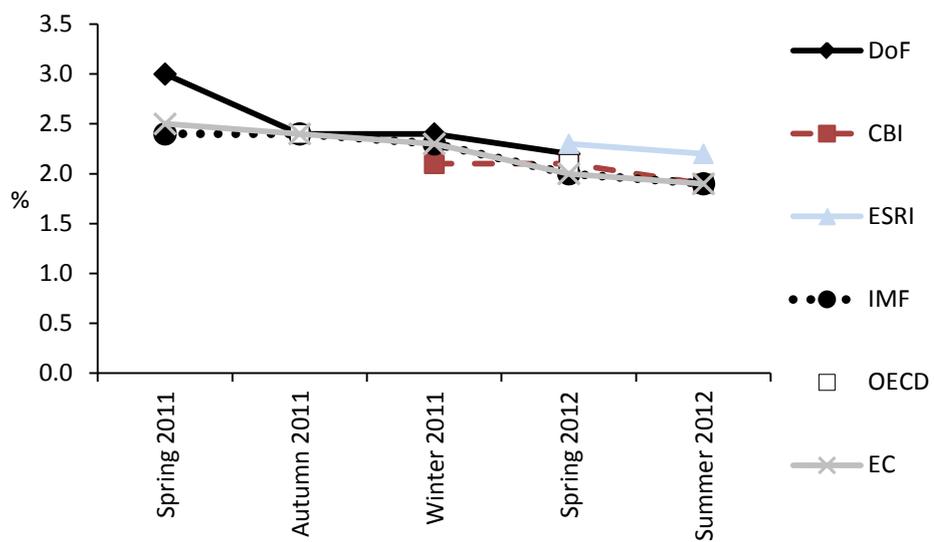


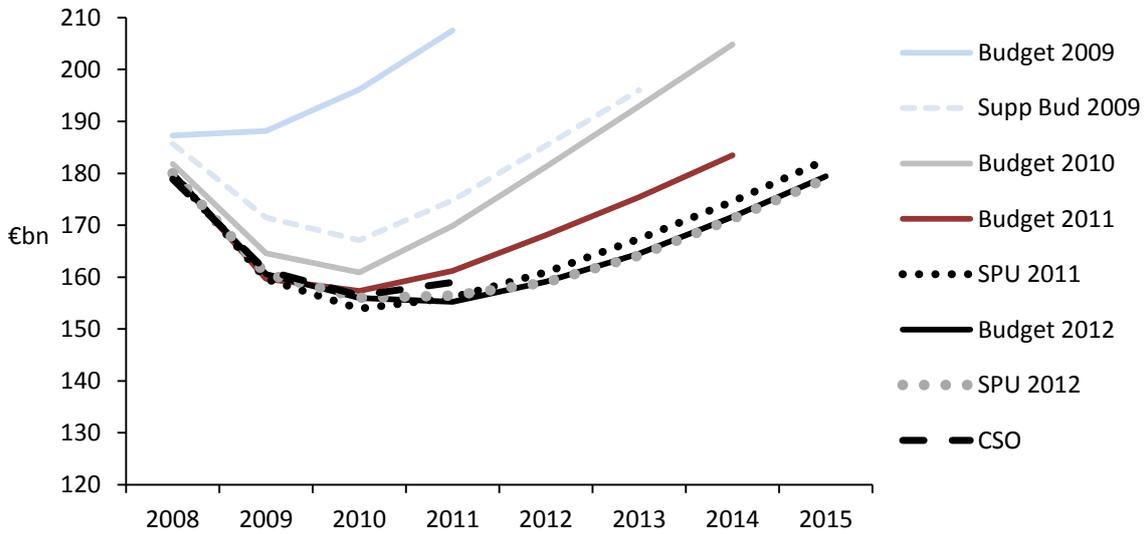
Figure 2.4b: Evolution of 2013 Real GDP Growth Forecasts



¹² Labels on the horizontal axis refer to the season in which the forecast is published. There is some overlap between Winter 2011 and early 2012.

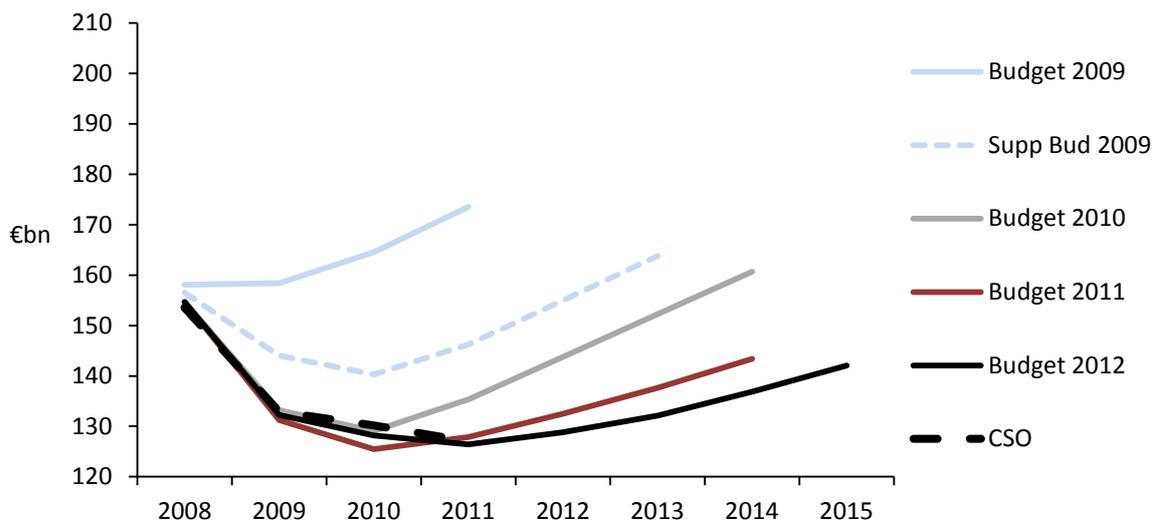
The downward revisions have resulted in a lowering of the expected *levels* of GDP and GNP by the Department of Finance in successive forecasts (see Figures 2.4c and d).¹³ This pattern is stronger for nominal GNP than for nominal GDP.

Figure 2.4c: Department of Finance Nominal GDP Forecasts



Note: The outturns for each year are shown as "CSO".

Figure 2.4d: Department of Finance Nominal GNP Forecasts



Note: The outturns for each year are shown as "CSO".

¹³ The IMF and EC forecasts for nominal GDP have followed a similar pattern.

2.6 Uncertainty Remains High

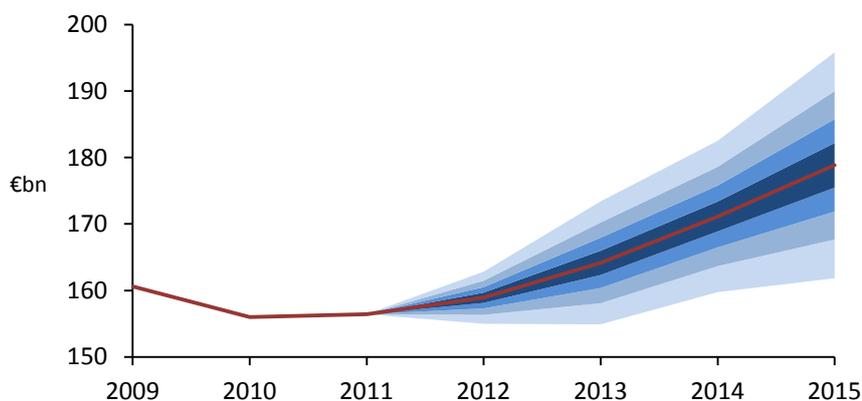
The April 2012 *Fiscal Assessment Report* discussed the factors underlying the unusually high degree of uncertainty surrounding the short- to medium-term growth prospects for the Irish economy. It identified three broad types of uncertainty relating to (a) the size of the current output gap; (b) the rate at which the output gap will be closed; and (c) the trend growth rate of potential output itself.

Despite the inherent uncertainty in forecasting, “point forecasts” (i.e. a single number) have long been used in economic publications. However, even with the best forecasting techniques, for a variety of reasons, it is highly improbable that actual outcomes will coincide with the forecasts.

One way of representing this inherent uncertainty is through the use of fan charts. Fan charts have been widely used by central banks over the past fifteen years (Britton, Fisher and Whitley, 1998, Cronin and Dowd, 2011). The fan chart in Figure 2.5 is based on the Department of Finance’s one-, two- and three-year nominal GDP forecast errors over the period 1999 to 2005. The methodology used to develop the fan charts is explained in more detail in Annex A. The width of the fan represents the range of possible outcomes for nominal GDP in the coming years.¹⁴

Figure 2.5 shows the *SPU 2012* forecast, i.e. the central forecast, as a red line. The surrounding dark blue areas represent the range of outcomes with a probability of 10 per cent either side of the central forecast. Each successively lighter band represents a further increase of 10 percentage points on each side of the total probability of the range covered. The range of possible GDP outcomes widens as the forecast horizon lengthens.

Figure 2.5: Fan Chart for Nominal GDP



Source: *SPU 2012* and IFAC calculations.

¹⁴ The fan chart shows 80 per cent of the distribution around nominal GDP. It is extremely difficult to represent events beyond this range.

While the fan charts in this report are assumed to be symmetric by construction, the Council judges that the risks are likely to be greater on the downside. The repeated experience since 2008 of forecasts of imminent recovery leading to moderate growth being incorrect points to specific downside risk relating to a prolonged “balance sheet recession” (Koo, 2011).¹⁵ This forecast pattern has been widely shared by other official and private sector forecasters, but this could be explained by common modelling assumptions. Moreover, the close involvement of the EC and the IMF in the design of Ireland’s programme has likely led to a convergence of assumptions. As noted above, GNP, in particular, has yet to show signs of turning around, although turning points are hard to forecast in advance. The “balance sheet” nature of the recession raises the possibility of a so-called “L-shaped” pattern, whereby output and GNP (which is most strongly affected by domestic factors) would remain largely flat for some years. This scenario is specifically examined in the scenario analysis conducted in Chapter 3.

In the previous assessment report (IFAC 2012a), the Council urged that the official forecasts give greater prominence to uncertainty by attaching error bands to the forecasts and by including a more complete assessment of the overall balance of risks. *SPU 2012* provides a more detailed discussion of risks than had previously been the case, including a statement that “the risks appear broadly balanced at this time”. Nevertheless, the Council suggests that the use of error bands and the provision of a more detailed sensitivity analysis around the central projections would further enhance the usefulness of the forecasts.

2.7 Summary

This chapter provides an assessment of the Department of Finance’s macroeconomic forecasts.

- Relative to the outturn for 2011, the Department of Finance underestimated real and nominal GDP growth rates but overestimated real GNP.
- Forecasts for nominal GNP were not provided in either *SPU 2011* or *SPU 2012*. It would be preferable for the Department to include these forecasts in future *SPU* publications given the importance of this variable.
- An analysis of forecast errors over the period 1995 to 2011 indicates that the pattern of past forecast errors is similar across agencies, including the Department of Finance. Further, the official forecasts do not exhibit evidence of optimism bias.

¹⁵ In this context, Koo (2011) refers to the negative impact that arises from a debt-financed bubble associated with a collapse in asset prices. As a result, households and businesses are forced to repair their balance sheets by increasing savings or paying down debt.

- Current Department of Finance forecasts for 2012-2015 are similar to the contemporaneous forecasts of other agencies. In general, forecasters remain of the view that growth rates of about 3 per cent will return over a two-three year horizon.
- In recent years, the forecast levels of GDP and GNP have generally been lowered by the Department of Finance (and other agencies) in each successive forecast. This pattern is more apparent for nominal GNP than it is for nominal GDP. Thus, forecasters have consistently over-anticipated the timing and extent of a possible turnaround in the economy.
- The uncertainties surrounding the growth outlook for the Irish economy that were highlighted in the Council's previous report (IFAC, 2012a) remain. The use of fan charts attaches a probability to each of a wide range of possible outcomes for GDP over the coming years. Although the fan chart is symmetric by construction, in reality the risks to GDP are likely to be weighted to the downside. While the discussion of risks included in *SPU 2012* is welcome, a more detailed and quantitative sensitivity analysis of the uncertainty surrounding official forecasts would be desirable.

Appendix

Table A1: Detailed Macroeconomic Forecasts for 2013

% change unless otherwise stated	SPU	OECD	ESRI	EC	IMF	CBI
	Apr-12	May-12	Jun-12	Jun-12	Jun-12	Jul-12
Real GDP	2.2	2.1	2.2	1.9	1.9	1.9
Real GNP	1.4	1.6	0.5	n.a.	1.4	0.9
Consumption	0.0	0.0	-0.5	0.3	0.3	-0.1
Investment	1.5	1.3	4.3	1.0	1.0	0.7
Government	-2.2	-2.2	-2.2	-2.7	-1.5	-1.2
Exports	4.3	5.3	3.5	4.2	4.0	4.2
Imports	2.6	4.0	2.6	3.0	2.8	3.1
Current Account (% GDP)	2.2	2.0	3.0	3.1	1.8	3.7
Employment	0.8	0.3	-0.3	0.7	0.7	0.3
Unemployment Rate (%)	13.6	14.4	14.7	13.6	13.7	14.4
HICP	1.3	1.2	1.5	1.2	1.2	0.7
GDP Deflator	1.0	0.9	1.5	1.2	1.2	1.3
Nominal GDP (€ billions)	164.2	163.2	166.3	164.2	164.2	168.6
Nominal GDP	3.3	3.0	3.7	3.1	3.1	3.2

Note: The ESRI forecast refers to the Consumer Price Index rather than the HICP.

Table A2: Detailed Macroeconomic Forecasts for 2014 and 2015

% change unless otherwise stated	SPU		EC		IMF	
	Apr-12		Jun-12		Jun-12	
	2014	2015	2014	2015	2014	2015
Real GDP	3.0	3.0	2.6	2.9	2.6	2.8
Real GNP	2.3	2.3	n.a.	n.a.	2.2	2.4
Consumption	1.0	1.2	1.5	1.9	1.1	1.5
Investment	3.8	4.5	4.0	4.9	4.3	7.5
Government	-2.3	-2.1	-4.0	-3.5	-1.3	-1.2
Exports	4.8	4.8	4.8	4.8	4.3	4.6
Imports	3.4	3.5	3.6	3.8	3.5	4.3
Current Account (% GDP)	3.2	3.7	4.5	4.6	2.8	3.6
Employment	1.3	1.6	1.3	2.0	1.3	2.0
Unemployment Rate (%)	12.8	11.7	13.0	12.4	13.0	12.3
HICP	1.5	1.8	1.4	1.7	1.4	1.6
GDP Deflator	1.3	1.4	1.5	1.6	1.5	1.6
Nominal GDP (€ billions)	171.2	178.9	171.0	178.7	171.0	178.7
Nominal GDP	4.3	4.5	4.1	4.5	4.1	4.5

3. Assessment of Budgetary Forecasts

3.1 Introduction

Under the Fiscal Responsibility Bill, the Council is required to provide an assessment of official forecasts, including budgetary forecasts. This chapter assesses recent budgetary projections by the Department of Finance with a particular focus on those contained in the *Stability Programme Update (SPU) 2012*. Consistent with the approach outlined in Chapter 2, a multi-faceted approach is followed consisting of: (i) a review of the accuracy of past Department of Finance projections; (ii) an examination of the latest Department of Finance projections; (iii) a comparison of the *SPU 2012* forecasts with the contemporaneous forecasts of other agencies; and (iv) an exploration of the impact of macroeconomic uncertainty on the fiscal aggregates using scenario analysis and fan charts.

The chapter is organised as follows. In Section 3.2, the accuracy of Department of Finance budgetary projections in 2011 is reviewed. Section 3.3 describes the projections from *SPU 2012*, which are assessed in Section 3.4. In order to capture uncertainties, the effect on the main fiscal aggregates of some alternative growth scenarios is considered in Section 3.5. Section 3.6 concludes.

3.2 How Close were the 2011 Budgetary Outturns to the Department of Finance Forecasts?

Based on the most recent National Accounts data (September 2012), the 2011 General Government deficit was €20.2 billion.¹⁶ This represented an improvement of approximately €0.4 billion relative to the estimated outturn in the Maastricht returns (April 2012), mainly reflecting the impact of accrual adjustments.¹⁷ Furthermore, the revision to the level of nominal GDP in 2011 helped the deficit ratio to fall to 12.7 per cent (from 13.1 per cent at the time of Maastricht returns). The underlying deficit, which excludes the impact of bank-related (deficit increasing) capital transfers, was significantly lower, at €14.4 billion, or 9.0 per cent of GDP, well within the

¹⁶ The NIE for 2011 includes new General Government tables which help the assessment of budgetary data.

¹⁷ The Maastricht returns (EDP Notification Tables) are submitted to Eurostat by each Member State twice a year, at end-March and end-September. These tables contain official estimates for the levels of General Government balance and debt for the preceding four years as well as forecasts for the current year. The tables are compiled by the Department of Finance and the Central Statistics Office. Figures relative to GDP are based on the July 2012 NIE 2011 release, which was not available at the time of the Maastricht returns.

10.6 per cent target set by the ECOFIN Council in December 2010 under the excessive deficit procedure.¹⁸ The fiscal targets for 2011 under the EU/IMF Programme, which included quarterly targets for the Exchequer primary balance, were also met in full. The level of gross General Government debt at end-2011 rose by €24.9 billion, to €169.1 billion, or 106.4 per cent of GDP, driven primarily by the deficit as well as by positive stock-flow adjustments.

The estimated outturn figures for 2011 from the Maastricht returns are the basis for *SPU 2012* and allow an assessment of the accuracy of Department of Finance budgetary projections for 2011 (Table 3.1). Direct comparisons between the forecasts and outcome figures, however, are complicated by technical changes during the period as to how some of the data are classified and accounted for. Specifically, the decision by Eurostat in early 2012 to classify €5.8 billion of injections into Irish financial institutions as capital transfers rather than financial transactions resulted in the General Government deficit in 2011 being significantly revised upwards. Moreover, methodological changes introduced by the Department of Finance in *SPU 2012* to improve accounting consistency between the Department and the CSO contributed to other large deviations in certain categories. For example, changes in the recording of local authority housing rentals, introduced by the CSO in 2011 to agree with Eurostat standards, contributed to a large increase of close to €1 billion in both Government receipts and expenditure, with no effect on the overall balance. This change had a particularly large effect on items such as “Social Payments” and the revenue item “Other”, between *Budget 2012* and *SPU 2012*.¹⁹

Data revisions also underlie part of the differences between the Department’s projections and the *SPU* estimated outcomes. In particular, the *SPU 2012* estimated outcome figure for Government investment spending in 2011, at €5.2 billion (reflecting the CSO estimate submitted as part of the Maastricht returns at end-March), was some €1 billion higher than the projection in *Budget 2012*. However, the CSO have recently revised downwards the figure for investment to €4.2 billion, more in line with the projections made by the Department in *Budget 2012*.

¹⁸ Of the net €16.5 billion that was injected into Irish financial institutions in 2011, €5.8 billion was ultimately classified in March 2012 as a capital transfer, which added approximately 3.6 per cent of GDP to the 2011 deficit.

¹⁹ While the methodological change affects the comparability of the numbers for a particular category, it does not affect the overall balance because it equally affects both receipts and expenditures. This change is documented on page 50 of *SPU 2012*.

Table 3.1: Department of Finance Projections for 2011 and Estimated Outturn

€ billions	<i>SPU 2011</i>	<i>Budget 2012</i>	<i>SPU 2012</i>	<i>NIE 2011</i>
	Apr-11	Dec-11	Apr-12	Sept-12
General Government Deficit (Underlying)	15.7	15.6	20.5 (14.7)	20.2 (14.4)
General Government Deficit, % of GDP (Underlying)	10.0	10.1	12.9 ²⁰ (9.3)	12.7 (9.0)
Revenue	55.4	54.2	55.8	
<i>Taxes</i>	38.2	36.8	37.1	
<i>Other</i>	17.2	17.4	18.7	
Expenditure	71.0	69.7	76.4	
<i>Government Services</i> ²¹	26.2	27.6	26.5	
<i>Social Payments</i>	26.8	26.9	28.1	
<i>Interest</i>	5.9	5.1	5.4	
<i>Investment</i>	4.5	4.2	5.2	
<i>Other</i>	7.6	5.9	11.2	
Local Government Balance	-0.2	-0.2	0.0	0.0
General Government Debt	173.2	166.1	169.3	169.1

Source: *SPU 2011, Budget 2012, SPU 2012, CSO and IFAC calculations.*

Notes: Figures are on a General Government basis. The expenditure category 'Other' includes banking capital transfers of €5.8 billion. There was a correction to Ireland's end-2010 General Government Debt figure of €3.6 billion which distorts the debt comparison between the April 2011 SPU and the estimated outturn.

Another significant development contributing to the gap between the projection for interest expenditures between *SPU 2011* and *SPU 2012* was the reduction in interest costs arising from the EU Leaders agreement in July 2011. Partly as a result, interest costs in 2011 were about €0.5 billion below the 2011 *SPU* forecast.²²

When these technical and external factors are taken into account, the main factors that contributed to the €1.2 billion improvement between the deficit projected in the *Budget* and the

²⁰ The deficit ratio outturn figure is based on the revised GDP figure from NIE 2011, which came out after *SPU 2012*.

²¹ Government Services defined here as Compensation of Employees and Intermediate Consumption. According to the *SPU*, intermediate consumption is current spending on goods and services by government units. Compensation of employees is the total remuneration paid to employees within the General Government sector.

²² The National Treasury Management Agency (NTMA) forecasts national debt interest expenditure which is the largest component of General Government interest expenditure.

underlying deficit outcome for 2011 comprise: a better than expected end-year Exchequer position of about €0.3 billion; tax accrual adjustments mainly relating to delayed corporation tax receipts received in 2012 but counted as part of 2011; and a small surplus in the local government sector, where a deficit of €0.2 billion had been anticipated.

Between *SPU 2011* and *Budget 2012*, there was a sizable downward revision to the level of gross debt, which had been overstated by €3.6 billion, due to an accounting error.²³ However, the level of General Government debt was subsequently revised upwards in the *SPU* to €169.3 billion, due mainly to an early European Financial Stability Facility (EFSF) payment of approximately €1 billion and borrowings from NAMA of €0.7 billion. In the NIE, the level of debt in 2011 was revised marginally to €169.1 billion.

In summary, the underlying deficit in 2011 was significantly lower than had been anticipated in both the *SPU 2011* and in *Budget 2012*. It would appear that the forecasts underestimated some revenue and expenditure categories. Pure forecasting errors (consistent also perhaps with the existence of buffers in the official projections), methodological changes, data revisions and some unanticipated reduction in interest costs contributed to the deviations. Interpretation of movements in fiscal aggregates, including the identification of forecast errors, is complicated by these factors. The Council, therefore, urges the Department to make available publicly and in a timely manner comprehensive details of any changes that significantly affect the official forecasts.

3.3 The Budgetary Projections in *SPU 2012*

2012

In *SPU 2012*, the projected 2012 deficit was revised to 8.3 per cent of GDP from 8.6 per cent in *Budget 2012* (Table 3.2).²⁴ The improvement, despite a downward revision in forecast growth, appears to reflect mainly an overestimation of interest payments, an underestimation of receipts from the bank guarantee and dividend payments on the State's preference shares in AIB. Understanding what is behind changes to deficit projections is crucial for interpreting and monitoring fiscal aggregates and the Council urges the Department of Finance to document clearly

²³ This error led to an internal and external review of the compilation of General Government debt statistics, which were published by the Department of Finance in June 2012. These reports noted the complexity of the work involved and a duplication of effort across agencies. It was recommended that the CSO take overall responsibility for debt reporting.

²⁴ The EDP deficit ceiling set by the ECOFIN Council for 2012 is 8.6 per cent of GDP.

and in a timely manner when major changes to projections occur and the reasons behind them. This could be done by presenting recent vintages of forecasts side by side, with major revisions highlighted and explained.

Table 3.2: *SPU 2012: Key Aggregates to 2015*

€ billions	2011	2012	2013	2014	2015
Exchequer Deficit	24.9	18.7	14.5	10.4	6.8
General Govt. Deficit	20.5	13.1	12.4	8.1	5.0
Primary Deficit	15.2	6.7	3.1	-1.4	-5.0
Structural Deficit	12.4	11.9	11.3	8.5	6.3
Gross Debt	169.3	186.7	197.5	204.5	210.0
% of GDP					
Exchequer Deficit	15.9	11.7	8.9	6.1	3.8
General Govt. Deficit	13.1	8.3	7.5	4.8	2.8
Primary Deficit	9.7	4.2	1.9	-0.8	-2.8
Structural Deficit	7.9	7.5	6.9	5.0	3.5
Gross Debt	108.2	117.5	120.3	119.5	117.4
Memo items:					
Nominal GDP	156.5	158.9	164.2	171.2	178.9
Nominal GDP Growth (% change)	0.3	1.6	3.3	4.3	4.5
Assumed Discretionary Fiscal Adjustment	5.3	3.8	3.5	3.1	2.0
EDP Ceiling for General Govt. Deficit, % of GDP	10.6	8.6	7.5	5.1	2.9

Source: *SPU 2012 and end-year Exchequer Returns.*

Note: The EDP ceiling is the maximum underlying General Government balance allowed under the European Council's recommendations to Ireland as per 7 December 2010.

2013-2015

The *SPU* projections covering 2013-2015 are based on a planned consolidation of €8.6 billion set out in the *Medium-Term Fiscal Statement (MTFS)* published in November 2011 (Table 3.3). The precise tax and expenditure measures that underlie this budgetary plan have yet to be announced. However, there has been a notable increase in the amount of information contained in the *MTFS* and subsequently in the *Comprehensive Expenditure Report 2012-2014 (CER)*, the *Infrastructure*

and Capital Investment Framework, and in the latest EU/IMF Programme Memorandum of Understanding. The *MTFS* provided an indicative split of consolidation at an aggregate level across tax, current and capital expenditure headings. Furthermore, spending decisions in particular will be informed by the *CER*, which sets out expenditure ceilings over the period 2012 to 2014.

Table 3.3: Indicative Consolidation Measures Underlying *SPU 2012*

€ billions	2013	2014	2015
Total Consolidation	3.5	3.1	2.0
Tax	1.25	1.1	0.7
Expenditure	2.25	2.0	1.3
<i>Current</i>	1.7	1.9	1.3
<i>Capital</i>	0.55	0.1	0.0

Source: Medium Term Fiscal Statement.

In the *SPU*, the General Government deficit is forecast to fall to less than 3 per cent of GDP in 2015, in line with the target set by the ECOFIN Council. The *SPU* projections over this period are similar to those in *Budget 2012*. The debt to GDP ratio is expected to peak in 2013 at 120.3 per cent. These projections assume a sustained upturn in economic activity over the period to 2015. In particular, the labour market outlook is expected to improve with employment increasing next year and with the unemployment rate declining.

According to *SPU 2012*, the expenditure to GDP ratio is forecast to decline to 2015, despite a marked rise in interest payments arising mainly from the ending of the interest holiday on the promissory notes.²⁵ Interest costs are expected to rise sharply, both in absolute terms (Table 3.4) and as a share of GDP. In contrast, all other main expenditure headings are projected to decline, contributing to a fall in primary spending of €4.2 billion. Government services, defined as the sum of compensation of employees (public sector pay) and intermediate consumption, is forecast to fall by €1.7 billion over the period, with social payments expected to decline by €1.6 billion. The *SPU* projections imply General Government revenue increasing at a rate close to the anticipated growth in nominal GDP. The increase in General Government revenue in Table 3.4 reflects the assumed

²⁵ This was discussed in detail in the Council's previous *Fiscal Assessment Report* (IFAC 2012a, pp. 26-29).

impact of new tax measures, carryover effects from past tax announcements and also the effects of economic growth.²⁶

Table 3.4: *SPU* Projected Changes in Government Revenue and Expenditure

€ billions	2013	2014	2015	Cumulative 2013-15
Total Revenue	2.0	2.8	2.6	7.5
<i>Tax</i>	2.6	2.6	2.3	7.6
Total Expenditure	1.3	-1.6	-0.4	-0.7
<i>Compensation of Employees</i>	-0.4	-0.3	-0.3	-0.9
<i>Intermediate Consumption</i>	-0.2	-0.3	-0.2	-0.8
<i>Social Payments</i>	-0.4	-0.9	-0.3	-1.6
<i>Investment</i>	-0.2	-0.2	0.0	-0.4
<i>Other</i>	-0.2	-0.1	0.0	-0.3
<i>Interest</i>	2.7	0.2	0.6	3.5
Primary Expenditure	-1.3	-1.8	-1.0	-4.2

Source: *SPU* 2012 and IFAC calculations.

Note: Numbers rounded to one decimal place.

3.4 An Assessment of the *SPU* 2012 Budgetary Forecasts and the Near-Term Fiscal Outlook

3.4.1 The Outlook for 2012

Exchequer Deficit

The most up-to-date information on current budgetary trends is provided by the monthly Exchequer returns, which appear to be broadly in line with the General Government outlook set out in the *SPU*. In the latter, the Exchequer deficit was projected to be €18.7 billion this year, although that figure is now likely to be lower due to the settlement of the 2012 Irish Bank Resolution Corporation (IBRC) Promissory Note payment with a Government bond rather than cash from the Exchequer.²⁷ In the first eight months of the year, the overall Exchequer deficit amounted

²⁶ The indicative consolidation measures in Table 3.3 refer to the estimate of the consolidation required to meet the deficit targets set by the ECOFIN Council based on the view of the economy and the public finances at the time of the *MTFS*.

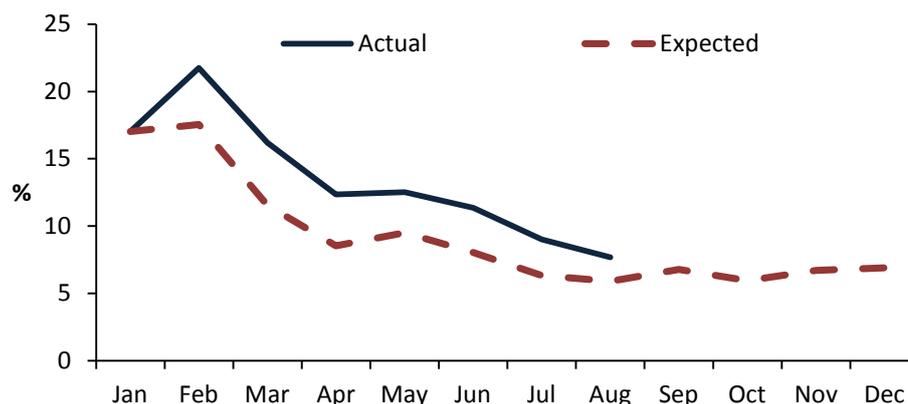
²⁷ The Exchequer deficit projection in the *SPU* for 2012 included €3.1 billion in respect of the promissory note payment to IBRC, although ultimately settlement of this payment was through a Government bond.

to €11.3 billion. Higher debt servicing costs coupled with payments to Irish Life (of €1.3 billion) and loans to the Insurance Compensation Fund (of €0.5 billion) added to the deficit in the first eight months of the year, although these payments were anticipated.^{28,29}

Tax Revenue

The Exchequer revenue data indicate that taxes to end-August were 1.7 per cent (or €365 million) ahead of the Department of Finance’s target (Figure 3.1).³⁰ Three of the four largest tax categories (Income, VAT and Corporate tax) recorded revenues ahead of the cumulative profile expected by the Department of Finance. As usual, the outturn for the entire year will be especially influenced by the intake for November, the month in which a large part of the taxes that are particularly difficult to forecast, notably corporate and (non-PAYE) income taxes, are collected.

Figure 3.1: Exchequer Tax Outturn and Adjusted Profile to End-August 2012:
% change on the same month in the previous year



Source: Exchequer Returns.

Note: The Department of Finance published revised tax profiles in May 2012 to adjust for a reclassification of PRSI income to Income tax. The profile was also adjusted to allow for €251 million in Corporation Tax income that related to December 2011.

This precise treatment was not reflected until after the publication of the SPU in the end-April Exchequer statement, which was published on May 2 2012.

²⁸ On June 29, it was announced that the Minister for Finance had acquired Irish Life for €1.3 billion to complete the recapitalisation as directed by the Central Bank as part of the Prudential Capital Assessment Review (PCAR) in 2011.

²⁹ Under the 1964 Insurance Act the Minister for Finance may advance funds to the Insurance Compensation Fund (ICF) on the recommendation of the Central Bank. Payments to the ICF by the Exchequer are classified as financial transactions and do not affect the General Government deficit.

³⁰ In May 2012 the Department of Finance published revised estimates for the 2012 Exchequer tax profile, due to a technical reclassification between PRSI and income tax.

Non-Tax Revenue

Non-tax related income streams have become more significant in recent years, reflecting in part the State's heavy involvement in the banking sector (See Box B). Specifically, General Government revenues relating to activities undertaken to support financial institutions in Ireland have increased from €0.8 billion in 2008 to an estimated €2.6 billion in 2011.³¹ These sources of income need to be closely monitored. For the first eight months of 2012, Exchequer non-tax revenues amounted to €2.4 billion. This represented a year-on-year increase of close to 50 per cent, partly as a result of timing factors³² and interest on contingent capital notes, which were received for the first time in July 2012. Given their increased importance, a detailed breakdown of the components of non-tax revenues and explanations behind their evolution are warranted in both *Budget* and *SPU* publications.

Box B: Banking Related Revenues in the Exchequer Data

Significant income streams arise from the State's involvement in the banking sector. Some of these income streams are included as part of non-tax related income, which has increased as a share of total Exchequer revenue from 1.3 per cent in 2007 to 7.5 per cent in 2011.

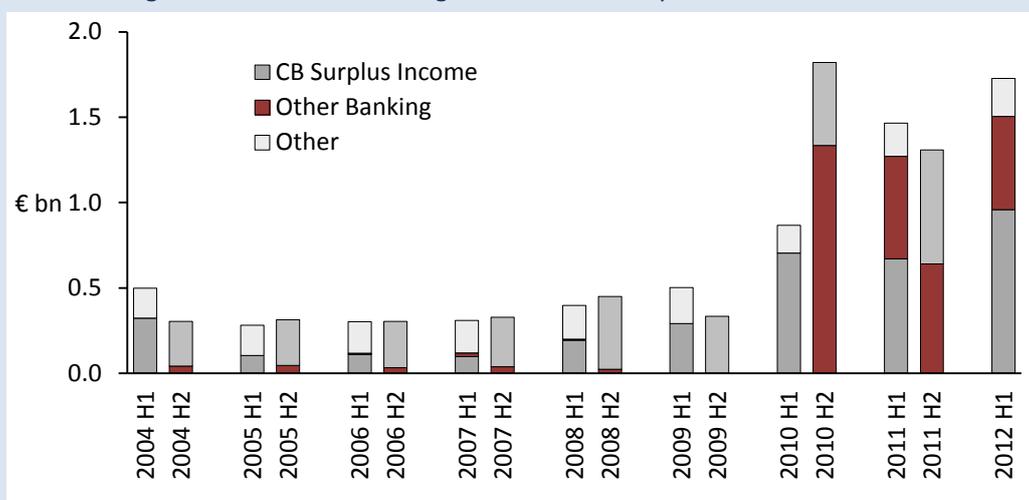
Half-year figures for non-tax revenues are split into broad banking and non-banking categories in Figure B1. Within the banking category, the major item is Central Bank Surplus Income. In June 2012, the Central Bank of Ireland (CBI) transferred just under €1 billion to the Exchequer arising from profits made in 2011. The CBI received net interest income of €1.6 billion in 2011 (inflows of €3.7 billion and outflows of €2.1 billion). Of the inflows, €1.6 billion in interest was earned on the extension of exceptional liquidity assistance (ELA). There has also been significant income relating to the Credit Institutions Scheme in recent years. The latter generated €0.5 billion in the first half of 2012.³³

³¹ See Eurostat Financial Summary Tables for Ireland.

³² There were three bank guarantee payments in the year to August 2012 compared to two a year previously.

³³ The Credit Institutions (Eligible Liabilities Guarantee) Scheme was introduced by the Minister for Finance to maintain the stability of the financial system. Institutions covered under the scheme are required to pay a fee to participate in the scheme. More details are available from: <http://www.ntma.ie/ELGScheme/CreditInstitutionsELGScheme.php>

Figure B1: Half-Year Figures for Exchequer Non-Tax Revenue



Source: Exchequer Returns.

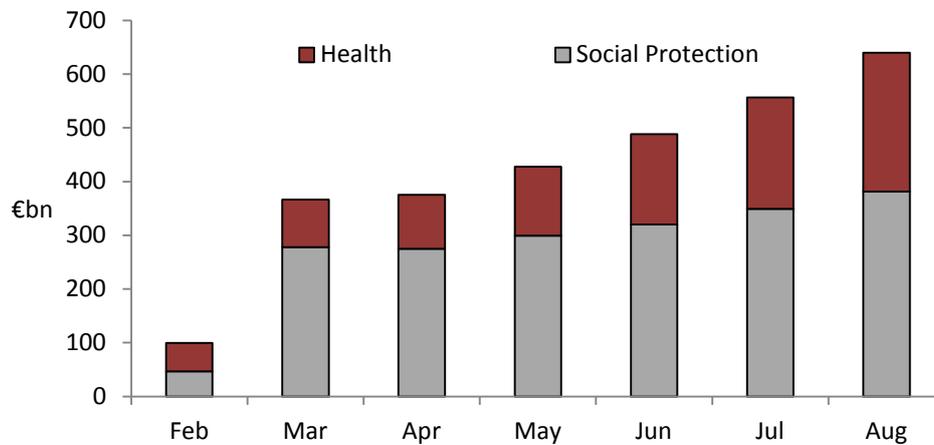
Note: Other banking is defined here as income from the 'Credit Institutions Scheme' plus other smaller banking related receipts.

Expenditure

In terms of Exchequer expenditure, there are underlying pressures in the Health and Social Protection budgets. These two areas, combined with Education, account for just over 80 per cent of net voted expenditure.³⁴ Figure 3.2a shows the excess of current spending for Health and Social Protection relative to Government targets on a monthly basis. As of end-August the combined overrun, adjusted to reflect some technical factors, was estimated to be about €640 million, or 2.3 per cent of voted current spending. Over half of the overspend in Social Protection reflected weaker than expected PRSI receipts. The technical factors refer to adjustments to allow for a reclassification of PRSI receipts, which had the effect of increasing net voted spending by the Department of Social Protection. Furthermore, an earlier than expected receipt from the UK Department of Health reduced the overrun in the Health budget.

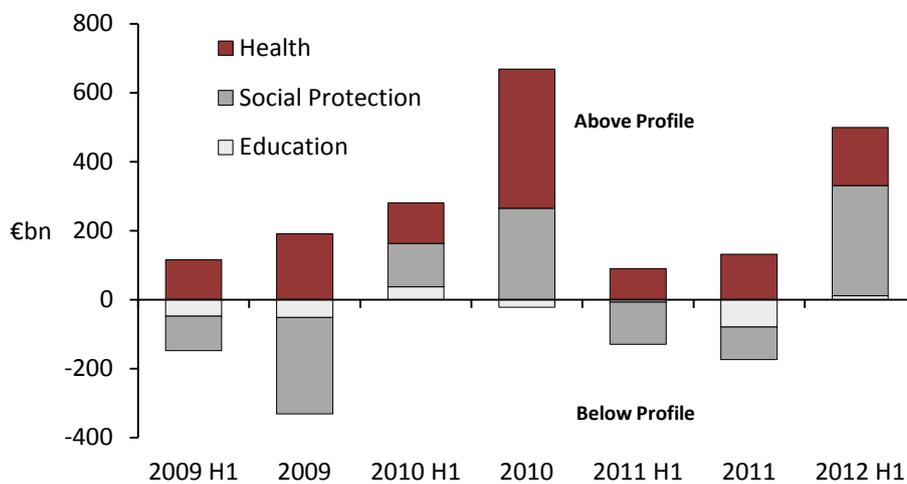
³⁴ Government expenditure is partly organised into "votes" which are approved by the Dáil each year, following the publication of the *Revised Estimates Volume (REV)*. Total Government expenditure also includes non-voted items, such as interest payments on Government debt. A further distinction arises between gross and net expenditures. The former includes expenditure by the Social Insurance Fund, National Training Fund and also "appropriations-in-aid", which are receipts retained by Departments and Agencies, to use towards their overall spend, whereas net spending is the overall drawdown of money from the Exchequer. According to the REV, total voted expenditure in 2012 is projected to be approximately €44 billion, with gross spending of €56 billion.

Figure 3.2a: Adjusted Monthly Current Expenditure Overrun in Health and Social Protection in 2012³⁵



The most recent review mission by the EU/IMF noted the need to closely monitor spending in these key areas (EC, ECB and IMF, 2012). The overrun in Health spending, in particular, is consistent with a pattern of overruns experienced in recent years, which is shown in Figure 3.2b along with the other main expenditure categories.

Figure 3.2b: Cumulative Overruns in Current Expenditure: Mid-Year Vs End-Year³⁶



³⁵ The figure allows for a technical reclassification which meant that net voted expenditure by the Department of Social Protection was significantly ahead of profile in the early months of the year. Specifically, there was a reclassification of an estimated €243 million in PRSI receipts to income tax to end-July, which resulted in higher net voted spending by the Department of Social Protection. The figure also excludes an early payment of €130 million from the UK Department of Health, which had the effect of reducing the reported Health Vote Group overspend in July.

³⁶ The early payment from the UK Department of Health does not affect the series for the first half of 2012. The profile for Social Protection spending in 2012 was revised to allow for the PRSI reclassification issue.

Expenditure Ceilings

In 2011, the Government outlined a new medium-term expenditure framework that set out current expenditure ceilings for each of 2012, 2013 and 2014. The *CER* defines the ceilings for 2012 as “binding and fully specified in terms of programme level allocations” (Department of Public Expenditure and Reform, 2011 p. 21). It also specifies that Departments that exceed their ceiling in any given year would have to offset that overspend in the following year, although there may be some leeway in the case where the department “cannot absorb the full required adjustment” (Department of Public Expenditure and Reform, 2011 p.79). As this is the first time these multi-year expenditure ceilings are in effect, it is not clear how exactly any overrun in spending in 2012 would be treated in following years. This underscores the importance of complete documentation as to how overruns are treated in subsequent years in the event that the 2012 ceiling is breached for a particular department, including their impact on other department allocations. Moreover, any impact of annual expenditure overruns on medium-term forecasts should be documented explicitly.

Budgetary Outlook for 2012

Overall, the projected *SPU* General Government deficit of 8.3 per cent of GDP for 2012 appears achievable, given the cumulative trends in the Exchequer data and the economic outlook. This assessment is shared by the EU/IMF and by the ESRI and OECD. The main risks centre on the potential for weaker than anticipated growth in the second half of the year and emerging spending pressures in key areas.

3.4.2 The Outlook for 2013 to 2015

The *SPU 2012* envisages a fall in the budget deficit to below 3 per cent of GDP by 2015. This is premised on a sustained upturn in nominal and real growth rates and additional budgetary consolidation of €8.6 billion. Both the ESRI and the OECD anticipate that the deficit in 2013 will be close to the *SPU* outlook. This target is also reflected in the projections contained in the agreed programme with the EU and IMF.³⁷

³⁷ In the Council’s previous *Fiscal Assessment Report* it was noted that the EC and IMF forecasts for the fiscal outlook for 2013 to 2015, as published in the first quarter of 2012, were similar to the Department of Finance’s outlook from *Budget 2012* (IFAC, 2012a).

Table 3.5: Fiscal Outlook 2013 to 2015

	2013	2014	2015
General Government Balance (% of GDP)			
<i>SPU 2012</i> (April 2012)	-7.5	-4.8	-2.8
IMF (June 2012)	-7.5	-4.7	-2.9
EC (June 2012)	-7.5	-4.8	-2.9
General Government Debt (% of GDP)			
<i>SPU 2012</i>	120.3	119.5	117.4
IMF	121.2	119.7	116.2
EC	120.2	119.7	117.4
Nominal GDP Growth (% change)			
<i>SPU 2012</i>	3.3	4.3	4.5
IMF	3.1	4.1	4.5
EC	3.1	4.1	4.5

The *SPU 2012* projections are contingent upon a sustained period of expenditure restraint (Figure 3.3a). Primary expenditure (defined as General Government expenditure less interest payments) is forecast to decline on average by 2.2 per cent per annum from 2013 to 2015, or in real terms by about 3.5 per cent per annum.³⁸ Cumulatively, primary spending is projected to fall as a share of GDP by approximately 7 percentage points (Figure 3.3b). Implicit in the expenditure projections, particularly for social payments, is the assumed recovery in the labour market.

³⁸ The real growth rate here is an approximation based on the *SPU 2012* numbers. Primary spending is deflated using the GDP deflator, which is projected to average 1.2 per cent per annum from 2013 to 2015 in the *SPU*. In practice, the price of Government purchases and investments, as well as the rate of increase of Government wages and welfare payments, may evolve differently from the GDP deflator. In the *SPU*, labour market wages are projected to rise by 1.4 per annum. No details are published, however, on the split between private and public sector wages.

Figure 3.3a: *SPU* Projections for Growth in Major Expenditure Categories

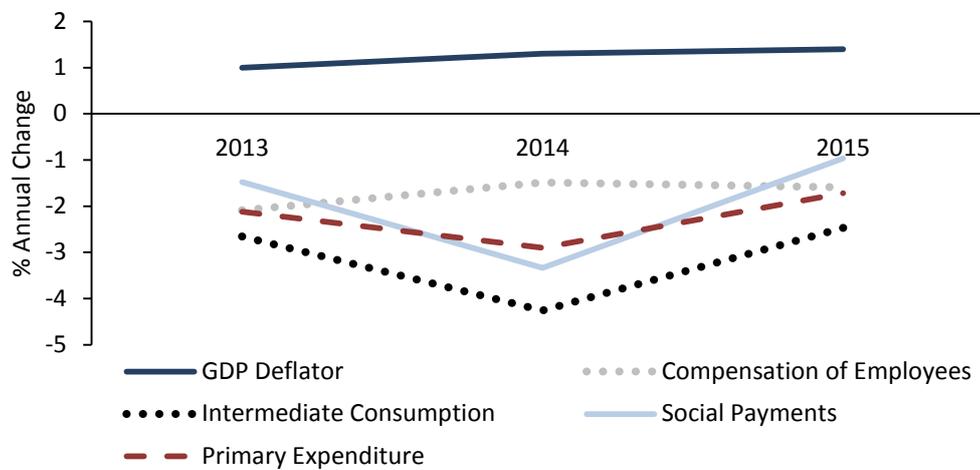
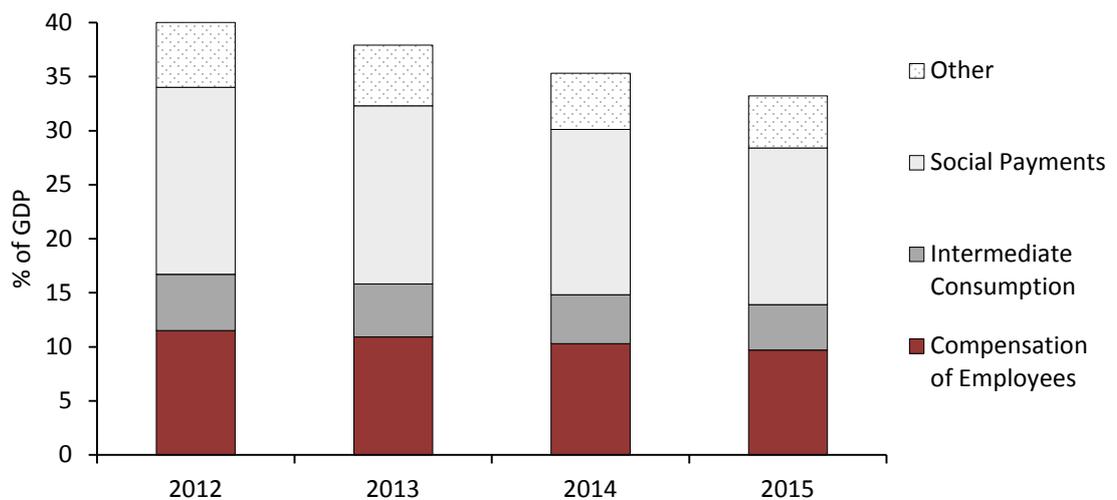


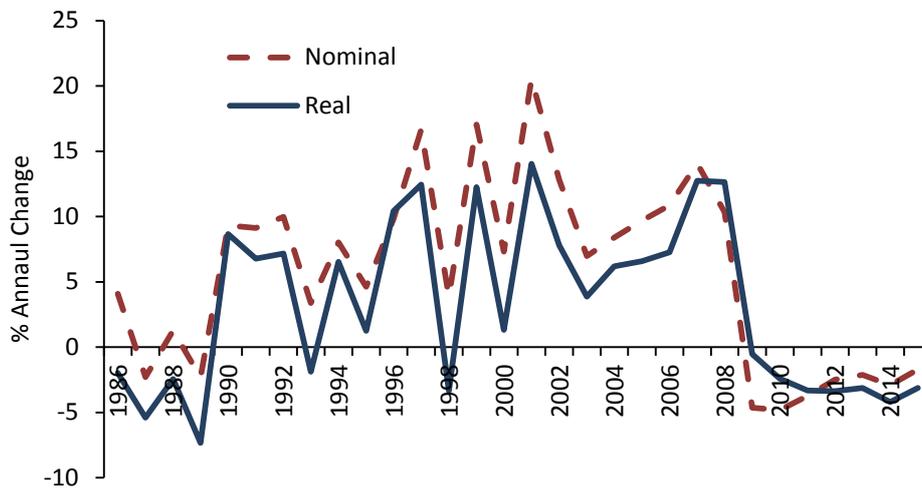
Figure 3.3b: *SPU* Projections for Primary Expenditure Categories



Judging by historical experience, delivering on these expenditure adjustments will be challenging. Figure 3.4 illustrates, for comparison purposes, the nominal and real growth rates for primary Government expenditures (excluding the exceptional banking related capital transfers between 2009 and 2011) during 1996-2011, with *SPU* projections included to 2015. While there have been years in which primary spending declined, a sustained period of nominal contraction had not occurred before the onset of the current crisis. Given the extent of the adjustments involved, it is important for policymakers not to reduce their margins of manoeuvre to achieve the necessary

consolidation by selectively putting certain measures – e.g. social welfare rates, public sector pay and tax rates – out of bounds. The Council has expressed this view in its earlier reports.

Figure 3.4: Adjusted Primary Expenditure 1986-2015



Source: Eurostat and IFAC calculations based on SPU for years 2012-15.

Notes: Primary expenditure excludes exceptional banking related capital transfers from 2009 to 2011.

Real series based on GDP deflator.

3.5 The Impact of Different Macroeconomic Assumptions on Key Budgetary Aggregates

A core message from Chapter 2 and in the Council's previous *Fiscal Assessment Report* is the high uncertainty surrounding prospects for growth in the post-bubble Irish economy. The Council's fiscal feedbacks model (see Annex B), together with the fan chart methodology used already in Chapter 2, can be used to examine the impact of different growth assumptions on the budgetary projections.

3.5.1 Deficit and Debt Ratios with Alternative Paths for GDP

The *SPU* fiscal projections assume average annual nominal GDP growth of 4 per cent between 2013 and 2015. Table 3.6 illustrates two alternative growth scenarios. In the event that nominal growth is 1 per cent weaker per annum, the deficit remains above the 3 per cent target in 2015 and the gross debt ratio fails to stabilise. Thus, additional consolidation measures would then be necessary to meet the 2015 target (Figure 3.5). Conversely, if growth is 1 per cent stronger per annum, the deficit falls to 1.5 per cent of GDP in 2015. The primary budget surplus increases, facilitating a

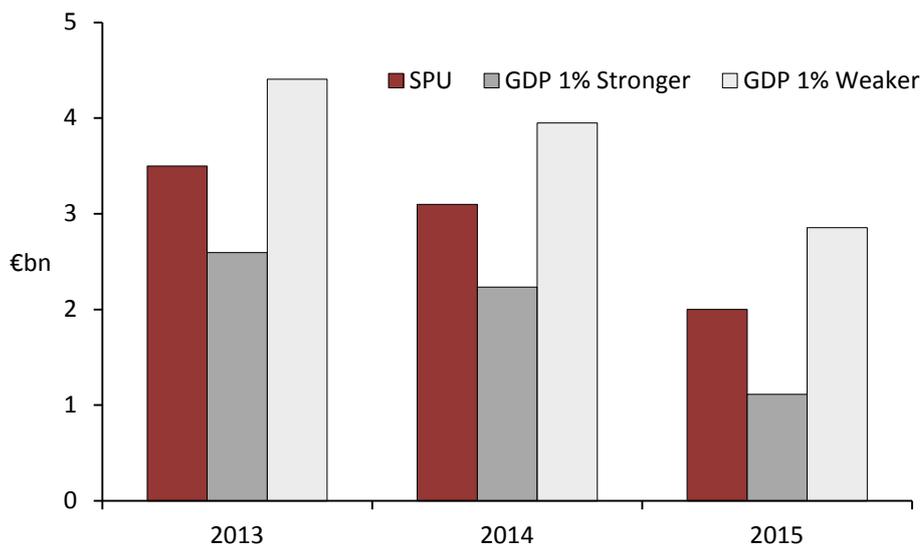
decline in the debt ratio. In such a scenario, less consolidation than currently planned would be needed to meet existing targets.

Table 3.6: Budgetary Aggregates (% of GDP) and Selected GDP Growth Scenarios

<i>SPU 2012</i>	2013	2014	2015
Nominal GDP Growth	3.3	4.3	4.5
Gross Debt	120.3	119.5	117.4
Primary Deficit	1.9	-0.8	-2.8
General Government Deficit	7.5	4.8	2.8
Nominal GDP 1 per cent weaker per annum			
Gross Debt	121.9	123.0	123.2
Primary Deficit	2.3	0.0	-1.7
General Government Deficit	8.0	5.6	4.1
Nominal GDP 1 per cent stronger per annum			
Gross Debt	118.8	116.1	111.8
Primary Deficit	1.5	-1.5	-3.9
General Government Deficit	7.0	3.8	1.5

Source: IFAC calculations.

Figure 3.5: Low and High Growth Scenarios: Additional Discretionary Adjustments to Meet Existing General Government Deficit Targets

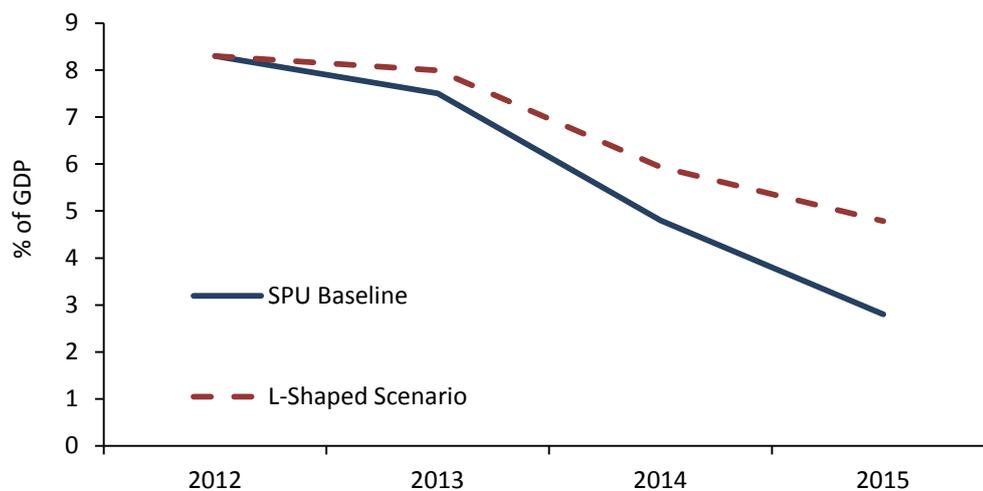


Source: SPU 2012 and IFAC calculations.

3.5.2 An Illustrative “L-Shaped” Scenario

In the construction of the fan chart for nominal GDP in Chapter 2, it was assumed that risks to growth were balanced (symmetric). However, the recent experience of forecast errors suggests that risks around the macroeconomic forecasts are likely to be greater on the downside relative to the *SPU* projections. In particular, given the nature of the current “balance sheet” recession and with uncertain growth prospects internationally, the recovery in growth may be delayed implying a prolonged “L-shaped” recession. Figures 3.6 a and 3.6b show an illustrative scenario for the public finances for this risk based on the assumption that there is no growth in real GNP during 2013-2015, consistent with only very modest growth of nominal GNP and significantly weaker GDP growth than in the *SPU*.³⁹ Under this illustrative scenario, pressures on the public finances would be considerably greater and in the absence of further additional measures, the debt ratio would fail to stabilise.

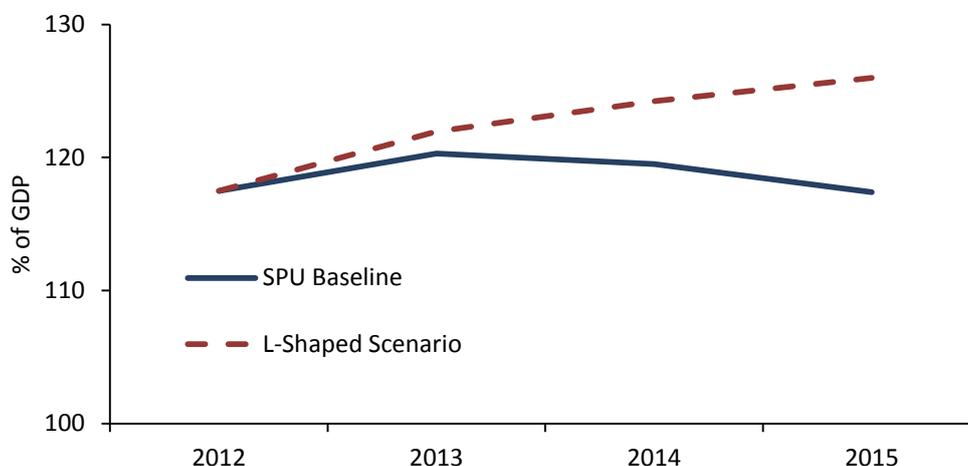
Figure 3.6a: L-Shaped Scenario, General Government Deficit % of GDP



Source: *SPU 2012 and IFAC calculations.*

³⁹ Specifically, nominal GDP growth averages 2.5 per cent per annum over the period compared to 4 per cent in the *SPU* baseline

Figure 3.6b: L-Shaped Scenario, General Government Debt % of GDP



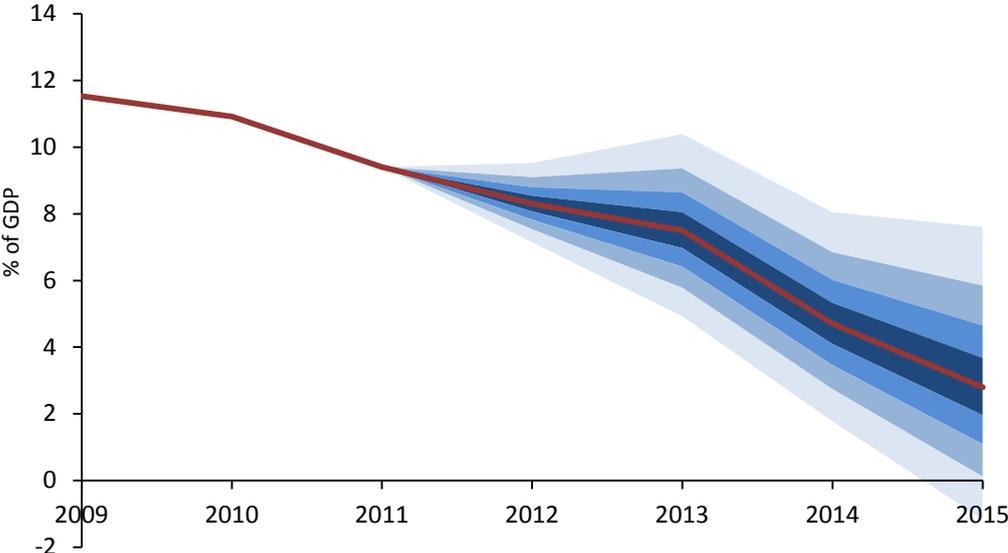
Source: SPU 2012 and IFAC calculations.

3.5.3 Fan Charts for Key Budgetary Indicators

Fan charts illustrating the impact of alternative growth paths on the public finances are shown in Figure 3.7, with the centre of the fan representing the *SPU 2012* projection. The width of the fan represents the range of possible outcomes for the fiscal aggregates based on past nominal GDP forecast errors. While there are some limitations with these charts, as described in Annex A, they do serve to highlight the fragility of the fiscal position.

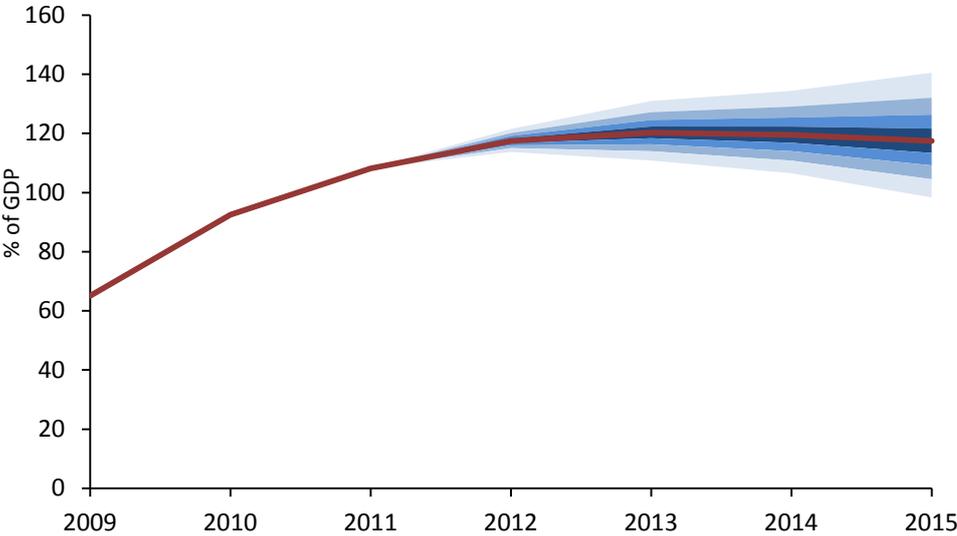
For example, according to this methodology, there is an estimated 30 per cent probability that the deficit to GDP ratio would be above 4.6 per cent of GDP by 2015, in the absence of offsetting policy adjustments (Figure 3.7a). Similarly, there would be approximately a 40 per cent probability that the debt to GDP ratio fails to stabilise by 2015 (Figure 3.7b). A fan chart was also constructed for the additional cumulative budgetary adjustments that might be necessary in the event of growth deviations, so as to meet existing EDP deficit targets (Figure 3.7c). This chart shows that there is an estimated 30 per cent probability that additional cumulative adjustments of more than €3.6 billion over the period would be needed to comply with the 2.8 per cent deficit target for 2015.

Figure 3.7a: General Government Deficit



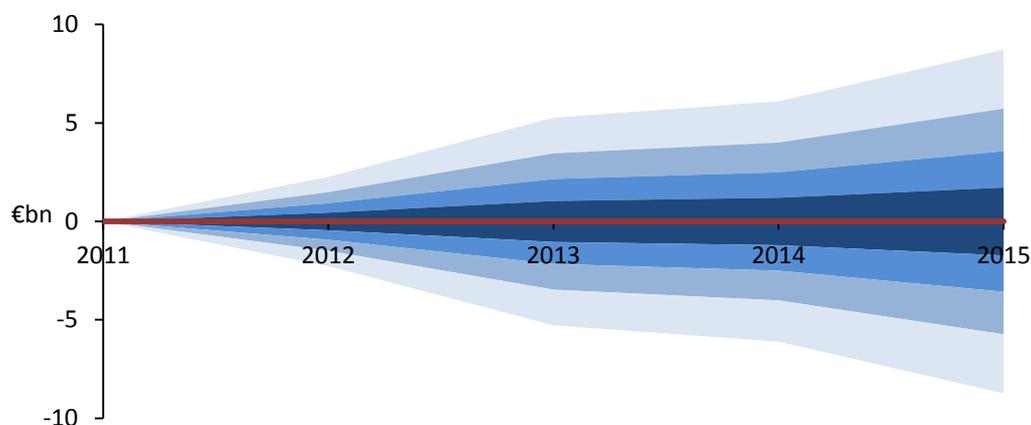
Source: SPU 2012 and IFAC calculations.

Figure 3.7b: General Government Debt



Source: SPU 2012 and IFAC calculations.

Figure 3.7c: Cumulative Additional Budgetary Adjustments Required to Meet *SPU 2012* General Government Deficit Targets



Source: *SPU 2012* and IFAC calculations.

3.6 Summary

This chapter assessed recent budgetary forecasts produced by the Department of Finance, with a particular focus on those in *SPU 2012*. The main findings are:

- The underlying General Government deficit outturn for 2011 was 9.0 per cent of GDP. This compares with a projection of 10.0 per cent in *SPU 2011* and 10.1 per cent of GDP in *Budget 2012* and represented a €1.2 billion improvement over the *Budget 2012* projection. The EDP deficit ceiling of 10.6 per cent of GDP was comfortably met. At a more disaggregated level, there were some significant differences between projections and outturns, in part reflecting methodological changes. The deficit projection for 2012 has been revised from 8.6 per cent in *Budget 2012* (December 2011) to 8.3 per cent in *SPU 2012* (April 2012) despite a downward revision to growth. This reflected, in part, revisions to projected interest payments and banking fees that helped to improve the outlook. Non-tax revenues relating to the State’s involvement in the banking sector have increased significantly in recent years, and should be closely monitored.
- A General Government deficit of 8.3 per cent of GDP for 2012 looks achievable at this stage given the cumulative trends in the Exchequer data and the economic outlook. That said, there

have been significant spending overruns in Health and Social Protection. The current year overrun in Health reflects a similar pattern in recent years.

- To facilitate adequate assessment of budgetary projections, the Council urges that comprehensive and timely explanations be provided publicly on: (i) methodological changes and data revisions that impact the fiscal outturn or official forecasts; (ii) sources of major modifications to forecasts and; (iii) the components of non-tax revenues.
- The *SPU 2012* projections for 2013-2015 are in line with projections from other agencies.
- At a more disaggregated level, the *SPU* projections show the need for significant real expenditure reductions in all main categories, notwithstanding underlying spending pressures. Given the extent of the required total adjustment, the Council again urges that all adjustment margins be kept under close review, including tax rates, public-sector pay and pensions and welfare rates.
- Sensitivity analysis undertaken by the Council reveals risks around budgetary targets and the fragility of debt sustainability.

4. Assessment of the Fiscal Stance

4.1 Introduction

As part of its mandate under the Fiscal Responsibility Bill (FRB), the Fiscal Council shall “. . . in relation to each *Budget* and *SPU*, provide an assessment of whether the fiscal stance for the year or years concerned is, in the opinion of the Fiscal Council, conducive to prudent economic and budgetary management, including by reference to the provisions of the Stability and Growth Pact .” (Department of Finance, 2012b). This chapter provides an assessment of the fiscal stance set out in the 2012 *Stability Programme Update (SPU)* – the most recent statement of the Government’s fiscal policy position. It also considers the question of debt sustainability.

The chapter is organised as follows. In Section 4.2, the Government’s fiscal stance is reviewed and assessed with particular consideration to developments on debt sustainability, market assessments of state creditworthiness and aggregate demand conditions. Section 4.3 takes up the issue of debt sustainability, focusing on a comparison of feasibility calculations based on GDP and GNP measures of fiscal capacity. A hybrid measure is introduced that puts differential weight on GNP and the excess of GDP over GNP as an intermediate measure of fiscal capacity. Section 4.4 concludes.

4.2 Assessing the Fiscal Stance: An Update

Table 4.1 shows key indicators of the Government’s fiscal stance for the period to 2015. The table also records the Council’s suggested alternative stance, which involves a relatively modest degree of additional adjustment compared to the Government’s baseline.

In previous reports, the Council concluded that the Government’s fiscal stance was appropriate (IFAC, 2011 and IFAC, 2012a) and thus, in the language of the FRB, “conducive to prudent economic and budgetary management”. However, after balancing competing factors relating to supporting growth and achieving debt sustainability, the Council made a case for additional adjustments over the period to 2015.

Table 4.1 The Fiscal Stance: Alternative Assessments

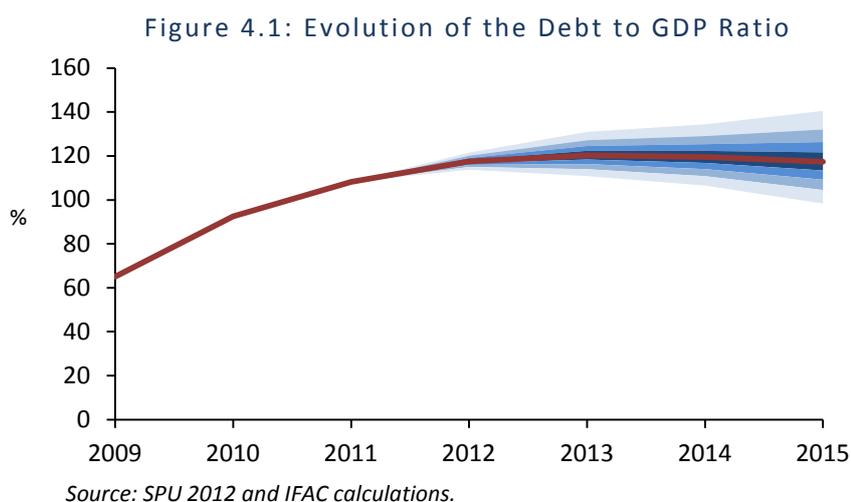
GGB (% of GDP)	2013	2014	2015	
<i>SPU 2011</i>	-7.2	-4.7	-2.8	
IFAC Alternative October 2011	-6.4	-3.6	-1.0	
<i>Budget 2012</i>	-7.5	-5.0	-2.9	
IFAC Alternative April 2012	-7.4	-4.6	-1.7	
<i>SPU 2012</i>	-7.5	-4.8	-2.8	
IFAC Alternative September 2012	-7.5	-4.5	-1.9	
Primary Balance (% of GDP)	2013	2014	2015	
<i>SPU 2011</i>	-1.1	1.7	3.4	
IFAC Alternative October 2011	-0.9	2.2	4.7	
<i>Budget 2012</i>	-1.9	0.8	2.8	
IFAC Alternative April 2012	-1.8	1.2	4.0	
<i>SPU 2012</i>	-1.9	0.8	2.8	
IFAC Alternative September 2012	-1.9	1.0	3.7	
Debt (% of GDP)	2013	2014	2015	
<i>SPU 2011</i>	118.0	116.0	111.0	
IFAC Alternative October 2011	117.0	115.3	109.8	
<i>Budget 2012</i>	119.0	118.0	115.0	
IFAC Alternative April 2012	119.8	118.6	114.7	
<i>SPU 2012</i>	120.3	119.5	117.4	
IFAC Alternative September 2012	120.3	119.4	116.8	
Assumed Consolidation € billions	2013	2014	2015	2013 - 2015
<i>SPU 2011</i>	3.1	3.1	2.0	8.2
IFAC Alternative October 2011	3.9	3.8	3.7	11.4
<i>Budget 2012</i>	3.5	3.1	2.0	8.6
IFAC Alternative April 2012	3.9	3.8	3.7	11.4
<i>SPU 2012</i>	3.5	3.1	2.0	8.6
IFAC Alternative September 2012	3.5	3.5	3.5	10.5

The Council’s approach to identifying the appropriate fiscal stance recognises a trade-off between supporting domestic demand and the need to ensure debt sustainability, in part with a view to regaining market access and sustaining access to official-creditor support (as and if needed), under reasonable conditions. To assess the recent evolution of this trade-off, the most recent projected path for the debt to GDP ratio, market indicators of creditworthiness and the main macroeconomic aggregates are reviewed in turn.

4.2.1 Debt Sustainability

Figure 4.1 shows the Government’s most recent central projection for the debt to GDP ratio out to 2015. The debt ratio is projected to peak next year at 120.3 per cent of GDP, with small declines over the following two years. By 2015, the debt ratio is projected to be declining at a rate of 2.1 percentage points of GDP, helped by a projected primary budget surplus of 2.8 per cent of GDP.

There is significant uncertainty surrounding these debt projections as illustrated by the fan chart in Chapter 3 (which is repeated in Figure 4.1). It should be stressed that these fan charts must be treated with care given the limitations of using past forecast errors to form judgements on uncertainty surrounding future projections.⁴⁰ Moreover, the fan charts do not incorporate non-growth related determinants of fiscal uncertainty. Nevertheless, even allowing for these limitations, the fan charts do highlight the fragility of debt sustainability over the medium-term. For example, they would imply an approximately 40 per cent chance of the debt to GDP ratio failing to stabilise over the projection period in the absence of offsetting policy measures.

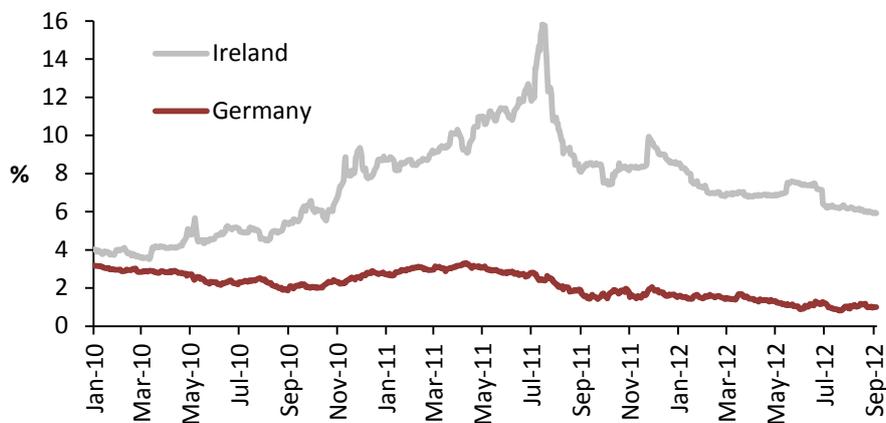


⁴⁰ The construction of the fan charts is explained in detail in Annex A.

4.2.2 Market Assessments of Creditworthiness

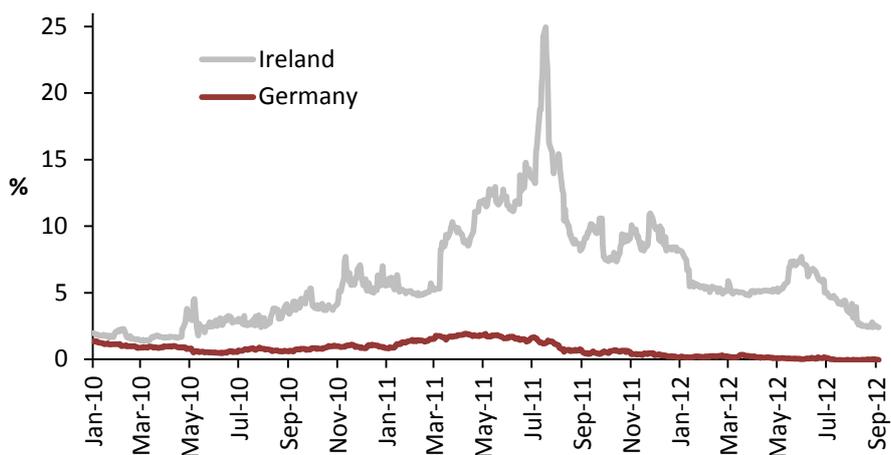
Ireland’s creditworthiness (as measured by secondary market bond yields) has improved since the Council’s previous *Fiscal Assessment Report*, continuing a general trend since July 2011. Market indicators of creditworthiness worsened in the weeks prior to the June 29 Euro Zone leaders’ summit, with the deterioration particularly marked at the 2-year maturity (see Figures 4.2a and 4.2b). Yields have declined substantially since late June, and there has also been a noticeable steepening of the yield curve since comments on bond-buying proposals at the short-end of the yield curve were made by ECB President, Mario Draghi, during a press conference in August.⁴¹

Figure 4.2a: 8-Year Bond Yield



Source: DataStream.

Figure 4.2b: 2-Year Bond Yield



Source: DataStream.

⁴¹ The transcript is available at: <http://www.ecb.int/press/pressconf/2012/html/is120802.en.html>

To the surprise of many analysts, Ireland made a return to the bond markets in 2012. The initial return in late January involved an exchange of €3.5 billion of an existing bond maturing in 2014 (30 per cent of the nominal amount of the bond outstanding) for a newly issued 2015 bond. In early July, €0.5 billion of 3-month Treasury Bills were auctioned at a yield of 1.8 per cent, with bids covering 2.8 times the offered amount. In late July, €1.04 billion of 2013 and 2014 bonds were switched in 5- and 8-year maturities, and €4.19 billion were sold in outright cash sales at an overall average yield of 5.95 per cent. Finally, in response to demand for sovereign annuities following the introduction of the Pensions Board's revised funding standard, €1 billion of "amortisation bonds" were sold on August 23 at an average yield of 5.91 per cent. These developments have helped significantly to ease Ireland's funding requirements in 2014.

A combination of factors has contributed to the fall in yields, which have taken place against a background of a worsening of the broader Euro Zone crisis, with concerns of unsustainable yields spreading from the current programme countries to Italy and Spain. These include: a positive record in meeting Ireland's fiscal adjustment targets, the passage of the referendum on the "Fiscal Compact", and, more recently, expectations of bond-buying by the ECB that would bring down yields to more sustainable levels in return for European Stability Mechanism (ESM) programme conditionality. The fall in Irish yields since end-June has also been attributed in a large part to measures that would reduce the burden of Ireland's Government debt related to the banking-sector recapitalisations. The June 29 statement following the Euro Zone leaders' summit stated:⁴²

The Eurogroup will examine the situation of the Irish financial sector with the view of further improving the sustainability of the well-performing adjustment programme. Similar cases will be treated equally.

Details of this examination are expected in the coming months.

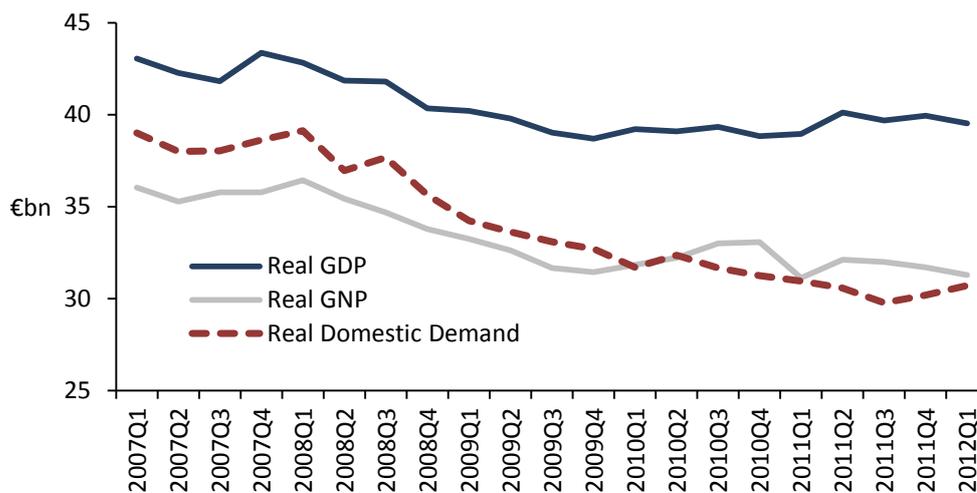
4.2.3 State of Aggregate Demand

The Irish economy's output performance remains weak, following a broadly "L-shaped" pattern (see Figure 4.3). National accounts data released in July showed that real GDP grew at a revised 1.4 per cent in 2011, up from an initial estimate of 0.7 per cent, driven by strong export growth that more than offset a decline in domestic demand. Real GNP declined by 2.5 per cent in 2011, partly

⁴² The full statement is available at:
http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/131359.pdf

reflecting the profitability of the multinational sector given the strong export growth. On a quarter-on-quarter basis, preliminary estimates indicate that both seasonally adjusted real GDP and real GNP declined in the first quarter of 2012 by 1.1 and 1.3 per cent respectively. However, quarterly real domestic demand (seasonally adjusted) recorded its first quarter-on-quarter increase since the second quarter of 2010.

Figure 4.3: Quarterly Macroeconomic Performance, 2007Q1-2012Q1



Source: QNA, July 2012.

Note: Constant Prices (Chain Linked 2010), Seasonally Adjusted.

Seasonally adjusted retail sales (excluding motors) have declined compared to the same period last year, although the pace of decline has fallen. The index, in real terms, was down annually by 0.5 per cent in the three month period to July. Household budgets continue to be squeezed by declines in disposable incomes and increases in commodity prices. Income uncertainty and balance sheet repair underpin the maintenance of a high savings rate. On a positive note, the KBC Ireland/ESRI Consumer Sentiment Index continued the trend of improvements in August, with the three-month moving average rising to a value of 66.7, which compares to a value of 56 over the same period in 2011.

National residential property prices (houses and apartments) continue to decline, with the CSO's Residential Property Price Index recording an annual fall of 13.6 per cent in July.⁴³ However, house prices in Dublin have been broadly stable since the beginning of 2012. This could portend a broader

⁴³ In 2009, 2010 and 2011, residential property prices fell by 18.3, 13.1 and 13.2 per cent respectively.

stabilisation, notwithstanding the likelihood of further protracted periods of decline in areas with significant demand-supply mismatches.

Credit conditions remain tight. The total credit extended to Irish households has contracted further, although the pace of contraction has slowed. For credit to non-financial businesses, the stock of medium- to long-run loans to non-financial businesses has shown a further fall, although the trend of increases in short-term lending (mainly overdrafts) has continued in 2012. Recent Central Bank of Ireland research points to tight credit-supply conditions with the Irish rejection rate for credit applications the second highest in the Euro Zone, while SMEs are among the most likely to have faced increased collateral requirements, increased interest rates, or lower loan quantities (Holton and McCann, 2012). Overall, the process of household, enterprise, Government and bank deleveraging continues to weigh on domestic demand conditions.

On the export front, the main international forecasting agencies have reduced their projections for regional and global growth. The recent performance of the United Kingdom's economy has been notably weaker than expected, likely reflecting the burden of the same deleveraging processes that are curbing Irish domestic demand. Irish goods exports declined marginally in the first half of the year compared to the same period in 2011. Data on service exports are less up to date, but national accounts data for the first quarter show exports from this sector were 11.9 per cent higher in volume terms than in the first quarter of 2011.⁴⁴

As discussed in Chapter 2, the Government (in common with other agencies) forecasts a return to a stronger growth in 2014 and 2015. This follows a pattern of stronger projected growth beyond a two-year window. The Government's baseline scenario involves a stabilisation and then a return to domestic demand growth, which, combined with a continued strong performance in net exports, would allow for a return to positive growth. Indeed, there is a possibility that growth could exceed expectations, as the adverse feedback loops – or vicious cycles – that currently plague the Irish economy diminish. However, the pattern of downward revisions to forecasts as the horizon shortens – and the failure of growth improvements to materialise – also points to significant downside risks to these forecasts (see Chapter 2). These revisions reflect the difficulties forecasters have in gaining a firm understanding of the post-bubble Irish economy and the ongoing volatility of the international economy.

⁴⁴ Overall, exports (at constant prices) were 6.1 per cent higher in the first quarter than in the same period of 2011.

The implications of slower growth on the appropriate size of near-term fiscal adjustments depend, in part, on the likely persistence of the slowdown. A temporary period of slow growth is more easily accommodated without increasing the size of discretionary adjustments. In the April 2012 *Fiscal Assessment Report*, the Council noted that, subject to programme targets, temporary growth shortfalls could be accommodated without additional discretionary measures. However, a sustained period of slower growth caused by either weaker than expected potential GDP growth or a long-lasting shortfall in domestic demand would increase the risk that the debt ratio is on an unsustainable path.

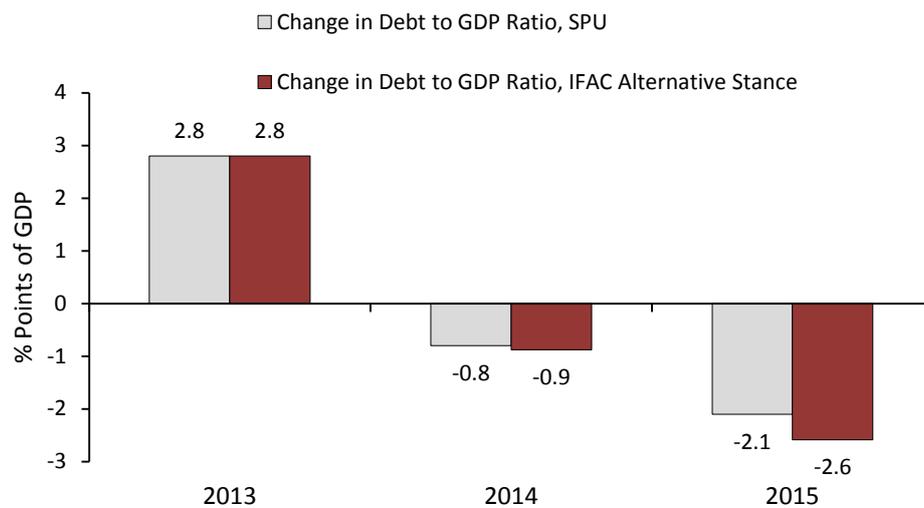
4.2.4 Assessment of the Fiscal Stance

The Council assesses that the Government's fiscal stance is conducive to prudent economic and budgetary management. Weighing the different factors noted above, however, the Council continues to believe that additional fiscal adjustment relative to current plans is warranted. However, taking into account the continued weakness in demand conditions and observed improvements in market assessments of creditworthiness, the Council has modestly scaled back the amount of additional adjustment under this alternative fiscal stance. Overall, the suggested additional discretionary adjustment was €2.8 billion in the previous report, bringing the total 2013-2015 adjustment to €11.4 billion. The additional suggested adjustment over the Government's baseline in this report is €1.9 billion over 2013-15, for a total of €10.5 billion (see Table 4.1). Under this alternative stance, the total required discretionary adjustment is €3.5 billion in each year from 2013 to 2015. The most significant difference between this and the Government's plan is that the pace of adjustment planned for 2013 is carried through into 2014 and 2015. This reflects the need to have the debt to GDP ratio on a firmer downward path at the end of the projection horizon.

Council estimates of the impacts of the additional adjustments on debt sustainability and nominal GDP growth are recorded in Figures 4.4 and 4.5. The additional adjustments would raise the rate of debt ratio reduction in 2015 by approximately half a percentage point. This is mainly driven by a larger primary budget surplus in 2015 of 3.7 per cent of GDP, compared with 2.8 per cent of GDP under the Government baseline. Assuming a multiplier of 0.5, the additional adjustments would reduce the nominal GDP growth rate by an average of 0.2 percentage points over 2013-15. The growth reducing effect is largest in 2015 (0.4 percentage points), owing largely to the concentration of additional recommended adjustment in that year. Assuming the reduction in the nominal GDP growth rate is divided proportionately between the real growth rate and the GDP deflator, the real GDP growth rate would be lowered by an average of 0.1 percentage points over

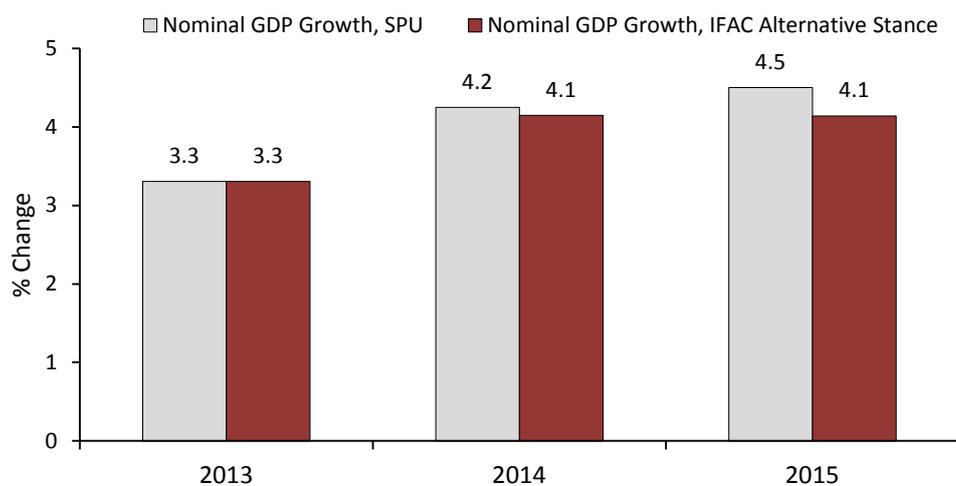
the three-year period. The additional adjustment is not recommended lightly given the existing pressures on domestic demand and the high burden of unemployment. It can be viewed as providing a small amount of additional insurance against failure to stabilise the debt ratio and the achievement of a robust return to market creditworthiness.

Figure 4.4: Comparison of Change in Debt to GDP Ratio under *SPU* and Alternative IFAC Stance



Source: SPU 2012 and IFAC calculations.

Figure 4.5: Comparison of Projected Nominal Growth Rates under *SPU* and Alternative IFAC Stance



Source: SPU 2012 and IFAC calculations.

4.2.5 The Government's Stimulus Programme

In July 2012, the Government announced a fiscal stimulus package amounting to €2.25 billion over 2012-2018, mainly intended to cover previously postponed infrastructural projects in the Transport, Education, Health and Justice sectors. The Government estimates that these projects will generate 13,000 jobs. It is envisaged that the funding will come from a combination of loans from the European Investment Bank (EIB), a run-down of liquid assets held by the National Pension Reserve Fund (NPRF), allocation of a portion of privatisation revenues, a new licensing arrangement for the National Lottery and the use of public-private partnerships (PPPs), although the precise composition and timing of the expenditures in question were not specified. No information has been made available regarding the expected rate of return of the projects.⁴⁵

In the context of the broader fiscal adjustment effort, the question arises as to possible rationales for a programme of capital spending – labelled “stimulus” – that is in some sense separate from the fiscal adjustment effort already planned. It is useful to consider the arguments for and against such an approach.

The special financing arrangements may appear to ease the debt sustainability costs of the package. However, although the use of financial assets in the NPRF means that the stimulus spending does not add to gross Government debt, it does raise measures of financial net debt given the rundown of the State's financial assets. From a debt sustainability perspective, financial net debt is arguably a more pertinent measure than gross debt, even if it is not the focus of European fiscal rules. Moreover, the use of privatisation-related revenue to fund the programme means that these funds are not available to reduce debt. Furthermore, the use of State guarantees for EIB borrowing or under PPPs creates off balance sheet or contingent liabilities. These liabilities could be equivalent to public debt to the extent that they can involve a future repayment burden and hence affect potential investors' assessments of creditworthiness. Alternatively, the State may be foregoing future income, as for example by allowing a private contractor to charge for the use of a toll road. Overall, although diversified financing mechanisms for State spending should be explored, referring to a particular segment of the overall adjustment plan as a “stimulus”, does not take away the need to consider carefully the impact of reducing assets or increasing actual/contingent liabilities on the State's financial position.

⁴⁵ The briefing note from the Department of Public Expenditure and Reform is available here: http://per.gov.ie/wp-content/uploads/Briefing-Note-17-7-12-_2_2.pdf.

Another possible rationale can be thought of in terms of shifting the trade-off between domestic demand and creditworthiness.⁴⁶ All else equal, a more stimulative fiscal stance would increase domestic demand, but is also likely to cause creditworthiness to deteriorate by worsening the fiscal position. Part of this deterioration is likely to come from expectations of larger deficits in the future, recognising the difficulty of credibly committing to make any stimulus programme a once-off. The separate-stimulus approach could be seen as providing an instrument to allow a once-off stimulus programme, while helping to maintain the credibility of longer-term fiscal adjustment. While recognising this argument in principle, the Council believes that any improvement in the trade-off is likely to be slight – it will be hard to credibly commit to such stimulus action being truly once-off.

Apart from supporting overall domestic demand, it might be considered desirable to allow for higher capital spending for its own sake, especially since Ireland's adjustment programme to date has relied heavily on cuts to capital spending. However, if this is the goal, it would be preferable to build the capital expenditure package directly into the overall adjustment programme.

Weighing the above considerations, as well as the importance of ensuring transparency, the Council has significant reservations regarding the appropriateness of the separate-stimulus approach under current conditions. Any policy action should be in the context of the main adjustment programme. On the substantive question of whether there should be an increase in capital spending, the Council does not believe that the total amount of Government spending set out in the fiscal stance underlying *SPU 2012* should be increased without explicit revenue-raising offsets. However, recognising the difficult financing conditions in sovereign bond markets, the Council supports the exploration of financing mechanisms such as loans from the EIB and well-structured PPPs to finance capital expenditure set out in the main programme. Close attention would need to be given to the effects on the broader State balance sheet.

⁴⁶ In the international debate on fiscal adjustment, many economists have called for efforts to support the economy in the short run, while making credible commitments to reduce deficits and debt over the longer run.

4.3 Debt Sustainability and the GDP Versus GNP Debate

4.3.1 The Appropriate Measure of Fiscal Capacity

The rapid rise in the State's indebtedness combined with continued high deficit levels has raised concerns about Ireland's debt sustainability. For the purposes of this discussion, debt sustainability is defined as the achievement of a debt to income path consistent with market creditworthiness and long-run solvency constraints. In turn, this path implies required paths for the actual and structural primary budget deficits. The question then becomes whether these paths are economically and politically feasible. Economic feasibility requires that fiscal adjustments actually bring down the primary deficit, i.e. they are not directly self-defeating (see IFAC 2012a, p.46). Political feasibility requires that the needed structural adjustment can find sufficient political support to secure implementation.

In the Irish context, a much-debated issue among economists is whether GDP or GNP is the appropriate measure of fiscal/revenue capacity when judging debt sustainability. For most countries, the distinction is of minor importance given the closeness of the two measures. As documented in Chapter 2, however, Irish GNP was only approximately 80 per cent of GDP in 2011 (see Figure A1).

Taking either of the extremes of GDP or GNP is problematic. GDP is problematic as a measure of fiscal capacity because a euro of the excess of GDP over GNP (which is dominated by multinational profits) is likely to provide less revenue capacity than a euro of GNP. On the other hand, going to the other extreme of using just GNP puts zero weight on the revenue potential of the excess component. This suggests the value of a hybrid measure, where an appropriate relative value is placed on a euro of the excess component relative to a euro of GNP.

4.3.2 A Hybrid Measure of Fiscal Capacity

One approach to assigning weights is to use regression analysis that links GDP/GNP to past tax revenues, controlling for trends in tax policies. An analysis for the period 1985 to 2011 is described in Box C. This analysis implies that a euro of the GDP – GNP excess is worth approximately 0.4 of a unit of GNP in terms of tax revenues, although a wide confidence interval surrounds this estimate.

Box C: A Hybrid Measure of Fiscal Capacity

Nominal GDP is often used as a measure of a country's revenue/fiscal capacity. This is reflected, for example, in the use of the path of the debt to GDP ratio in judgements of debt sustainability. For Ireland, however, GNP has often been considered a more meaningful measure of fiscal capacity, given the large share of foreign multinational profits in GDP. Although subject to Irish corporate taxation, these profits are generally thought to provide a low tax yield per euro of income compared to other components of GDP. This has led many observers to recommend focusing on GNP as a superior indicator of fiscal capacity.

This box explores an intermediate position, where GDP is divided into two components: GNP and the excess of GDP over GNP (with the latter equal to the negative of net factor income). We then allow the two components to have different capacities in calculating an overall hybrid measure of fiscal capacity.

One way to identify the relative capacities is to examine the historic relationship between the two components using a simple regression analysis. Letting R represent total revenue, the relationship between revenue and the two components can be written as:

$$R = \gamma_1 GNP + \gamma_2 (GDP - GNP).$$

The coefficients on GNP and the GDP–GNP excess are the measures of fiscal capacity. The value of a euro of the excess relative to a euro of GNP is given by the ratio of the coefficients, $\frac{\gamma_2}{\gamma_1}$.

As all the aggregates have strong time trends, we run the regression in first differences. We also explore specifications which include a polynomial in time to control for changes in tax rates/new taxes and a crisis indicator for the years 2008 to 2011. The data for the regressions are for the period 1985 to 2011, with total revenue measured as General Government revenue.

The results are shown in Table C1. Estimated coefficients are reasonably stable across specifications. In general, the coefficient on the GDP–GNP excess is imprecisely estimated, with p values around 0.15. The value of the key relativity measure varies from a low of 0.33

to a high of 0.43, with a value of 0.40 in the base specification (regression 3). The coefficients on the time-trend variables (which crudely control for tax policies) are statistically insignificant, as is a crisis “dummy” for the period 2008-2011. We use the values from this base specification in constructing the hybrid measure as, $H = GNP + 0.4(GDP - GNP)$.

Table C1: Relationships Between Government Revenue, GDP and GNP 1985 to 2011

	1	2	3†	4	5	6	7
Δ GDP	0.37*** (0.03)						
Δ GNP		0.41*** (0.03)	0.40*** (0.03)	0.40*** (0.03)	0.40*** (0.03)	0.43*** (0.04)	0.39*** (0.07)
Δ (GDP - GNP)			0.16 (0.09)	0.17 (0.11)	0.14 (0.11)	0.15 (0.11)	0.13 (0.11)
Time					30.41 (31.98)	-192.47 (164.56)	-217.19 (170.17)
Time Squared						7.81 (5.66)	10.13 (6.60)
Crisis (2008 to 2011 = 1)							-1548.32 (2186.06)
Constant	None	None	None	-40.62 (285.93)	-469.14 (530.36)	550.03 (903.47)	717.98 (944.45)
Estimated γ_2/γ_1	NA	NA	0.40	0.43	0.35	0.35	0.33
Adjusted R Squared	0.89	0.88	0.90	0.87	0.87	0.88	0.88
Obs	26	26	26	26	26	26	26

Note: Standard errors in parentheses. Statistical significance: *** 1 per cent; **5 per cent; *10 per cent.
†Regression 3 is the base specification.

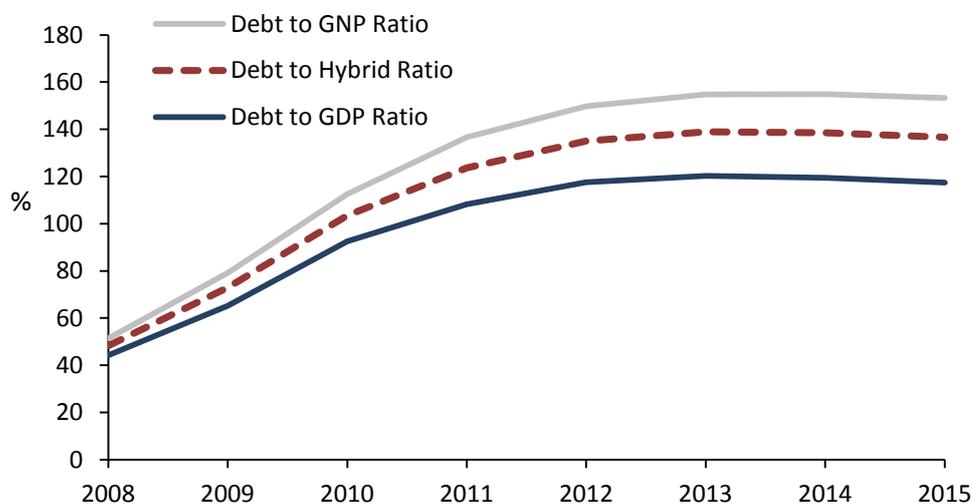
Overall, the result from the simple regression analysis suggests a hybrid measure, H , of the form: $H = GNP + 0.4(GDP - GNP)$. Care must be taken in using this measure given the sensitivity of the

relationship between net factor income and the composition of gross factor income flows. However, given the limitations of the primary measures, it is useful at this stage to explore the implications of this illustrative hybrid measure for assessments of debt sustainability. The next section examines debt sustainability for three candidate income measures of fiscal capacity: GDP, GNP and the hybrid measure based on the 0.4 weighting.

4.3.3 Debt Sustainability for Alternative Measures of Fiscal Capacity

The projected evolution of the three debt-to-income measures based on *SPU 2012* projections are shown in Figure 4.6. (In each case, the year-specific nominal debt level is the same, with the differences arising from the income denominator used.) Not surprisingly, moving to a GNP-based measure substantially shifts the debt-to-income path upwards, with the ratio reaching a peak of 154 per cent in 2014. By construction, the hybrid-based measure lies between the GDP- and GNP-based measures, with a peak of 138.9 per cent in 2013.

Figure 4.6: Comparison of Evolution of Debt to Income Ratio under Alternative Income Definitions



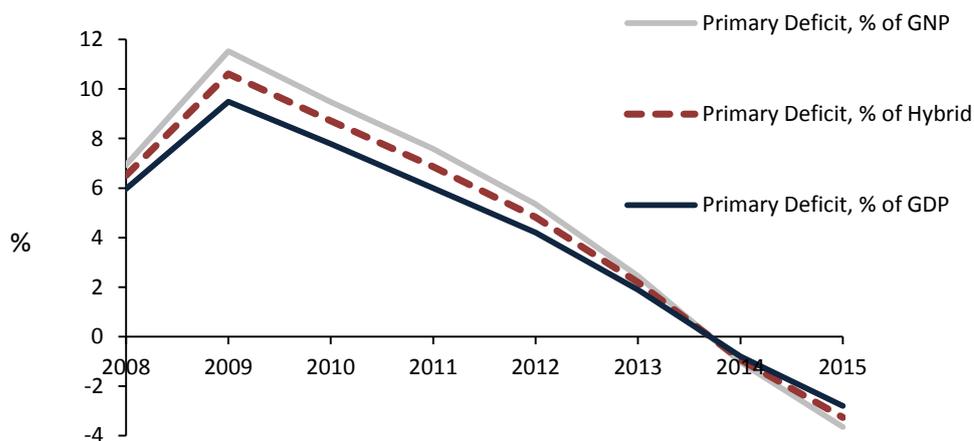
Source: *SPU 2012* and IFAC calculations.

A key issue is how the choice of income measure to use in the debt-to-income ratio changes the view of the feasibility of fiscal adjustment and, thus, debt sustainability. The focus is on the feasibility of the planned adjustments with reference to international experience and Irish adjustments achieved to date. A first approach is to examine the feasibility of the *planned* fiscal

adjustment out to 2015 under the current programme, implicitly assuming that this is sufficient to achieve debt sustainability. A second approach is to consider how a shift to a GNP or hybrid measure as the correct measure of perceived fiscal capacity would change the *required* adjustment for debt sustainability.

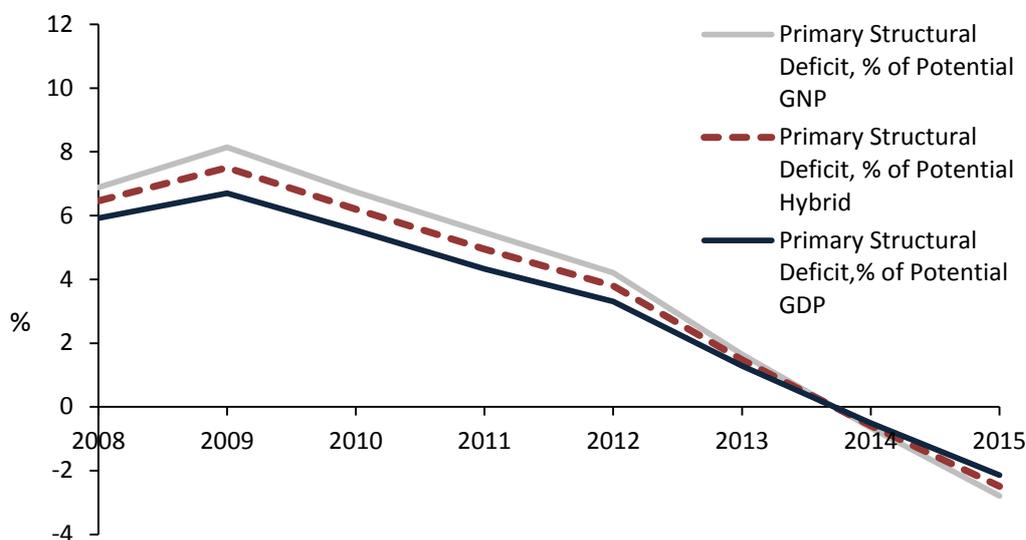
Considering the first approach, Figure 4.7 shows the evolution of the projected primary deficit as a percentage of income under the three income measures. The figure is constructed to show how the three primary deficit ratios would need to evolve in order to reach the primary deficit/GDP ratio of 2.8 per cent specified in *SPU 2012* to 2015. Figure 4.8 shows the corresponding evolution of the projected structural primary deficit under the three measures. Moving from the GDP-based measures to either the GNP- or hybrid-based measures increases the size of the total measured adjustment (as percentages of income) and also the maximum primary surplus as a share of income that must be achieved. Table 4.2 summarises the implied changes in the primary and structural primary balance for each of the three income measures. The total required improvement in the primary balance is 2.9 percentage points larger under the GNP- than under the GDP-based measure over the period 2009-2015 (15.2 versus 12.3). The difference between these measures for the structural primary balance is 2.1 percentage points (10.9 versus 8.8). In terms of the maximum primary and structural primary balance that must be achieved, the GNP-based measure is 0.9 (3.7 versus 2.8) and 0.7 (2.8 versus 2.1) percentage points higher respectively.

Figure 4.7: Comparison of Evolution of the Primary Deficit as a Share of Income under Alternative Income Definitions



Source: SPU 2012 and IFAC calculations.

Figure 4.8: Comparison of Evolution of the Structural Primary Deficit as a Share of Potential Income under Alternative Income Definitions



Source: SPU 2012 and IFAC calculations.

Table 4.2: Planned Changes in the Primary Balance, Alternative Income Measures, 2009 to 2015.

GDP	Percentage Point Change 2009-2015	Peak Value (Year)
Primary Balance (% of GDP)	12.3	2.8 (2015)
Structural Balance (% of Potential GDP)	8.8	2.1 (2015)
GNP		
Primary Balance (% of GNP)	15.2	3.7 (2015)
Structural Balance (% of Potential GNP)	10.9	2.8 (2015)
Hybrid		
Primary Balance (% of Hybrid)	13.9	3.3 (2015)
Structural Balance (% of Potential Hybrid)	10.0	2.5 (2015)

Source: SPU 2012 and IFAC calculations.

The feasibility of any large-scale fiscal adjustment programme will be country and time dependent. Nevertheless, one perspective on feasibility can be gleaned from international comparisons of what other OECD economies have achieved in the past. Table 4.3 shows the maximum six-year improvement in both the primary and cyclically adjusted primary balance (CAPB) over the period

1995 to 2011. It also shows the size and timing of the maximum actual and primary structural balances that were achieved in each country. While the required Irish adjustments are not unprecedented, the table confirms the enormous comparative debt sustainability challenge Ireland faces, made even more difficult by having to take place during a period of weak growth. If a GNP- or hybrid-based measure is taken as a more appropriate measure of fiscal capacity for Ireland to compare with the GDP-based adjustments internationally, the challenge facing Ireland looks even greater.

Another perspective on the feasibility of the required adjustment comes from comparing the remaining adjustment task with the demonstrated capacity from what has been achieved already. Figures 4.7 and 4.8 show that significant achievements in the primary and structural primary deficits have been already achieved in Ireland, including through a period when recession and evaporating revenues such as stamp duty and VAT on new houses were bearing down on overall tax receipts.

The second approach is to consider whether the required fiscal adjustment to achieve sustainability itself increases once an indicator other than GDP is viewed as the appropriate measure of fiscal capacity. As a concrete illustration of the issue, suppose that sustainability requires that Ireland be on a path to a debt to income ratio equal to 60 per cent by some target date. If the appropriate measure of fiscal capacity (and thus the appropriate denominator in the debt to income ratio) is, say, GNP, the ultimate target expressed as a share of GDP would be 48 per cent (60×0.8) – assuming GNP is just 80 per cent of GDP. This would require an even greater pace of adjustment in the primary balance, posing an even greater challenge in terms of feasibility.

Table 4.3: International Comparisons of Fiscal Adjustments, 1995-2011

	Max CAPB	Year	Max PB	Year	Max Δ in CAPB*	Start Year	Max Δ in PB*	Start Year
Hungary	2.7	1997	8.0	2011	6.9	2006	13.7	2006
Finland	6.9	2000	7.9	2000	8.3	1995	13.2	1995
Norway	-0.1	2000	16.1	2006	2.9	1995	12.1	1995
Sweden	4.8	2000	5.7	2000	7.9	1995	10.6	1995
Germany	1.8	2007	3.9	2000	3.2	2002	10.4	1995
Netherlands	3.4	1999	4.9	2000	1.7	1995	9.6	1995
Czech Rep.	-1.9	2011	0.0	2007	3.9	2003	9.0	1995
UK	3.3	1999	6.0	2000	5.5	1995	8.8	1995
Slovak Rep.	-0.1	2000	-0.9	2007	4.2	1997	7.4	2000
Iceland	3.2	2006	5.6	2006	4.0	2001	6.7	2002
Canada	5.4	1999	6.0	2000	4.3	1995	5.6	1995
Japan	-3.2	2008	-1.4	2006	2.5	2003	5.5	2003
Estonia	1.4	2003	2.2	2006	1.4	1998	4.9	1999
Slovenia	-0.3	2003	1.0	2007	0.0	1995	4.8	1995
Luxembourg	4.2	1997	4.7	2001	3.2	1995	4.7	1996
Spain	2.3	2006	3.7	2006	2.8	1995	4.5	1995
Denmark	4.8	2005	6.0	2005	2.3	2000	3.7	1995
United States	2.9	1998	3.9	2000	2.0	1995	3.7	1995
France	0.8	1999	1.1	2000	1.5	1995	3.6	1995
New Zealand	5.1	2006	5.7	2006	2.5	1999	3.6	1999
Austria	2.0	1997	2.5	2001	1.5	1996	3.5	1995
Chile	2.2	2008	2.7	2008	2.6	1995	3.5	2003
Poland	0.4	1996	0.7	1995	1.5	2002	2.7	2002
Australia	3.2	1999	3.4	1999	1.6	1995	2.6	1995
Belgium	6.8	1998	6.4	2001	0.9	1995	2.4	1996
Korea	4.0	2000	4.2	2000	1.9	1997	2.1	1997
Italy	5.4	1997	6.0	1997	1.8	2005	1.9	1995
Portugal	-0.3	1995	-0.4	1997	2.0	2001	1.5	2006
Greece	4.8	1999	3.5	1998	4.9	2006	1.3	1995

Source: OECD.

Notes: CAPB = Cyclically Adjusted Primary Balance, PB = Primary Balance. *Change is calculated over 6 year periods.

4.3.4 Reducing Ireland's Debt Burden

Following the June 29 Euro Zone leaders' summit, expectations have risen of some relief on the portion of Ireland's debt (roughly 40 per cent of GDP) that relates to the cost of bank recapitalisations. Two broad avenues have been raised. First, there is the possibility of more advantageous financing arrangements to replace those associated with the current promissory note arrangement used to bailout Anglo and INBS (see IFAC, 2012a, p. 26 for a detailed discussion of the fiscal implications of the promissory note arrangements). This could involve reducing the net present value of the Anglo/INBS-related debt. Second, following a possible Spanish precedent, as noted in the Summit communiqué,⁴⁷ the ESM could decide to purchase the Government's equity stakes in other "pillar" banks without this involving any liability of the Irish sovereign to the ESM. To the extent that the receipts from such purchases are used to pay down debt, this would reduce the outstanding value of gross Government debt. However, assuming the ESM would pay no more than fair value for these stakes, this would not reduce the State's net financial debt, as the value of financial assets would be reduced in tandem with the State's liabilities. Nevertheless, such asset sales would take future risks relating to the value of the State holdings off the State's balance sheet. Implementation of the Spanish approach (and hence its potential retroactive application to Ireland) is conditional upon the establishment of a pan European financial regulator. End-2012 has been mentioned as a possible date for this action. However, it should be noted that that current ESM support to the Spanish banking sector, involves a liability to the Spanish state. The establishment of a pan European regulator could take more time to put in place.

⁴⁷ The June 29 post-summit communiqué stated: "When an effective single supervisory mechanism is established, involving the ECB, for banks in the euro area the ESM could, following a regular decision, have the possibility to recapitalize banks directly. This would rely on appropriate conditionality, including compliance with state aid rules, which should be institution-specific, sector-specific or economy-wide and would be formalised in a Memorandum of Understanding. The Eurogroup will examine the situation of the Irish financial sector with the view of further improving the sustainability of the well-performing adjustment programme. Similar cases will be treated equally." The full statement is available at: http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/131359.pdf.

4.4 Summary

- As most recently set out in *SPU 2012*, the Government's fiscal stance is assessed to be "conducive to prudent economic and budgetary management". However, debt sustainability and creditworthiness remain fragile. Weighing the risks to debt sustainability and ongoing weakness in the real economy, the Council supports an alternative fiscal stance involving a total of €1.9 billion of additional adjustments in the period to 2015 compared to the Government's baseline. Due to continued weakness in demand and some further improvement in market assessments of Ireland's creditworthiness, the amount of additional adjustment over the period is scaled back by €0.9 billion since the Council's previous *Fiscal Assessment Report*, with no additional adjustments for 2013 in the Council's alternative scenario. Model-based projections indicate that this alternative scenario would yield a primary budget surplus of 3.7 per cent of GDP in 2015, which is 0.9 per cent of GDP higher than under current plans. This would result in the debt to GDP ratio falling at a rate of 2.6 percentage points of GDP in 2015, which is 0.5 percentage points faster than under current plans. The Council believes that this would provide additional insurance, albeit limited, in the effort to ensure debt sustainability.
- While recognising possible rationales for a stimulus programme that is in some sense separate from the main adjustment programme, balancing the relevant considerations – including the importance of transparency – the Council is of the view that any relaxation sought by the Government in the overall fiscal stance would be better achieved within the context of the main fiscal adjustment programme. On the substantive question of whether there should be an increase in capital spending, the Council does not believe that the total amount of Government spending set out in the fiscal stance underlying *SPU 2012* should be increased without explicit revenue-raising offsets.
- Judgements about debt sustainability are coloured by whether it is believed GDP or GNP provides the most appropriate measures of Ireland's fiscal capacity. However, each of these primary measures has limitations. The GNP measure ignores the revenue potential of the excess of GDP over GNP (which is dominated by the profits of multinational enterprises operating in Ireland). The GDP measure implicitly assumes that the revenue capacity of a euro of the GDP – GNP excess is equal to a euro of GNP. An intermediate or "hybrid" measure that puts differential weight on the fiscal capacity of a euro of GNP and a

euro of the excess is also developed. Ireland's required fiscal adjustment is challenging under all of the measures, and most so under the GNP measure. A more encouraging perspective emerges when the additional adjustments are compared to what has been achieved already in the fiscal adjustment process. While relief on the banking-related part of Ireland's debt is unlikely to be a panacea, any relief would increase the chances of a successful adjustment, measured by a robust return to market creditworthiness.

5. Compliance with Fiscal Rules: A Preliminary Examination

5.1 Introduction

As part of its mandate under the Fiscal Responsibility Bill (FRB), the Council is required to provide an assessment, at least once a year, of compliance with the Budgetary Rule or (if applicable) the Correction Mechanism set out in the FRB.⁴⁸ More broadly, under the FRB, as part of its assessment of the fiscal stance, the Council is expected to provide its assessment with “reference to the provisions of the Stability and Growth Pact”.⁴⁹

This chapter sets out some background for the Council’s planned future assessment of compliance with the rules. The Council’s approach to meeting this part of its mandate will be further developed in future reports, which will follow the expected enactment of the legislation later this year. Section 5.2 introduces the fiscal rules, which would come into force under the FRB, and already exist under the EU framework. In an illustrative exercise, Section 5.3 considers how the *SPU 2012* projections would comply with fiscal rules and also the implications of the rules under a scenario that extends beyond the 2015 horizon of the *SPU*. Section 5.4 summarises the main conclusions.

5.2 The Fiscal Rules

Ireland has been subject to a set of fiscal rules for many years via the Stability and Growth Pact (SGP) of the EU Treaty, which was adopted in 1997. This Pact was reformed in 2005 and again in 2011. The most recent reforms, the so-called “six pack”, came into force in late 2011. At the same time, the “Fiscal Compact” Treaty⁵⁰ requires countries to have rules requiring that the budget position be “balanced or in surplus” that are included in national law of “binding force and permanent character, preferably constitutional”. A further set of essentially procedural rules would be put in place under the so-called “two pack” of regulations currently under consideration by the EU. In Ireland, the FRB is designed to meet the Fiscal Compact requirement by putting in place the required fiscal rules, as well as putting in place the formal establishment of the Irish Fiscal Advisory Council. Analysis undertaken by the Council has suggested the value and oversight such fiscal rules could have for Ireland (Hagemann, 2012; IFAC, 2012b).

⁴⁸ See Part 3, Section 8._(2) of the FRB which is available here:
<http://www.finance.gov.ie/documents/pressreleases/2012/mn109append.pdf>

⁴⁹ See Part 3, Section 8._(2).

⁵⁰ Treaty on Stability, Coordination, and Governance (TSCG).

The EU and FRB requirements are complex, both in terms of the procedures around them and the exact provisions and wording. While the original legal texts provide the definite statement of the rules, they are essentially built around three fiscal rules:

- The EU SGP requirement for the General Government deficit to be less than 3 per cent of GDP.
- The EU SGP requirement and FRB **Budgetary Rule**, which in essence requires that the budget, in structural terms, be in balance or surplus, but can be achieved through reaching an EU agreed country-specific Medium Term Budgetary Objective (MTO) for the structural balance.⁵¹ The Budgetary Rule would apply from the coming into force of the FRB.
- The EU SGP requirement and FRB **Debt Rule** that a General Government debt ratio in excess of 60 per cent of GDP should be reduced according to a formula that requires approximately a 1/20th reduction of the excess over 60 per cent per year.⁵² This requirement does not apply for 3 years following the ending of the Excessive Deficit Procedure, which should mean after 2018 for Ireland.⁵³

The FRB does not mandate a specific statutory role for the Council in monitoring compliance with the Debt Rule, although the equivalent SGP requirement is one of the references for its overall fiscal assessment in the draft legislation.

⁵¹ The MTO for Ireland is currently set at the lower limit allowed by the EU rules of an annual structural balance of -0.5 per cent of GDP. This EU lower limit can be reduced to -1.0 per cent of GDP if debt is significantly smaller than 60 per cent of GDP and long-term sustainability risks to the public finances are low.

⁵² The exact benchmark formula for the allowable debt to GDP ratio is: $Benchmark = 60 \text{ per cent} + 0.95/3(b_{t-1} - 60 \text{ per cent}) + .95^2/3(b_{t-2} - 60 \text{ per cent}) + 0.95^3/3(b_{t-3} - 60 \text{ per cent})$, where b is the debt to GDP ratio. The requirement can also be met on a forward-looking basis based on EC forecasts for the benchmark at $t+2$. The effect of the cycle is taken into account.

⁵³ To see why the rule is referred to as the 1/20th rule, note that if the benchmark formula only uses a one-period lag, then the formula becomes: $Benchmark = 60 \text{ per cent} + 0.95(b_{t-1} - 60 \text{ per cent})$. Now setting the current-period debt to GDP ratio equal to the benchmark, the formula can be written as: $b_t = 60 \text{ per cent} + (1 - 0.05)(b_{t-1} - 60 \text{ per cent})$. Rearranging, this can be written as: $b_t - b_{t-1} = 0.05(60 \text{ per cent} - b_{t-1})$. The required change in the debt to GDP ratio is equal to 1/20th (or 0.05) of the difference between last period's debt to GDP ratio and 60 per cent. If the debt to GDP ratio is above 60 per cent, then the rule requires the percentage point fall in the debt to GDP ratio is as given by the formula. Thus, the actual benchmark formula with up to three-year lags can be viewed as an extension to a simple 1/20th rule.

In addition, the adjustment path where the structural balance does not meet the MTO and FRB Budgetary Rule requires:

...steps to achieve it over the cycle... [and]... adjustment effort should be higher in good times; it could be more limited in bad times. [countries] should pursue an annual adjustment in cyclically adjusted terms, net of one-off and other temporary measures, of 0.5 of a percentage point of GDP as a benchmark (European Commission, 2012c p. 5).⁵⁴

If the EC or the Government believes that there is failure to abide by the Budgetary Rule, the FRB provides for a Correction Mechanism, which the Council would be required to assess. The rules are explained in more detail in Box D.

Box D: Fiscal Rules set out in the Fiscal Responsibility Bill

The FRB states that the Government would “endeavour to secure” compliance with two fiscal rules: the Budgetary Rule and the Debt Rule.

The Budgetary Rule sets out that for each year:

- The “budget condition” is met. This is satisfied if the General Government budget is in balance or surplus or, if not, failure to be so is “...only as a result of exceptional circumstances and the failure to meet it does not endanger fiscal sustainability in the medium-term”. This is deemed to be respected if the Medium-Term Budgetary Objective (MTO), specified in terms of the structural balance, is met. It is currently set at a structural deficit of up to 0.5 per cent of GDP, which is the lower limit allowed by the SGP (except where the public finances are in very good health).
- The “adjustment path” condition is met. This is satisfied if the annual structural balance of the General Government is converging towards the MTO in line with the timeframe set in accordance with the 1997 EU Regulation on Surveillance and

⁵⁴ Part 2 3_(4)(b) of the FRB allows this requirement not to be met in “exceptional circumstances” and if the “failure to meet it does not endanger fiscal sustainability in the medium-term”.

Coordination.⁵⁵ If this convergence is not achieved, the adjustment path condition is still met if this failure is “...only as a result of exceptional circumstances and the failure to meet it does not endanger fiscal sustainability in the medium-term”.

The annual structural balance of the General Government is defined as the balance cyclically adjusted, i.e., adjusted to take account of effects estimated to be due to the operation of the economic cycle, and net of one-off and temporary measures, expressed as a percentage of GDP at market prices.

Related to the Budgetary Rule is a **Correction Mechanism**, which is a requirement of the Fiscal Compact and the accompanying Common Principles (European Commission, 2012a). If the EC addresses a warning to Ireland about a significant observed deviation from the adjustment path towards the MTO or if the Government considers that there is a significant deviation from the Budgetary Rule:

- the Government shall, within two months, prepare and lay before Dáil Éireann a plan specifying: (1) the period over which compliance with the Budgetary Rule is to be achieved (if that period is longer than a year, it will specify annual targets to be met in moving towards compliance), (2) the size and nature of the revenue and expenditure measures that are to be taken to secure compliance, and (3) how any revenue and expenditure measures relate to different subsectors of the General Government.
- The plan shall be consistent with the rules of the SGP and recommendations made in the context of the SPU.
- If the Government considers that exceptional circumstances have arisen during the period specified in the plan, these requirements would no longer be binding but would come back into operation when the Government considers that the exceptional circumstances have ceased to exist.

⁵⁵ Council Regulation (EC) No 1466/97. Available from: <http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1997/R/01997R1466-20050727-en.pdf>

If the Government considers that a failure to comply with the Budgetary Rule is likely to occur, the Government may, within two months, prepare and lay a statement before Dáil Éireann outlining the steps the Government intends to take to avoid such a failure.

Under the proposed mandate, the Fiscal Council would assess: (a) whether exceptional circumstances exist or have ceased to exist; (b) whether there is a failure to comply with the Budgetary Rule that constitutes a significant deviation according to SGP rules; and (c) whether progress towards securing compliance with the Budgetary Rule is being made in accordance with the Government's plan under the correction mechanism.

The FRB contains a "comply or explain" provision:

If the Government do not accept an assessment of the Fiscal Council in relation to any of the[se] matters ..., the Minister shall, within two months of being given a copy of the assessment, prepare and lay before Dáil Éireann a statement of the Government's reasons for not accepting it.

The **Debt Rule** states that, when the General Government debt-to-GDP ratio exceeds 60 per cent, the ratio should be reduced in accordance with the 1997 Excessive Deficit Regulation.⁵⁶ This amounts to around 1/20th of the percentage point gap per year, relative to a formula for the benchmark that is applied on a forward and backward looking basis. The EU requirement does not bind for the first three years after the current Excessive Deficit Procedure is closed.

5.3 Future Implications of the Fiscal Rules

Over the horizon covered by *SPU 2012* until 2015, the FRB and EU rules would be complied with in the sense that it is currently agreed that Ireland will be under an Excessive Deficit Procedure until 2015, by which time the General Government deficit would be below the 3 per cent of GDP ceiling under the SGP. The EU and FRB debt rules would not apply for a further three years, well beyond the *SPU* horizon.

⁵⁶ See Council Regulation (EC) No 1467/97. Available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997R1467:EN:NOT>

Furthermore, the planned improvement in the structural budget balance over the years to 2015 is sufficient to meet the FRB Budgetary Rule and comply with the SGP. However, the structural budget balance of -3.5 per cent for 2015 in the *SPU* would be far from the current MTO of -0.5 per cent of GDP, although there is great uncertainty about the structural position so far into the future.

To illustrate the future impact of the rules, a “long-term scenario” is constructed based on the *SPU 2012* projections to 2015 and extended to 2020. These are purely illustrative and do not represent projections. The key assumptions are:

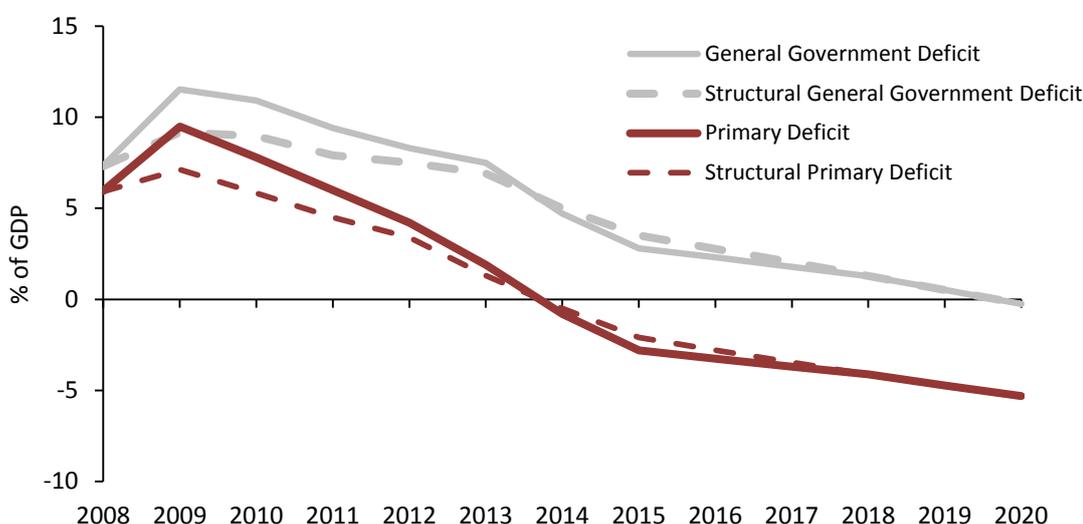
- All assumptions are as in *SPU 2012* for the period to 2015.
- Potential GDP grows at a rate of 4 per cent per year from 2016 to 2020 (2 per cent real growth and 2 per cent inflation).
- Based on the EC’s methodology, *SPU 2012* projects a positive output gap of 1.8 per cent in 2015. The scenario assumes that the output gap closes in equal 0.6 percentage point increments in 2016, 2017 and 2018, thus eliminating the gap by 2018. This results in a nominal GDP growth rate of approximately 3.4 per cent per year over this period. Nominal GDP grows at the same rate as potential GDP (4 per cent) in 2019 and 2020, thus maintaining a zero output gap for these years.
- The change in the structural primary deficit is equal to 0.2 times the change in potential nominal GDP for 2016 to 2020. This can be interpreted as only half of the increase in tax revenues derived from economic growth being spent, while the remaining half is added to the structural budget balance.⁵⁷
- The nominal interest rate on outstanding debt remains constant at its projected 2015 level of 4.9 per cent for 2016 to 2020.

The post-2015 scenario is consistent with nominal expenditure growth, albeit at a much lower rate than the increase in the size of the tax base and revenues. The scenario would thus imply tight control on expenditure, especially given the demand-driven pressures for increased government services (such as those arising from population ageing), as total expenditure would be close to flat in real terms and would be declining as a share of GDP.

⁵⁷ Assuming that structural tax revenues increase at 0.4 times the change in nominal potential GDP.

Figure 5.1a shows the evolution of the main deficit aggregates (as shares of GDP) for the long-term scenario. The General Government deficit remains well under 3 per cent of GDP, although the margin is quite small until well after 2015. Figure 5.1b shows the *change* in the structural budget balance. The structural budget balance improves because of the implied tightening of the fiscal stance due to expenditure restraint as well as the closing of the output gap. The change in the structural budget balance is more than the minimum 0.5 percentage points required by the EU SGP and would, therefore, be consistent with the Budgetary Rule. Under this scenario, the current MTO (a deficit of 0.5 per cent of GDP) is reached around 2019.

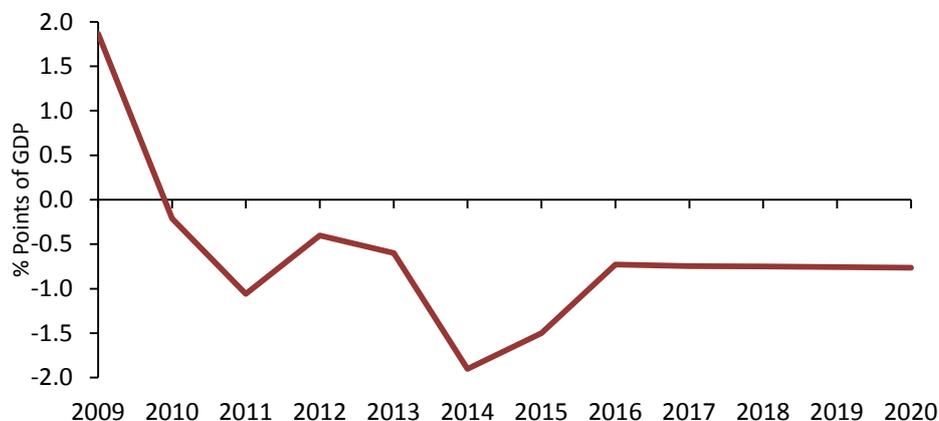
Figure 5.1a: Evolution of the Deficit: Various Measures



Source: SPU 2012 and IFAC calculations.

Note: See text for assumptions for extended projections 2016-2020.

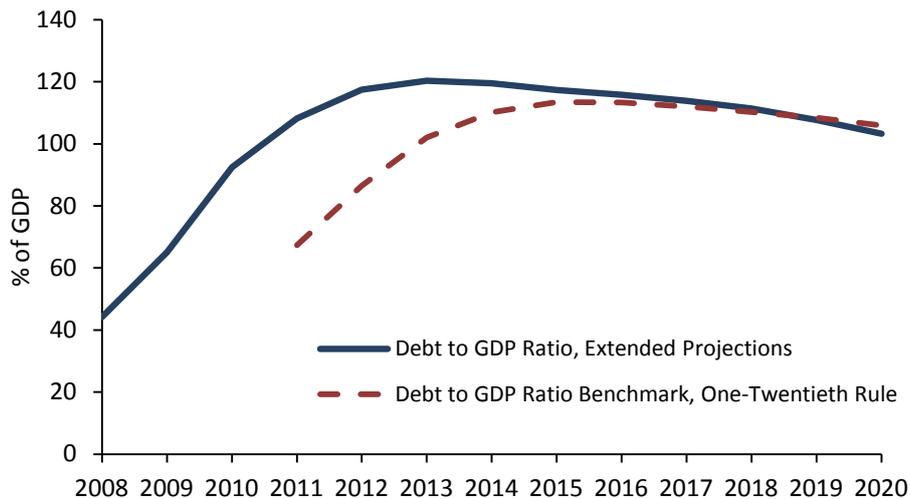
Figure 5.1b: Change in Structural General Government Budget Deficit, Extended Projections



Source: SPU 2012 and IFAC calculations.

Figure 5.2 shows the projected evolution of the debt-to-GDP ratio to 2020 and the backward-looking benchmark debt ratio that is consistent with the EU SGP and the FRB Debt Rule. As noted above, the rule does not come into force until after 2018. However, under the illustrative scenario, Ireland would be in compliance with the debt rule.⁵⁸

Figure 5.2: Debt to GDP Ratio and Debt to GDP Ratio Benchmark for 1/20th Rule

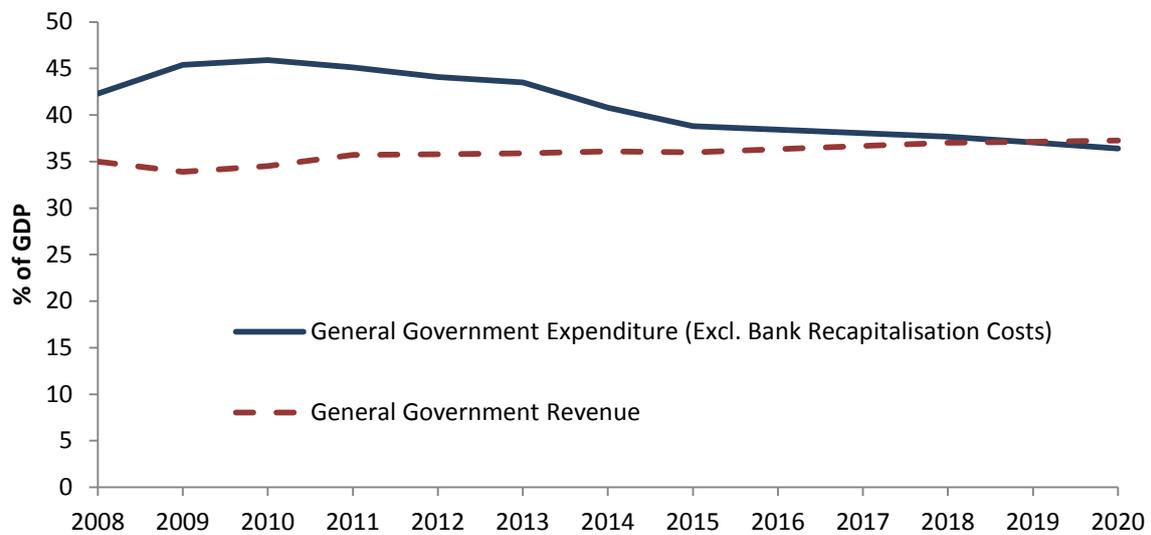


Source: SPU 2012 and IFAC calculations.

To get a sense of what the assumed scenario implies for the trends in Government expenditure and revenue, Figure 5.3 shows each as a share of GDP. The scenario involves a significant reduction in the Government expenditure share and a gradual rise in the revenue share. Of course, this balance could be altered through additional discretionary revenue increasing measures matched with additional increases in structural expenditure, while maintaining the same trajectories for the various fiscal aggregates and thus compliance with the fiscal rules.

⁵⁸ See Section 5.2 for a discussion of the relationship between the backward-looking debt rule and a simple 1/20th rule.

Figure 5.3: Total Government Expenditure and Revenue



Source: SPU 2012 and IFAC calculations.

5.4 Summary

- Ireland has an obligation to comply with the EU SGP, which was revised in 2011, and the EU “Fiscal Compact” which is being implemented in national law through the FRB. Under the FRB, the Council would have both an explicit mandate to assess compliance with the Budgetary Rule (and Correction Mechanism) and would be required to make reference to the full range of EU rules, including the debt requirement. While the details are complicated, the rules in essence relate to the budget balance, a structural budget balance (MTO) and the debt reduction requirement (Debt Rule).
- The SPU projections to 2015 show that the projected adjustment to the structural balance would be more than in line with the adjustment path under the Budgetary Rule. The Debt Rule would not apply until after 2018.
- Further ahead, under an illustrative long-term scenario starting from the SPU 2012 projections and going to 2020, the MTO/Budgetary rules are met and the Debt Rule is met after 2018. This scenario allows for very low expenditure growth and would require strict expenditure restraint in the absence of discretionary tax increases, with spending continuing to fall as a share of GDP.

Annex A: Fan Charts to Represent Forecast Uncertainty

Central forecasts provide a limited picture of the future evolution of the economy. Some of the factors that influence the economy are inherently hard to forecast – such as geopolitical events – while understanding of the economy is not precise enough to predict future economic outturns exactly.

Despite the inherent uncertainty in forecasting, “point forecasts” (i.e. a single number) have long been used in economic publications. However, even with the best forecasting techniques, for a variety of reasons, it is highly improbable that actual outcomes will coincide with the forecasts. The “fan chart” is a common way of representing the uncertainty in economic forecasting. It has been widely used by central banks over the past fifteen years (Britton, Fisher and Whitley, 1998, Cronin and Dowd, 2011).

GDP Fan Chart Methodology

There are a number of different methods that can be used to construct fan charts. These include explicit models of uncertainty or deriving errors based on past forecast performance. In using past forecasts, this can be achieved either using actual errors from forecasts made in the past or through recursive estimation of a macroeconomic model.

The GDP fan charts in this report are constructed around the *SPU 2012* nominal GDP forecasts on the assumption that this is the median forecast. The *SPU 2012* forecast is assumed to be at the centre of the fan chart. In fact, there is no clear guidance as to what *SPU* point estimates represent: whether this is the median, the mean or the modal forecast.

The fan charts constructed show uncertainty based on the one- two- and three-year ahead forecast errors from Department of Finance forecasts made between 1999 and 2005. Due to the unprecedented errors associated with the recent housing and banking crisis, the forecast errors are calculated for the sample from 1999, when the *SPU* began, to 2005.⁵⁹ It is judged that the forecast errors during the crisis are the result of rare and extreme events that would not typically be expected to occur during the short period covered by the data.

⁵⁹ The forecast made in 2005 for 2008 is excluded.

Using errors from actual forecasts is the standard approach (Office for Budget Responsibility, 2011), in part because of the reliance on judgement in making macroeconomic forecasts rather than mechanical use of macroeconomic models. The standard approach assumes that the probability distribution around the central forecast remains constant over time.

Errors are defined in terms of the difference between the cumulative growth rate in nominal GDP for a particular horizon (i.e. one-, two- and three-years ahead) in annual Department of Finance forecasts and the current estimate published by the CSO. For example, the error made in the *SPU* published in 2000 for 2003 (3-years ahead) is the difference in the cumulative growth rate over the period and not the one-year growth rate for 2003 itself. This approach is necessary, especially for projections at longer horizons, because of the persistence of forecast errors. This approach differs from standard methods, which use the unconditional growth forecast errors.

A key problem in constructing forecast errors for Ireland based on past forecasts is the scarcity of such forecasts, especially for forecast horizons beyond a two-year horizon. The *SPUs* provide the only consistent time series of official forecasts for 3-years ahead. These begin in 1999 and are at annual frequency. In recent years, the timing of the *SPU* has changed from December to April, which complicates comparisons across time periods. Each *SPU* contains at least an estimate/projection for the outturn in the current year and projections for the three following years.

The nature of these annual forecasts and the relatively short sample period means that there are a small number of observations on which to construct the fan chart, particularly bearing in mind that there are no outturns for the most recent and furthest ahead forecasts. It would be easier to construct fan charts if forecasts were more frequent. These difficulties create a “small sample” problem in gauging the density of errors. First, the small number of observations makes it difficult from a statistical perspective to estimate the density accurately due to sampling variation. Second, given the persistent errors made in the forecasts, past errors are dominated by a number of episodes, in particular around turning points in the economy (see Chapter 2).

The forecast distribution is calculated by assuming the distribution is symmetric around the point forecast (which is therefore both the median and the mean). This assumption is mechanical and should not necessarily be taken to imply that the Council judges risks to be symmetric. It is further assumed that errors follow a Normal distribution, which is a simplifying assumption. The variance

of the distribution is calculated from the observed forecast errors. The fan charts constructed in this report are shown only between the 10th and 90th percentiles because of the difficulty of accurately representing relatively rare and extreme events based on a limited time span.

The fan charts are constructed to give a representation of the uncertainty around forecast outcomes. They are not based on an explicit testable model of uncertainty and include some simplifying assumptions. Nevertheless, the fan charts do reflect the past experience of forecast errors and the uncertainty these would suggest around future forecasts.

Fan Charts for the Public Finances

Public finance fan charts can be constructed based on the macroeconomic forecast uncertainty around GDP using the fiscal feedbacks model to represent the implied uncertainty for the key public finance aggregates (see Chapter 3).

The public finance fan charts represent uncertainty around the public finances from the GDP forecasts only. They take no account of variability in the relationship between GDP and the public finances, nor other factors which could impact on the budget balance.

Furthermore, it is assumed that there is no explicit policy feedback from macroeconomic conditions to discretionary changes in the fiscal policy stance. This assumption is clearly unrealistic, although past macroeconomic forecast errors implicitly include the average of past fiscal adjustments with respect to economic outturns.

Annex B: The Fiscal Feedbacks Model

1. Introduction

This Annex outlines the model used by the Council to simulate the effects of alternative assumptions for economic growth and paths for discretionary fiscal adjustments. The Council stresses that it is not an alternative projection model to the one used by the Department of Finance; it is designed to exactly reproduce the Government's fiscal projections under their assumptions for growth and discretionary fiscal adjustments. The purpose of the model is to simulate the effects of alternative assumed paths for growth and discretionary adjustments (among other variables) on the paths for the Government's central forecasts for nominal GDP and the key fiscal aggregates. All changes are thus relative to the Government's baseline. The model is used in the report to simulate alternative scenarios and for the generation of the fiscal fan charts given a stochastic path for nominal GDP.

The model takes into account the two-way relationship between nominal GDP and the primary deficit: the primary deficit affects nominal GDP through multiplier effects; and the level of nominal GDP also affects the size of the primary deficit through automatic stabiliser effects. Thus, nominal GDP and the primary deficit are solved for simultaneously. The basic version of the model assumes that nominal GDP depends on the level of the primary deficit (therefore, permanent changes in the primary deficit have permanent effects on nominal GDP). As shown in Section 5, the model can be adapted for alternative dynamic assumptions for fiscal multipliers, and thus permanent year-specific changes to the primary deficit can have varying effects on nominal GDP over time. However, given the current paucity of knowledge on Irish fiscal multipliers, for the simulations in this report we assume that the level of nominal GDP depends on the level of the primary deficit with a multiplier of 0.5. This is consistent with the assumptions on multiplier effects used by the Department of Finance.

Section 2 shows how the model is solved for nominal GDP, the primary deficit (as a share of potential output), the total deficit and the debt. Section 3 considers the effects on key aggregates of alternative growth assumptions and alternative paths for discretionary fiscal adjustment, and thus how the model can be used for simulating deviations from the Government's baseline. Section 4 extends the basic framework to identify the required additional discretionary adjustments that would be required to meet the Government's fixed deficit targets for any values of the exogenous variables. This shows how the required adjustments are determined endogenously for any given

ultimate total deficit targets. Finally, Section 5 extends the analysis to show how alternative dynamic multiplier assumptions can be accommodated.

2. Basic Simulation Model

Model Notation:

Y = Nominal GDP

Y^* = Nominal potential GDP

Y_0 = Nominal GDP at a zero primary deficit

$\frac{Y-Y^*}{Y^*}$ = Output gap

$pdef$ = Nominal primary deficit

$pdef^*$ = Nominal structural primary deficit (equals the nominal cyclically adjusted primary deficit minus one-off measures that increase the deficit) = $pdef^{CA} - v$

$pdef^{CA}$ = Nominal cyclically adjusted primary deficit = $pdef + b(Y - Y^*)$

v = One-off measures that increase the primary deficit

def = Total nominal deficit (equals nominal primary deficit plus interest payments)

def^* = Total nominal structural deficit (equals nominal structural primary deficit plus interest payments)

D = Total government debt

sfa = Stock-flow adjustment⁶⁰

m = deficit multiplier

b = Automatic stabiliser coefficient

a = Additional discretionary adjustments

a^R = Required additional discretionary adjustments to meet target for total deficit as a share of nominal GDP

$\left(\frac{def}{Y}\right)^T$ = Target for total deficit as a share of nominal GDP

The key behavioural equations are an equation for the output gap and an equation for the primary deficit (as a share of nominal potential GDP). Equation (1) shows that the output gap is the sum of the output gap at a zero primary deficit and a term that depends on the size of the primary deficit (as a share of nominal potential GDP). The coefficient on the primary deficit variable is the deficit multiplier, m . (In Section 5, alternative assumptions for the dynamic relationship between the primary deficit and the output gap are considered.)

$$\frac{Y-Y^*}{Y^*} = \frac{Y_0-Y^*}{Y^*} + m \left(\frac{pdef}{Y^*}\right). \quad (1)$$

Equation (2) shows that the primary deficit as a share of potential GDP is the structural primary deficit (also as a share of potential GDP) less an adjustment that depends on the size of the output gap and any one-off adjustments, v . The parameter b , which we term the automatic stabiliser

⁶⁰ Stock-flow adjustments are defined as the difference between the annual change in the gross debt and the budget deficit (see Weber, 2012). Such adjustments can arise for various reasons, including: (i) valuation effects (e.g. the impact of exchange rate changes on the domestic currency value of foreign-currency denominated debt); (ii) time of recording effects (deficits are based on accrual accounting while the change in debt is based on cash flows); and (iii) “below the line” transactions such as privatisations of state assets and transactions in state-held financial assets (Weber, 2012).

coefficient, determines how the primary deficit deviates from the cyclically adjusted primary deficit, $pdef^{CA}$, when there is a positive or negative output gap. The structural primary deficit is the cyclically adjusted primary deficit less any one-off adjustments.

$$\frac{pdef}{Y^*} = \frac{pdef^*}{Y^*} - b \left(\frac{Y - Y^*}{Y^*} \right) + \frac{v}{Y^*}. \quad (2)$$

Note that (2) takes the form used by the Department of Finance to estimate the structural primary deficit. Following the EC's methodology, a value of 0.4 is used by the Department of Finance for the parameter b . Thus, choosing this value for b in our simulations ensures consistency with the Department's projections.

Substituting (2) into (1) yields a reduced-form equation for the output gap.

$$\frac{Y - Y^*}{Y^*} = \left(\frac{1}{1 + mb} \right) \left(\frac{Y_0 - Y^*}{Y^*} \right) + \left(\frac{m}{1 + mb} \right) \left(\frac{pdef^* + v}{Y^*} \right). \quad (3)$$

Next, substituting (3) into (2) yields a reduced-form equation for the primary deficit as a share of nominal potential GDP.

$$\frac{pdef}{Y^*} = \left(\frac{1}{1 + mb} \right) \left(\frac{pdef^* + v}{Y^*} \right) - \left(\frac{b}{1 + mb} \right) \left(\frac{Y_0 - Y^*}{Y^*} \right). \quad (4)$$

Up to this point, we have focused on the primary deficit. To obtain the total deficit we need to determine the path of nominal debt. The total deficit, def , is equal to the primary deficit plus interest expenditure (an accounting identity). We assume the path of the average interest rate on outstanding debt, D_{-1} is given. Thus the model does not allow for an endogenous determination of the interest rate based on the evolving stock of debt (and thus creditworthiness). The total deficit is then calculated as:

$$def = pdef + iD_{-1}. \quad (5)$$

Next, we allow the total debt to evolve according to a stock-flow relationship:

$$\Delta D = (1 + i)D_{-1} + pdef + sfa. \quad (6)$$

Note that with a given starting value of the lagged debt, equation (6) allows us to identify the path of the debt for any given path of the primary deficit (assuming given paths for the nominal interest rate and stock-flow adjustments). We thus have a four equation system, with the output gap, the primary deficit as a share of potential GDP, the total deficit and the change in the nominal debt as the four endogenous variables. Note that solving for the output gap also identifies the equilibrium level of nominal GDP given the exogenous path for potential GDP. The various endogenous variables can be expressed as shares of nominal GDP or nominal potential GDP as is convenient in any given application.

3. Simulating Alternative Scenarios

3.1 Alternative Growth Scenarios

The value of Y_0 is implied in the model based on values for nominal GDP, nominal potential GDP and the nominal primary deficit (and will depend on the chosen value of the deficit multiplier, m , and the automatic stabiliser coefficient, b). Rearranging (3), we obtain an expression for Y_0 ,

$$Y_0 = (1 + mb)Y - mbY^* - m(pdef^* + v). \quad (7)$$

Any assumed path for nominal GDP can be substituted into (7) to obtain the implied path for Y_0 , given the paths for potential nominal GDP and the cyclically adjusted primary deficit. This implied path can then be substituted into (3) and (4) to obtain the simulated paths for the output gap and the primary deficit as a share of potential GDP. Lastly, the paths for the total deficit and the debt are determined as before using (5) and (6).

3.2 Simulating Alternative Fiscal Adjustment Paths

Additional discretionary fiscal adjustments, a , are assumed to lead to reductions in the structural primary balance, $pdef^*$. To allow for such additional adjustments, we can rewrite (4) as:

$$\frac{pdef}{Y^*} = \left(\frac{1}{1+mb}\right) \left(\frac{pdef^*+v-a}{Y^*}\right) - \left(\frac{b}{1+mb}\right) \left(\frac{Y_0-Y^*}{Y^*}\right). \quad (4')$$

The effects of alternative time paths for the structural primary balance on the output gap (and thus actual nominal GDP given the time path of potential output) and the actual primary balance as a share of potential output are determined using (3) and (4). Once again, the paths of the total deficit and the debt are determined using (5) and (6).

4. Required Additional Discretionary Adjustments to Meet Given Deficit Targets

The model can also be used to identify additional discretionary adjustments, a^R , that would be required to achieve a given target for the total deficit as a share of GDP, $\left(\frac{def}{Y}\right)^T$. (Such deficit to GDP targets are the basic targets in the Government's medium-term fiscal programme, with an objective of reaching a deficit below 3 per cent of GDP by 2015.) Rearranging (4'), we obtain:

$$a = pdef^* + v - (1 + mb)pdef - b\left(\frac{Y_0 - Y^*}{Y^*}\right)Y^*. \quad (8)$$

Noting that $pdef$ is equal to $def - iD_{-1}$, we can identify the required additional discretionary adjustments to meet any given total deficit target as:

$$a^R = pdef^* + v - (1 + mb)\left(\left(\frac{def}{Y}\right)^T Y - iD_{-1}\right) - b\left(\frac{Y_0 - Y^*}{Y^*}\right)Y^*. \quad (9)$$

5. Alternative Dynamic Multiplier Assumptions

The basic version of the model assumes that it is the size of the primary deficit that matters for actual GDP (see equation (1)). However, the model can be adapted to allow for alternative dynamic assumptions for the multiplier. Consider, for example, the case where it is only the change in the current period primary deficit that impacts on current GDP, i.e. the effects of fiscal policy on the economy only last for one period. The output equation is then,

$$\frac{Y - Y^*}{Y^*} = \frac{Y_0 - Y^*}{Y^*} + m\left(\frac{\Delta pdef}{Y^*}\right). \quad (10)$$

Note that we now define Y_0 as the level of nominal GDP when the change in the primary deficit is equal to zero.

We can rewrite (2) as:

$$\frac{\Delta pdef + pdef_{-1}}{Y^*} = \frac{pdef^* + v}{Y^*} - b\left(\frac{Y - Y^*}{Y^*}\right). \quad (11)$$

Solving this pair of simultaneous equations yields:

$$\frac{Y - Y^*}{Y^*} = \left(\frac{1}{1 + mb}\right)\left(\frac{Y_0 - Y^*}{Y^*}\right) + \left(\frac{m}{1 + mb}\right)\left(\frac{pdef^* + v - pdef_{-1}}{Y^*}\right), \quad (12)$$

and

$$\frac{pdef}{Y^*} = \left(\frac{1}{1+mb}\right) \left(\frac{pdef^*+v}{Y^*}\right) + \left(\frac{mb}{1+mb}\right) \left(\frac{pdef_{-1}}{Y^*}\right) - \left(\frac{b}{1+mb}\right) \left(\frac{Y_0-Y^*}{Y^*}\right). \quad (13)$$

The foregoing case assumes that only the current period change in the primary deficit affects current nominal GDP. We can relax this assumption by instead assuming that past changes in the primary deficit affect current output, but allow year-specific multipliers based on when the change in the primary deficit occurred. This is the most general form and allows for any time path for the multiplier effects. Letting the impact of a change in the primary deficit impact future output for $n+1$ years, we can rewrite equation (1) as:

$$\frac{Y-Y^*}{Y^*} = \frac{Y_0-Y^*}{Y^*} + \left(\frac{m\Delta pdef + \sum_{i=1}^n m_{-i}\Delta pdef_{-i}}{Y^*}\right). \quad (14)$$

Using (11) to eliminate the current change in the primary deficit, $\Delta pdef$, the reduced form equations for the output gap and the primary deficit as a share of nominal potential GDP are then:

$$\frac{Y-Y^*}{Y^*} = \left(\frac{1}{1+mb}\right) \left(\frac{Y_0-Y^*}{Y^*}\right) + \left(\frac{m}{1+mb}\right) \left(\frac{pdef^*+v-pdef_{-1}}{Y^*}\right) + \left(\frac{1}{1+mb}\right) \left(\frac{\sum_{i=1}^n m_{-i}\Delta pdef_{-i}}{Y^*}\right), \quad (15)$$

and

$$\frac{pdef}{Y^*} = \left(\frac{1}{1+mb}\right) \left(\frac{pdef^*+v}{Y^*}\right) + \left(\frac{mb}{1+mb}\right) \left(\frac{pdef_{-1}}{Y^*}\right) - \left(\frac{b}{1+mb}\right) \left(\frac{\sum_{i=1}^n m_{-i}\Delta pdef_{-i}}{Y^*}\right) - \left(\frac{b}{1+mb}\right) \left(\frac{Y_0-Y^*}{Y^*}\right). \quad (16)$$

Glossary

Automatic stabilisers: An institutional feature of an economy that dampens its macroeconomic fluctuations, e.g., an income tax, which acts like a tax increase in a boom and a tax cut in a recession.

Balance sheet recession: A situation where a large portion of the private sector is reducing spending in order to repair balance sheets following the bursting of a nationwide asset price bubble.

Budget balance: The balance between total public expenditure and revenue in a specific year, with a positive balance indicating a surplus and a negative balance indicating a deficit.

Cyclical adjustment: The adjustment of figures such as GDP, government spending, tax revenues, or the budget deficit to show what they would be if total activity was at its trend or potential level.

Cyclically adjusted budget balance (CABB): This is the actual budget balance net of the cyclical component. The CABB gives a measure of the underlying trend in the budget balance.

Debt sustainability: The ability of a debtor country to service its debt on a continuing basis.

Deficit bias: The tendency of governments to allow deficit and public debt levels to increase.

Exchequer balance: The traditional domestic budgetary aggregate which measures the central government's net surplus or borrowing position.

Fiscal rule: A fixed constraint on fiscal policy which is usually defined in terms of an indicator of overall fiscal performance and is often expressed as a numerical ceiling or floor.

Fiscal stance: A measure of the intended impact of discretionary fiscal policy. It can be defined as the change in the primary structural budget balance relative to the preceding period. When the change is positive (negative) the fiscal stance is said to be expansionary (restrictive).

General Government balance (GGB): The GGB measures the fiscal performance of all arms of government. It provides an accurate assessment of the fiscal performance of a more complete

government sector. The GGB does not reflect the position of commercial State sponsored bodies as these agencies are classified as being outside the General Government sector.

MTO: The EU Medium-Term Objective which sets a country-specific numerical benchmark for the structural budget balance of the General Government.

Output Gap: The output gap is the difference between actual output and estimated potential output at a particular point in time.

Potential output/GDP: The level of real output/GDP in a given year that is consistent with a stable rate of inflation. If actual output rises above its potential level, constraints on capacity begin to bind and inflationary pressures build; if output falls below potential, resources are lying idle and inflationary pressures abate.

Primary balance: Government net lending excluding interest payments on consolidated government liabilities.

Stock-flow adjustment: Stock-flow adjustments are defined as the difference between the annual change in the gross debt and the budget deficit. This ensures consistency between the net borrowing (flow) and the variation in the stock of gross debt. It includes the accumulation of financial assets, changes in the value of debt denominated in foreign currency, and remaining statistical adjustments.

Structural balance: The structural balance is the CABB excluding one-off items.

Bibliography

Britton, E., Fisher, P. and Whitley, J. (1998). "The Inflation Report Projections: Understanding the Fan Chart". *Bank of England Quarterly Bulletin*, February 1998, pp. 30-37.

Calmfors, L. and Wren-Lewis, S. (2011). "What Should Fiscal Councils Do?" *Economic Policy*, Vol. 26, No. 68, pp. 649-695.

Central Bank of Ireland (2012). *Quarterly Bulletins, 1995-2012*. Available from:
<http://www.centralbank.ie/polstats/econpolicy/Pages/quarterly.aspx>

Central Statistics Office, (2012a). *National Income and Expenditure Accounts*. Available from:
<http://www.statcentral.ie/viewStat.asp?id=203>

Central Statistics Office, (2012b). *Quarterly National Accounts*. Available from:
<http://www.statcentral.ie/viewStat.asp?id=186>

Central Statistics Office, (2012c). *Residential Property Price Index*. Available from:
http://www.cso.ie/en/media/csoie/releasespublications/documents/prices/2012/rppi_jul2012.pdf

Cronin, D. and Dowd, K. (2011). "Fiscal fan charts - A tool for assessing member states' (likely?) compliance with EU fiscal rules", Central Bank of Ireland Research Technical Paper 15RT1.

Department of Finance (2012a). *Budget Publications, 1995-2011*. Available from:
<http://budget.gov.ie/budgets/2012/2012.aspx>

Department of Finance (2012b). *Fiscal Responsibility Bill*. Available from:
<http://www.finance.gov.ie/viewdoc.asp?DocID=7320>

Department of Finance (2011a). *Ireland – Stability Programme Update April 2011*. Available from:
<http://www.finance.gov.ie/documents/publications/reports/2011/spuirelandapr2011.pdf>

Department of Finance (2012c). *Ireland – Stability Programme Update April 2012*. Available from:
<http://finance.gov.ie/documents/publications/other/spuapr2012.pdf>

Department of Finance (2011b). *Medium Term Fiscal Statement November 2011*. Available from: <http://www.finance.gov.ie/documents/publications/presentation/Fiscalstat.pdf>

Department of Public Expenditure and Reform (2011). *Comprehensive Expenditure Report 2012-14*. Available from: <http://www.budget.gov.ie/budgets/2012/Documents/CER%20-%20Estimates%20Final.pdf>

EC, ECB and IMF (2012). *Review Mission to Ireland July 2012*. Available from: http://ec.europa.eu/ireland/press_office/news_of_the_day/troika-statement-july-2012_en.htm

Economic and Social Research Institute (2012). *Quarterly Economic Commentary, 1995-2012*. Available from: http://www.esri.ie/publications/search_for_a_publication/search_results/index.xml Dublin:

European Commission (2012a). "Common principles on national fiscal correction mechanisms", *COM(2012) 342 final*. Available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0342:FIN:EN:PDF>.

European Commission (2012b). *Economic Forecasts for Ireland*. Available from: http://ec.europa.eu/economy_finance/eu/countries/ireland_en.htm

European Commission (2012c). "Specifications on the implementation of the Stability and Growth Pact and Guidelines on the format and content of Stability and Convergence Programmes", Available from: [http://ec.europa.eu/economy_finance/economic_governance/sgp/pdf/coc/2009-11-19_code_of_conduct_\(consolidated\)_en.pdf](http://ec.europa.eu/economy_finance/economic_governance/sgp/pdf/coc/2009-11-19_code_of_conduct_(consolidated)_en.pdf)

European Council (2012). "Treaty on Stability, Coordination and Governance in the Economic and Monetary Union". Available from: http://european-council.europa.eu/media/639235/st00tscg26_en12.pdf

European Union (1997). "Resolution of the European Council on the Stability and Growth Pact" Amsterdam, 17 June 1997 (97/C 236/01), Available from: [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997Y0802\(01\):EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997Y0802(01):EN:HTML)

Hagemann, R. (2012). *Fiscal Rules for Ireland*, commissioned by the Irish Fiscal Advisory Council. Available from: <http://www.fiscalcouncil.ie/wp-content/uploads/2011/12/Fiscal-Rules-for-Ireland.pdf>

Holton, S. and McCann, F. (2012). "Irish SME credit supply and demand: comparisons across surveys and countries". *Central Bank of Ireland Economics Letter Series*, Vol. 2012, No. 8.

Irish Fiscal Advisory Council (2011). *Fiscal Assessment Report, October 2011*. Dublin: Irish Fiscal Advisory Council.

Irish Fiscal Advisory Council (2012a). *Fiscal Assessment Report, April 2012*. Dublin: Irish Fiscal Advisory Council.

Irish Fiscal Advisory Council (2012b). *Strengthening Ireland's Fiscal Institutions*. Dublin: Irish Fiscal Advisory Council.

International Monetary Fund (2012). "Ireland and the IMF: Publications". Available from: <http://www.imf.org/external/country/IRL/index.htm?pn=0>

Koo, R. (2011). "The World in Balance Sheet Recession: Causes, Cure, and Politics", *Real-World Economics Review*, 58, pp 19-37.

Office for Budget Responsibility (2011). *Economic and Fiscal Outlook November 2011*. London: Office for Budget Responsibility.

Organisation for Economic Co-operation and Development (2011). *Ireland - Economic forecast summary (May 2012)*. Paris: Organisation for Economic Co-operation and Development.

Weber, A. (2012). "Stock-Flow Adjustments and Fiscal Transparency: A Cross-Country Comparison". *IMF Working Paper WP/12/39*. Available from: <http://www.imf.org/external/pubs/ft/wp/2012/wp1239.pdf>