The recovery in the public finances in Ireland following the financial crisis

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Abstract

The turnaround in the fiscal position in Ireland over the past 6-7 years has been dramatic. From double digit deficits, a rapidly rising debt ratio and entry into an EU/IMF support programme, by end 2015, the General Government deficit and debt ratios were down to 1.9 and 78.6 per cent of GDP, respectively – the latter falling by 40 percentage points in 3 years. This culminated in a successful exit from both the programme and the Excessive Deficit Procedure (EDP). Much of this progress reflects the hard choices made (beginning in 2008) to correct the public finances through a series of consolidation measures totalling €30 billion. The key role played by interest costs in facilitating this turnaround is however often overlooked as are a number of other well timed factors including data revisions and stronger than expected revenues. This paper takes a comprehensive look back at these factors and their roles in facilitating the exit from the EDP while also enabling higher levels of spending.

1. Introduction

In 2015, the General Government deficit in Ireland improved to 1.9 per cent of GDP, with the debt ratio falling below 80 per cent of GDP for the first time since 2009. This ensured a successful exit from the Stability and Growth Pact's *Excessive Deficit Procedure* (EDP) and marked a dramatic improvement relative to the situation that prevailed in 2010. In that year, Ireland with a rapidly rising debt ratio and the highest deficit in the Euro Area was effectively locked out of the bond markets and had to enter into an EU/IMF support programme.

There have been a number of articles and papers written on the fiscal crisis in Ireland, its origins and policy responses, including a multitude of EU/IMF related documents. The Irish Fiscal Advisory Council (IFAC), set up in response to the crisis (in 2011) has regularly reported on fiscal and economic developments through its bi-annual *Fiscal Assessment Reports*. Whelan (2013) documented the key factors that contributed to the economic crisis in Ireland with particular attention paid to structural imbalances, the role of the banking system and policy responses (both domestic and international). Keane (2014) also reviewed the public finances in Ireland, specifically the causes of the crisis and discretionary policy responses.

Much of the improvement in the fiscal position reflects the hard choices made (beginning in 2008) to correct the public finances through a series of consolidation measures in successive budgets. The role played by interest costs are often overlooked as are a number of other well-timed (and perhaps fortuitous) factors that included statistical revisions and buoyancy in certain revenue categories. This paper reviews these factors through the adjustment period to highlight their role in both enabling Ireland to exit from the EDP while also facilitating higher levels of spending.

The paper is structured as follows. In Section 2, a broad overview of the public finances in Ireland through the crisis period is presented. Section 3 focuses on the evolution of the General Government Balance and the better than expected performance over the crisis period (specifically 2011 to 2015).

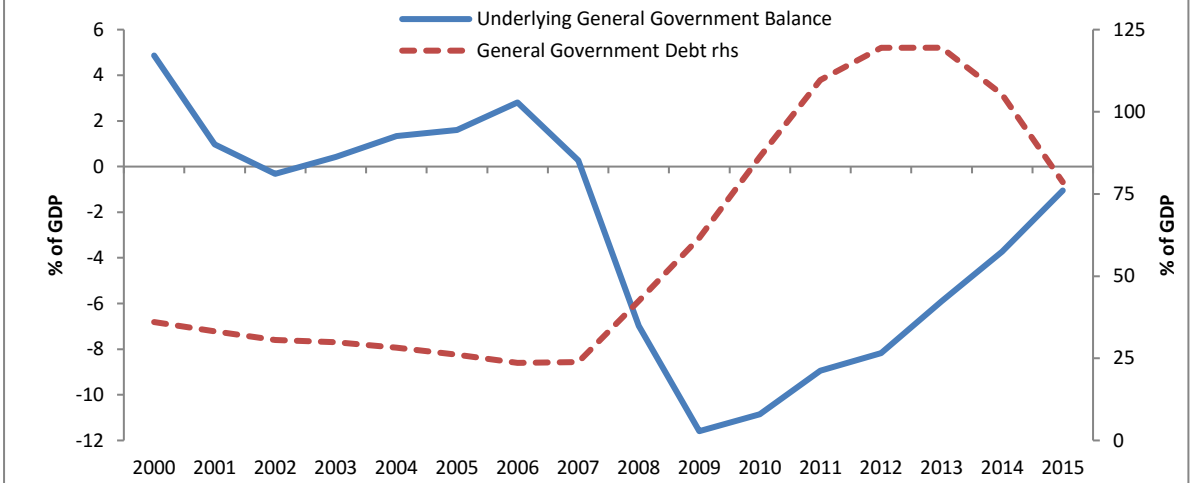
[1] The author is an economist at the Central Bank of Ireland (CBI). The views expressed are not necessarily those held by the CBI. All errors and admissions are my own. I would like to thank xxxx and xxxx for comments on an earlier draft.

In Section 4, the roles played by interest costs and data (GDP) revisions in driving much of the improvement is highlighted with some counterfactual scenarios modelled in Section 5. Section 6 concludes.

2. The public finances in Ireland during the crisis years (2008-2015)

With the onset of the financial crisis from 2008, the fiscal position in Ireland rapidly unwound. The combination of a marked economic slowdown, a collapsing housing market and banking problems resulted in rapidly rising deficit and debt ratios (Figure 1).[2] Having been in a position of strong surplus from 2003 to 2007, the public finances deteriorated sharply with the underlying deficit peaking in 2009 at 11.6 per cent of GDP.[3] The marked rise in the deficit culminated in an EDP being launched in 2009 and entry into a formal EU/IMF assistance programme in late 2010.

FIGURE 1: FISCAL BALANCES



In response to the deteriorating fiscal position, successive governments embarked on a prolonged period of fiscal consolidation from mid-2008 to 2014. In total, consolidation measures of close to €30 billion or 17 per cent of GDP were introduced (Table 1). These adjustments were to a large extent set out in the *National Recovery Plan* (published in 2010) and were an integral part of the assistance programme agreed with the EU/IMF in December 2010 (herein known as the Programme).[4] This involved financial support of €80 billion over a 3-year period with €67.5 billion in external support. This included:

- €22.5 billion from the IMF
- €22.5 billion from the European Financial Stability Mechanism (ESM)
- €17.7 billion from the European Financial Stability Facility (EFSF)

[2] The economy contracted by just over 15 per cent between 2008 and 2010, while the unemployment rate peaked at 15 per cent in 2012 (from just under 5 per cent in 2007).
[3] The underlying deficit refers to General Government deficit excluding exceptional receipts and expenditures associated with the banking crisis. The unadjusted deficit peaked in 2010 at -32.1 per cent of GDP due to banking transactions amounting to 21.3 per cent of GDP. By end-2015 the underlying deficit was 1.0 per cent of GDP.
[4] See http://www.budget.gov.ie/RecoveryPlan.aspx and http://www.centralbank.ie/publicinformation/Documents/EU%20IMF%20Programme_FAQ%20_for%20website%20Mon%2031_FINAL.pdf

- €4.8 billion in bilateral loans from the UK, Sweden and Denmark.[5]

Table 1: Fiscal Consolidation in Ireland 2008-2015, € billions

	2008	2009	2010	2011	2012	2013	2014	2015
Revenue Measures	0.0	5.6	0.0	1.4	1.6	1.4	0.9	-0.4
Expenditure Adjustments	1.0	3.9	4.3	3.9	2.2	1.9	1.6	-0.6
Total Consolidation	1.0	9.4	4.3	5.3	3.8	3.5	2.5	-1.0
Total Consolidation, % of GDP	0.5	5.5	2.6	3.1	2.2	1.9	1.3	-0.4
Cumulative Consolidation	**1.0**	**10.4**	**14.7**	**20.0**	**23.8**	**27.3**	**29.8**	**28.8**

Source: NTMA 2014.

Throughout the consolidation period, there was considerable debate as to whether the adjustments were working to return the public finances to a sustainable position. It seems very likely that deficit and debt ratios would have rapidly escalated to unsustainable levels in the absence of consolidation. The Irish Fiscal Advisory Council (IFAC) consistently argued that the fiscal adjustments were necessary and not self-defeating and estimated that the debt ratio would have reached 158 per cent of GDP by 2013, with a deficit ratio of 20 per cent under a counterfactual scenario of no fiscal adjustment (see IFAC 2013).[6] Fitz Gerald (2013) estimated that the Budgets between 2009 and 2014 lowered the deficit by approximately 8 percentage points of GDP with a significant cost in terms of reduced economic output.[7]

Regardless of the debate on the merits of consolidation, Ireland was compelled into corrective action by the bond markets at a time when no official Euro Area back stop facilities were in place (e.g. the EFSF/ESM).[8,9] Kearney (2012) in a review of the fiscal stance over the period to 2012 noted:

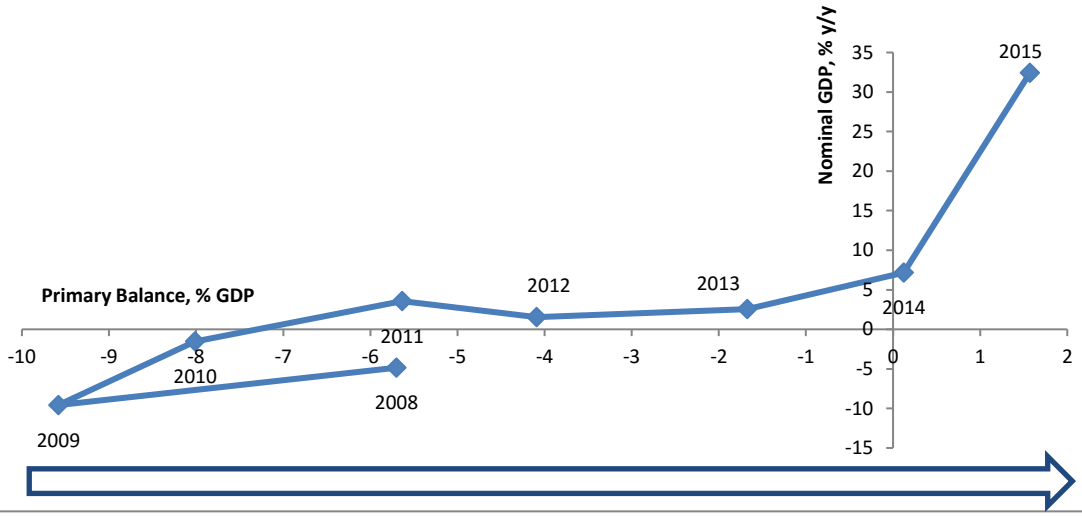
"Given the crisis that the Irish government faced in 2009 and 2010 with the precipitous collapse in its budget balance, the yawning pit of mounting bank losses all funded by the general government purse, and the sovereign's eventual inability to independently raise funding on financial markets, there was little choice but to commence an aggressive fiscal consolidation programme to bring the public finances under control."

Initially, the recovery was hampered by very weak growth – nominal GDP contracted by over 15 per cent between 2007 and 2010. However, the return to growth in 2011 and robust growth in 2014 (helped by strong economic fundamentals) facilitated a sharp improvement in the public finances. This is highlighted in Figure 2, where the primary balance (that is, the General Government balance less interest payments) is plotted against nominal GDP growth. Aside from consolidation and growth, a number of other factors including interest savings, data (GDP) revisions and unexpectedly strong

[5] See: http://www.efsf.europa.eu/attachments/faq_en.pdf.
[6] These estimates are probably an understatement as IFAC assumed that GDP growth and Irish creditworthiness were unaffected in the 'no consolidation' scenario.
[7] In terms of severity, the IMF noted that the fiscal adjustment in Ireland in 2009 was the largest on record in a study involving 15 advanced economies. It is important to note however that the actual impact of fiscal policy measures was at times offset by a weak price environment (Kearney (2012)).
[8] The average monthly yield on government 10 year bonds peaked in June 2011 at 11.7 per cent.
[9] This argument could also be logically applied to the measures undertaken to correct the banking system.

government receipts were also significant in driving much of the improvement. These are discussed below.

FIGURE 2: PRIMARY BALANCE AND GROWTH



3. Review of public finance outturns relative to projections, 2011-2015

To highlight the roles played by interest savings, data (GDP) revisions and revenue surprises, a detailed review of public finance outturn data relative to projections made throughout the adjustment period is undertaken. There are a number of factors that complicate this approach (see Box A). Firstly, economic data are subject to revision and while the vagaries of revisions to Ireland's macroeconomic data are well documented (see Casey and Smyth (2016)) less is known about public finance statistics. Secondly, there were a number of unforeseen events, normal forecasting and measurement errors, as well as methodological changes (principally the switchover to ESA 2010) that arose over the adjustment period that cloud retrospective comparisons.

(i) The Switch from ESA95 to ESA2010

In September 2014, a new national accounts framework came into effect with the switch to ESA 2010 (European System of Accounts) from the older framework (ESA95). This resulted in significant changes to macroeconomic and fiscal aggregates – principally an upward shift in nominal GDP (thereby automatically lowering deficit and debt ratios). There were a number of other, albeit not radical changes to the General Government accounts. These included:

- *Reclassification of Irish Bank Resolution Corporation (IBRC)*

Under ESA 2010, IBRC was reclassified within the General Government sector. This affected deficit and debt ratios from 2011 although the cumulative effects were not excessive. *Budget 2015* estimated that the reclassification added 0.2 and 0.4 percentage points of GDP to the deficit in 2011 and 2012, with an offsetting reduction of 0.7 per cent of GDP affecting 2013.

- *Pension funds and other changes*

There were also impacts arising from changes in the treatment of pension funds (improving the deficit by 0.5 per cent of GDP in 2014), interest swaps (adding close to 0.1 per cent of GDP to the deficit), tax

credits and EU VAT payments (from a net to a gross basis). [10] These latter effects (although deficit and debt neutral) impacted on both the level of government spending and receipts. For more details, see *Budget 2015, 'Box 2: Implementing New International Standards for National Accounts'*.

(ii) *Unforeseen events*

Aside from the change to ESA2010, a number of unforeseen transactions arose that were not included in projections made at the start of the Programme. This mainly involved some large banking related payments including expenditure of €5.4 billion in 2011 and the promissory note transaction. The latter had wide ranging impacts on the fiscal aggregates that included a reduction in interest payments by close to €1 billion.

These issues complicate the assessment of the adjustment period to 2015. To proceed, a 3-pronged approach is followed. First, government spending and revenue outturns (on a general government basis) are reviewed relative to projections made at the start of the Programme. The latter is proxied throughout as forecasts contained within the 2011 Stability Programme Update (*SPU 2011*) – the fullest set of domestic projections available at the time of the Programme. Second, (and in order to account for some of the data related issues), fiscal aggregates are examined on a sequential basis by focusing on year-ahead Budget day projections relative to outturns over the same period. Third, projections for Exchequer aggregates (principally day-to-day spending and receipts) are examined as a cross-check as these data are less prone to some of the data related issues that impact on general government series.

All three approaches highlight the role played by interest savings, data revisions and unexpectedly strong revenues in facilitating the improvement in the public finances. The estimates that follow are not meant to be definitive but rather are designed to help readers to decipher movements in key economic aggregates during a crucial period in Ireland's economic history.

(a) Programme projections relative to outturns (2011 to 2015)

The main fiscal projections relative to outturns are summarised in Table 2. Projections are taken from *SPU 2011*. For outturns, ESA95 data are taken up to 2013 with data extrapolated forward for 2014 and 2015 based on underlying trends in ESA2010 aggregates. Throughout the period, exceptional banking related transactions are removed as these were not included in the *SPU 2011* outlook.

The General Government deficit outperformed relative to projections made at the start of the Programme by close to €1.0 billion per annum on average. This was in spite of the fact that primary spending consistently exceeded projections by €2.7 billion per annum on average.[11] This was made possible by a combination of stronger than expected revenues and much lower than anticipated interest payments. On average, the latter were €2.7 billion lower per annum than the levels envisaged back in 2011 (helped by the promissory note transaction) thereby offsetting higher than anticipated levels of primary spending.

[10] In 2012 for example, methodological changes resulted in a level shift in General Government expenditures and revenues following the inclusion of imputed output of local authority house rentals. This added approximately €1 billion to receipts and expenditures.
[11] Once again caution is needed with these data due to methodological changes, although every effort has been made to ensure that data are comparable.

Table 2: Fiscal outturns relative to projections during the Programme

€ billions	2011	2012	2013	2014	2015
General Government Balance					
Projection	-15.6	-13.8	-12.2	-8.2	-4.9
Outturn	-14.9	-13.3	-11.5	-8.2	-2.0
Difference	**0.7**	**0.6**	**0.7**	**0.0**	**2.9**
Expenditure					
Projection	71.0	70.3	71.0	70.0	69.1
Outturn	70.8	69.8	70.4	71.6	69.9
Difference	**-0.3**	**-0.5**	**-0.6**	**1.5**	**0.8**
Primary Expenditure					
Projection	65.1	62.8	60.8	59.0	57.7
Outturn	65.4	63.7	62.7	64.1	63.2
Difference	**0.4**	**1.0**	**1.9**	**5.0**	**5.4**
Interest Expenditure					
Projection	5.9	7.6	10.2	11.0	11.3
Outturn	5.3	6.1	7.7	7.5	6.7
Difference	**-0.6**	**-1.4**	**-2.5**	**-3.5**	**-4.6**
Revenue					
Projection	55.4	56.5	58.8	61.8	64.1
Outturn	55.9	56.6	58.9	63.4	67.9
Difference	**0.4**	**0.1**	**0.1**	**1.5**	**3.7**

Source: Internal calculations based on SPU 2011 projections and CSO outturn data.
Note: Data is on an ESA95 basis to 2013 and extrapolated forward to reflect trends in ESA2010 data in 2014 and 2015. Primary expenditure excludes banking payments. Numbers may not sum due to rounding.

Box A: General Government forecast vintages – 2013 -2015: data revisions

In Table A1, successive forecast vintages of government revenues and expenditures are shown for the years 2013 to 2015.[12] The Table shows how forecasts were revised with the sources of revision split between classification (methodological) effects, new data (such as revised forecasts based on new information) and other effects.

Over the period, forecasts were revised substantially. However much of this reflected accounting changes – principally the switchover to ESA 2010 in *Budget 2015*. This complicates any retrospective analysis of this period. Taking forecasts for 2014 as an example, initially *Budget 2014* projected that receipts would amount to €60.9 billion (on an ESA95 basis). This outlook was revised in subsequent publications to reflect new data and information. There were particularly large classification changes associated with ESA 2010 that added approximately €1 billion to the level of government revenue (and expenditures) – much of this reflected a change in the accounting treatment of certain items from a net to a gross basis.[13] Other notable events over this period included the reduction in interest costs arising from the promissory note transaction, the reclassification of IBRC, Irish Water and changes to the treatment of various levies.

Table A1: Selected Vintages of General Government Projections 2013-2015

	Date	Method	Forecast €bn	Classification	Data	Other	Revision
Revenue in 2013							
Budget 2013	Oct 2012	esa 95	57.6				
SPU 2013	Apr 2013	esa 95	58.7	0.4	0.7		1.1
Budget 2014	Oct 2013	esa 95	58.5		-0.2		-0.2
Expenditure in 2013							
Budget 2013	Oct 2012	esa 95	70.4				
SPU 2013	Apr 2013	esa 95	71.3	0.7	-0.9	1.2	0.9
Budget 2014	Oct 2013	esa 95	70.7	0.4	-1.1		-0.6
Revenue in 2014							
Budget 2014	Oct 2013	esa 95	60.9				
SPU 2014	Apr 2014	esa 95	60.9	0.0	0.0	0.0	0.0
Budget 2015	Oct 2014	esa 10	63.8	1.1	1.2	0.6	2.9
Expenditure in 2014							
Budget 2014	Oct 2013	esa 95	69.2				
SPU 2014	Apr 2014	esa 95	69.0		-0.1	0.0	-0.2
Budget 2015	Oct 2014	esa 10	70.7	1.2	-0.5	1.1	1.7
Revenue in 2015							
Budget 2015	Oct 2014	esa 10	65.7				
SPU 2015	Apr 2015	esa 10	68.0	0.8	1.1	0.3	2.3
Budget 2016	Oct 2015	esa 10	69.4	-0.1	1.6	0.0	1.4
Expenditure in 2015							
Budget 2015	Oct 2014	esa 10	71.0				

[12] A relatively recent and welcome innovation by the Department of Finance involves showing vintages of forecasts for a given year between the Budget and the Stability Programme publications. This notes the main differences between revenue and expenditure categories in a given year.

[13] For more details, see Budget 2015 Table A2.2.3.

SPU 2015	Apr 2015	esa 10	72.6	1.5	0.1	0.0	1.6
Budget 2016	Oct 2015	esa 10	73.8	0.1	1.1	0.1	1.2

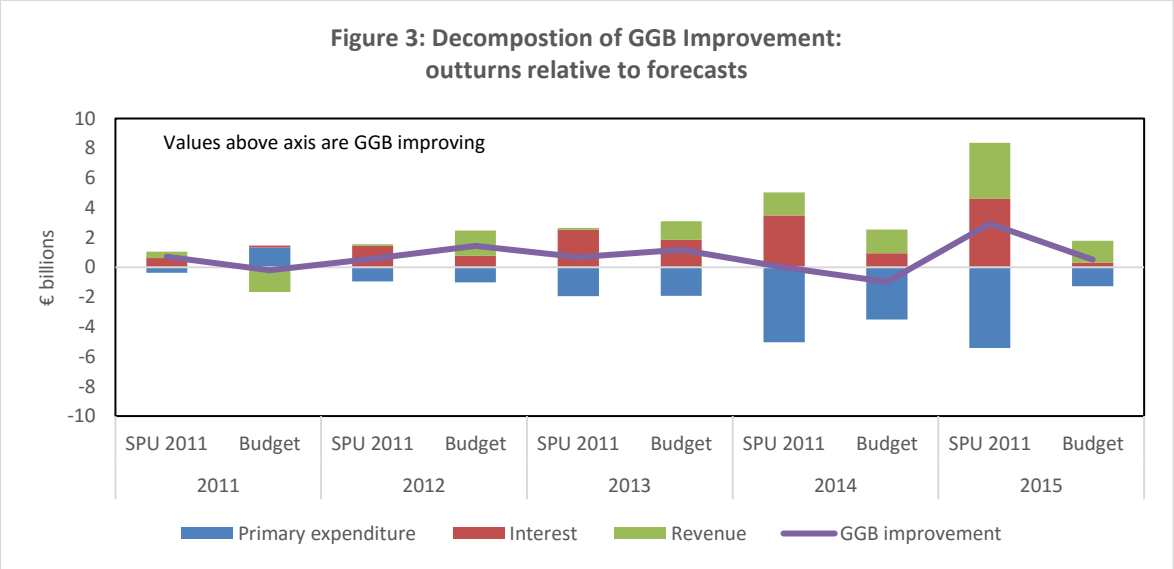
Notes: Numbers may not sum due to rounding.

(b) Year-ahead projections relative to outturns (2011 to 2015)

It is also informative to evaluate how forecasts evolved over the adjustment period by examining year-ahead projections from successive Budgets.[14] A summary of the results is shown In Table 3 both for the full period (*SPU 2011*) and for year-ahead projections. The results are similar although the magnitudes are smaller for year-ahead forecasts. For the latter, the General Government balance surprised on the upside by €400 million per annum on average. This was made possible by the combination of sizable savings from interest costs and revenues. These findings are summarised in Figure 3.

Table 3: Multi- and year-ahead fiscal forecasts: outturns relative to projections, 2011 to 2015

€ billions, annual averages	Multi-year Ahead Projections (SPU 2011)	Year Ahead projections (Successive Budgets)
General Government Balance	1.0	0.4
Primary Expenditure	2.7	1.3
Interest Expenditure	-2.5	-0.8
Revenue	1.2	0.9



(c) Exchequer projections relative to outturns, 2011-2015

Given the intricacies of general government data, Exchequer aggregates were also assessed as a cross-check. While general government series are more comprehensive and comparable internationally, the Exchequer data in Ireland is less affected by some of the data related issues that impact on the

[14] For outturns, the first published estimate is again taken. The CSO's Government Finance Statistics (GFS) releases are used up to 2013 and adjusted thereafter based on underlying trends in ESA2010 aggregates. Exceptional banking related costs are excluded with the General Government balance derived as the difference between revenues and expenditures.

National Accounts. Furthermore, the Exchequer accounts for the vast bulk of the General Government sector. Within the Exchequer, the Current Budget Balance (current receipts less expenditures), which reflects the day-to-day running costs of the State, is the main aggregate of interest here.

The same approach as before is replicated. In Figure 4, the outturn for the Current Budget Balance relative to projections made in successive Budgets is shown, with detailed results reported in Annex A (including projections from *SPU 2011*). This analysis again highlights the role played by revenues and interest costs (included in the category 'non-voted current spending') in facilitating higher levels of expenditure.[15]

For the case of year-ahead projections, taxes consistently over performed - the annual excess averaged €1.0 billion. This figure was however heavily affected by the exceptional outturn for corporation tax receipts in 2015.[16] Non-tax revenues outturns also consistently exceeded projections with an average annual excess of €0.6 billion. These receipts incorporate a broad range of items, such as interest and dividend income as well as surplus income from the Central Bank (much of which related to the provision of ELA and more recently monies on the Floating Rate Notes (FRNs))[17]. These income sources while growing in importance consistently surprised on the upside (see Hickey and Smyth (2015))[18].

On the expenditure side, (voted) current spending exceeded forecasts by close to €0.5 billion per annum on average. This appears to have been mainly driven by overruns in healthcare – expenditure in health exceeded projections in 3 of the 5 years - with an average excess of €0.5 billion (Figure 5). These overruns necessitated upward revisions to expenditure ceilings (IFAC, 2016).

[15] There was a large non-voted current expenditure payment in 2013 relating to the liquidation of IBRC.

[16] Corporate taxes increased by 50 per cent in 2015 to reach €6.9 billion (15 per cent of the tax take), and were also 50 per cent ahead of government forecasts. This reflected in part a broad based recovery in trading conditions and a particularly strong performance by larger foreign-owned multinationals (see Tancred, P., (2016)). However, much of the excess in corporate taxes is hard to explain (see Box D, Quarterly Bulletin 1, Central Bank of Ireland 2016 and IFAC 2015)).

[17] Most of the gains made to date on the sale of the FRNs have been remitted back to the State through the Central Bank surplus. In 2014, for example the CBI sold €500 million of the FRNs realising gains of €180 million and in 2015, the CBI disposed of a further €2 billion realising gains of €0.8 billion. The CBI transfers 80 per cent of its surplus income to the Exchequer.

[18] For a discussion on non-tax revenues see: *The Financial Crisis in Ireland and Government Revenues*, by Hickey, R., and Smyth. D., Central Bank of Ireland, Quarterly Bulletin 4, 2015.

FIGURE 4: DECOMPOSITION OF CURRENT BUDGET BALANCE IMPROVEMENT - OUTTURN RELATIVE TO FORECAST

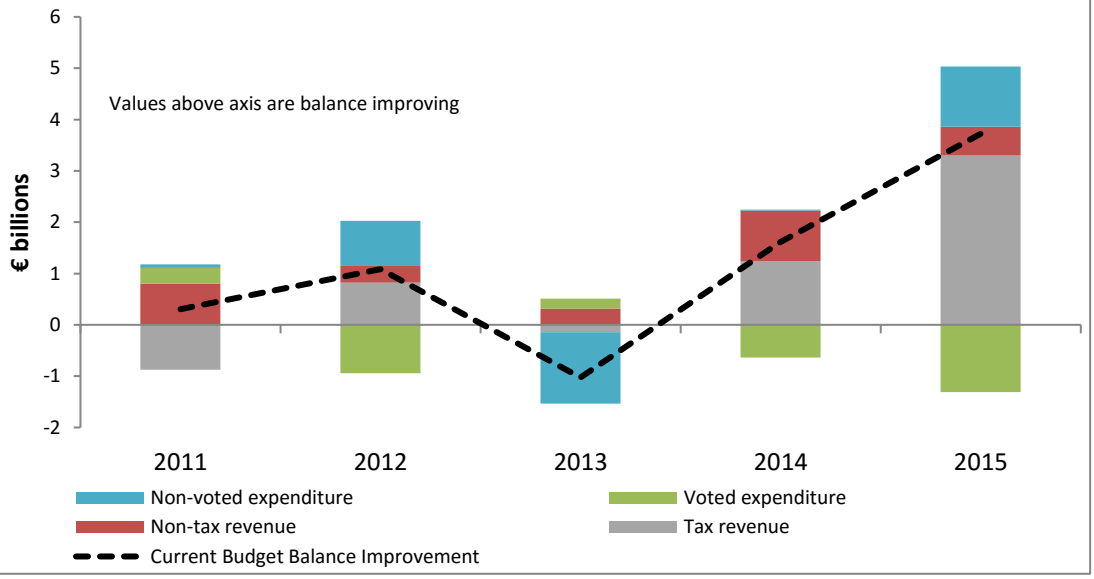
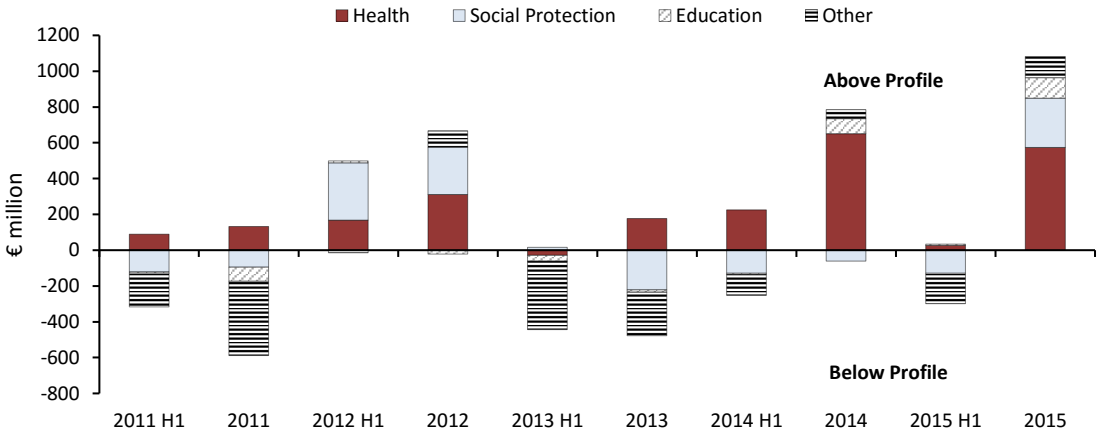


FIGURE 5: CUMULTIVE OVERRUNS IN CURRENT EXPENDITURE: MID-YEAR VS END-YEAR



Source: Department of Finance.

4. Interest expenditures and GDP revisions

4.1 Interest costs

Lower than expected interest costs were clearly a key factor behind the improvement in the public finances. This facilitated the exit from both the Programme and the EDP while also freeing up resources for other uses, such as higher levels of primary spending. By end-2015, on a general government basis, interest related costs were €4.6 billion (averaging 1.7 per cent of GDP), lower than was envisaged at the start of the Programme with particularly large savings accruing from 2013 (Figure

6).[19] These savings manifested themselves most clearly in a much lower average interest rate on government debt (Figure 7) – defined as interest payments in a given year relative to the stock of debt in the previous year. Over the full period, the average interest rate was 140 basis points below the rate that was envisaged at the start of the Programme.

FIGURE 6: INTEREST EXPENDITURE: OUTTURN VS FORECASTS

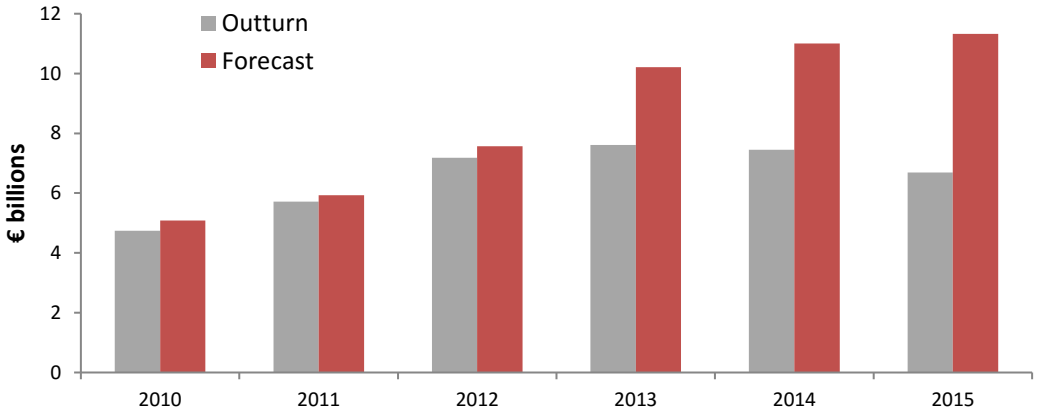
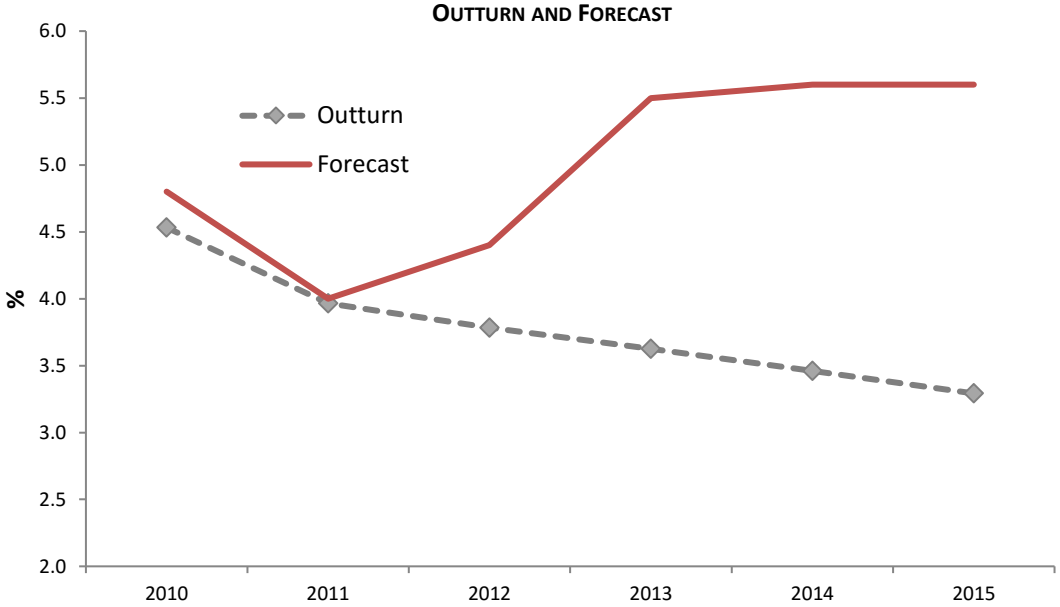


FIGURE 7: AVERAGE INTEREST RATE ON GOVERNMENT DEBT OUTTURN AND FORECAST



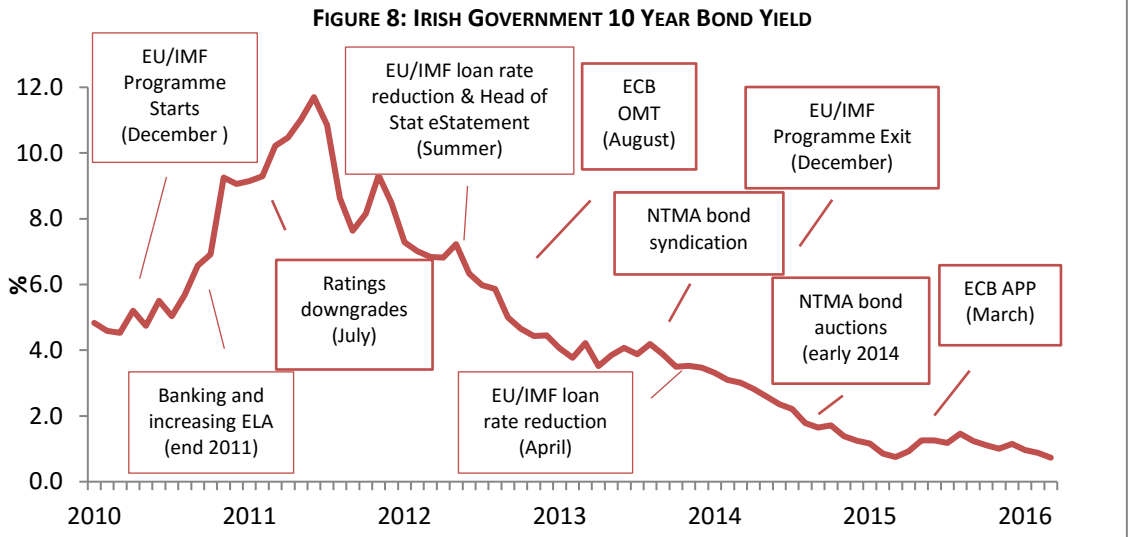
There are a whole host of factors that determine interest rates and costs. During the crisis period, two key and closely interlinked developments stand out – changing market sentiment towards Ireland and debt restructuring (see also Whelan (2013), op. cit.).

(a) Market sentiment

[19] Following the promissory note transaction in 2013 interest costs were revised down by €1 billion.

In Figure 8, 10-year Irish Government bond yields are plotted alongside some key developments highlighted by the NTMA during this period.[20] Yields peaked in mid-2011 at 11.7 per cent at a time when debt sustainability concerns were paramount before declining steadily.[21] Identifying the reasons behind movements in market sentiment is fraught with difficulty. A recent paper by Purdue and White (2014) examined movements in Irish sovereign yields from 2003 to 2014. They found that fundamental factors (which include fiscal and macroeconomic aggregates, government exposures and credit ratings) were all important in explaining movements in yields while also highlighting the role played by the ECB via the OMT programme.

FIGURE 8: IRISH GOVERNMENT 10 YEAR BOND YIELD



Most of the major downward movements in Irish Government bond yields occurred between mid-2011 and end-2012 – yields fell by over 600 basis points. Building on the work of the NTMA, it is possible to highlight a number of specific events (some of which occurred simultaneously) that coincided with the marked fall in yields (Table 4). These developments were important in convincing the markets of Ireland's creditworthiness (see IFAC 2012), following the series of "bad" news items that preceded entry into the Programme. These are split here into Irish and non-Irish factors. The latter includes collective Euro Area responses and ECB monetary policy actions (OMT and other non-standard measures).

[20] Successive NTMA publications identified a number of the factors listed here as reasons behind bond yield movements.
[21] The yields here refer to monthly data - on a daily basis, yields peaked at over 14 per cent during this period.

Table 4: Bond Markets – Key Developments in Irish Bond Yields (mid 2011 – mid 2016)

Time Period	Change in Yields (basis points)	Key Events	Irish Specific (y/n)
Second Half of 2011	-322	Troika compliance	y
		Improved Troika loan terms	n
		Banking recapitalisation	y
		Investor confidence	y
2012	-284	Troika compliance	y
		Fiscal Compact Treaty	y
		EA Coordinated Action (OMT)	n
		Promissory note transaction	y
		NTMA debt management	y
2013	-59	Improved Troika loan terms	n
		Troika compliance and exit	y
		NTMA debt management	y
		Rating upgrades	y
		ECB non-standard measures	n
2014	-206	Return to robust growth	y
		Improved debt profile	y
		Rating upgrades	y
2015 - mid 2016	-52	ECB non-standard measures	n
		Robust growth	y

To disentangle the effects of Irish specific effects from wider Euro Area developments, Irish yields were examined in detail relative to other stressed Euro Area sovereigns (Figure 9). From the Figure there appear to be certain periods in which Irish yields decoupled from the Euro Area – notably in and around 2012. This can be tested more formally using 'Principal Component Analysis'. Covering the period 2006 to 2016, this analysis shows that Irish yields were more closely aligned (correlated) with developments in Spain, Portugal and Italy (as opposed to the Euro Area core of Germany, Netherlands, Austria, etc.).[22] Given this, principal components for the former were calculated (Table 5), with the first component (PC1) accounting for 89 per cent of the total variance in bond yields. Cumulatively the first 2 components accounted for the vast majority (just over 96 per cent) of the variation in yields in the 4 countries.

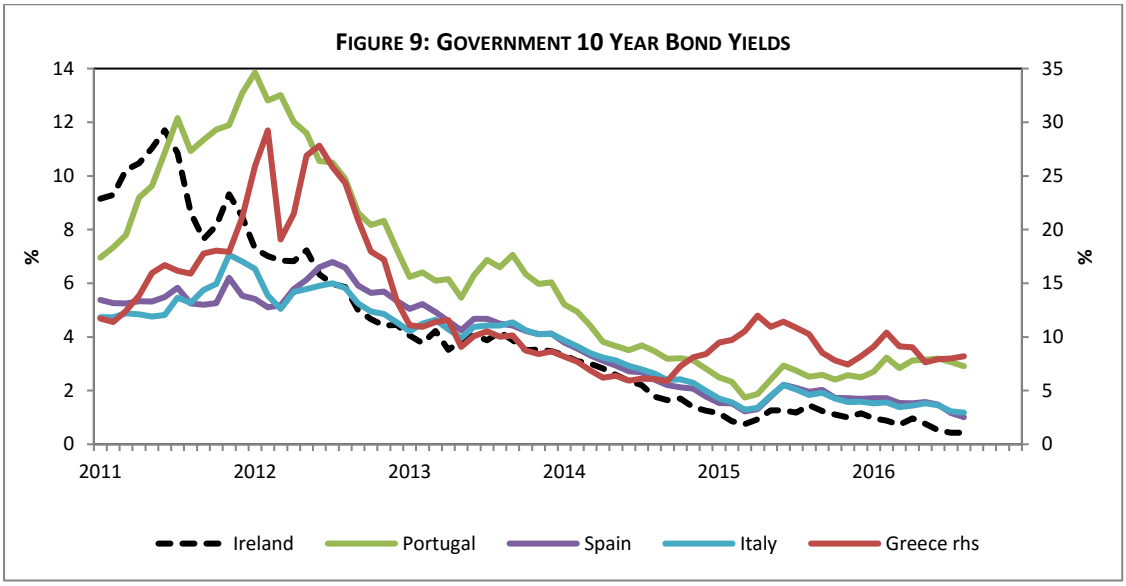
[22] The average correlation with the Euro Area was 0.60 over the period. For Spain, Italy and Portugal the respective correlations were 0.84, 0.82 and 0.79.

Table 5: Principal Component Analysis: Euro Area Bond Yields: 10 year bonds, 2006-2016

Eigenvalues: (Sum = 4, Average =1)				
Number	**Value**	**Difference**	**Proportion**	**Cumulative Proportion**
1	3.555	3.266	0.889	0.889
2	0.289	0.140	0.072	0.961
3	0.149	0.142	0.037	0.998
4	0.007	---	0.002	1.000
Eigenvectors (loadings)	**PC 1**	**PC2**	**PC3**	**PC4**
Ireland	0.485	0.605	0.630	0.046
Italy	0.508	-0.525	0.064	0.680
Portugal	0.514	-0.441	0.081	-0.731
Spain	0.493	0.406	-0.770	0.017

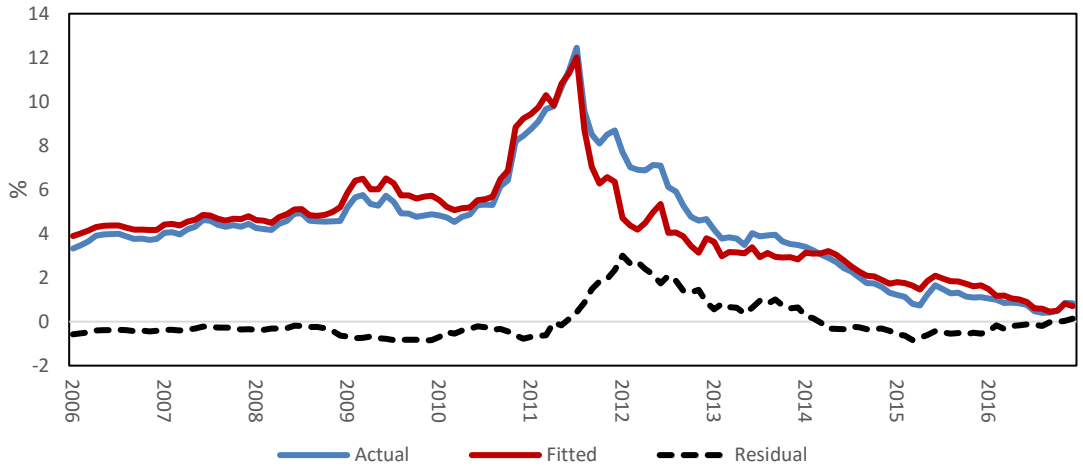
Source: Internal calculations.

The first principal component (PC1) can be viewed as a type of common bond market index. Irish yields were regressed on this index to test whether Irish yields diverged from the market. A graph of fitted against actual values from the regression reveals a tangible dis-improvement in fit between mid-2011 and throughout 2012 (Figure 10).[23]



[23] The graph comes from a regression of Irish monthly bond yields on the constructed (Principal Component) market index over the period 2006 to 2016.

Figure 10: Regression of Irish yields on a constructed bond market index: 2006-2016



These findings lend support to the earlier assertion that "Irish specific" events were integral in driving down yields, with three distinctive phases standing out:

(i) Summer of 2011 – Irish yields declined by over 400 basis points at a time when yields in the periphery were static. This coincided with the changed terms on Troika loans, an extensive recapitalisation of the banking system and an expectation of a return to growth following a strong start to the EU/IMF Programme.

(ii) End 2011/early 2012 – Irish yields fell by over 200 basis points. This coincided with increasing signs of a turnaround in Ireland's fortunes in relation to both the banking system and macroeconomic and fiscal fundamentals. For example, the Autumn 2011 Programme review by the European Commission (2012b) pointed to "…a stronger than expected performance in the first half of 2011" as well as strong programme implementation.[24]

(iii) Summer of 2012 – Irish yields fell by 125 basis points. This coincided with the passing of the Fiscal Compact Treaty and the Euro Area Summit. The latter included a pledge to break the sovereign-bank loop. Given the Government's exposure to the banking system (including sizable contingent liabilities at the time), this announcement was viewed favourably from an Irish perspective.

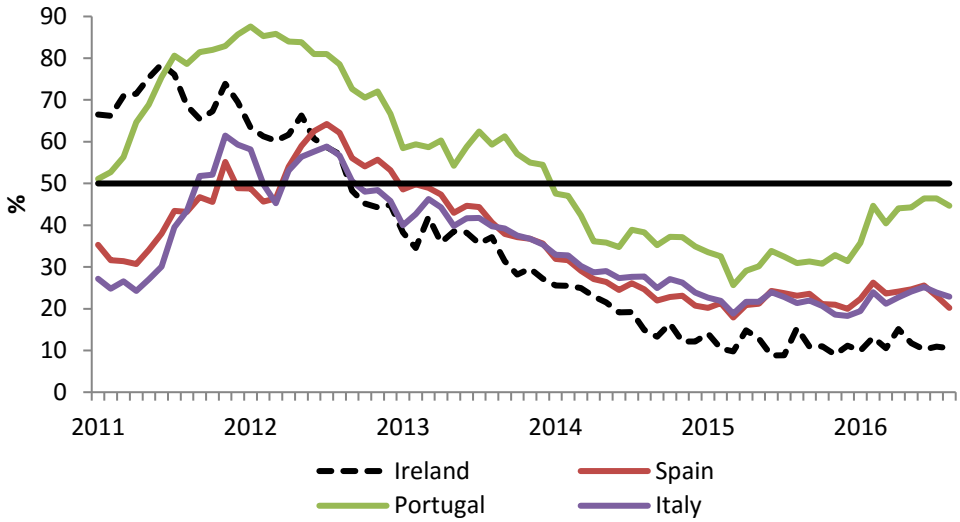
More generally, Ireland's track record in successfully adhering to the terms of the Programme and in meeting (and exceeding) fiscal targets were clearly important developments. There were also a series of other positive news items that helped move Ireland towards a "good equilibrium".[25] This included the promissory note transaction and a more coordinated Euro Area response. Initially this was led by the setting up of the European Financial Stability Facility (EFSF) and the European Stability Mechanism

[24] There were also signs of a return to positive growth with successive *Quarterly National Accounts* releases during 2011. This followed from estimated growth rates (at the time) of -7.0 per cent in 2009 and -0.4 per cent in 2010.
[25] This is the opposite of the "bad equilibrium" scenario where doubts about a sovereigns' creditworthiness drive up bond yields and interest costs thereby worsening underlying debt dynamics. [25] Media reports in 2012 speculated that Franklin Templeton had become the largest holders of Irish Government debt outside of the EU/IMF Troika, with positions of up to €4 billion. See for example: http://www.irishexaminer.com/business/franklin-templeton-investment-puts-government-debt-in-spotlight-206349.html.

(ESM). However, more recently it includes the measures taken by the ECB including the announcement of OMT (in the third quarter of 2012), asset purchase programmes (APP) beginning in 2014 and more accommodative (non-standard) measures since 2015.[26, 27] OMT was highlighted by White and Purdue (*op.cit*) as an important factor in driving down yields although they felt that the effects were less significant for Ireland.[28,]

All of these developments enabled Ireland to move into much safer territory from a debt-sustainability perspective (Figure 11) – see also IFAC (2013). Overall it would seem appropriate to give at least an equal weighting to Irish specific events relative to broader Euro Area developments in driving down yields over the adjustment period.

FIGURE 11: IMPLIED PROBABILITY OF DEFAULT - 10 YEAR GOVERNMENT BONDS



(b) Debt Restructuring

Aside from interest rates, the adjustment period was also characterised by significant changes in Irish debt maturities. In total, the average maturity on government debt (programme and non-programme loans) increased to more than 12 years at end-2015 from 7 years at end-2011 (Figure 12). This reflected a combination of changes in the maturities on official programme loans, promissory note restructuring and debt management.

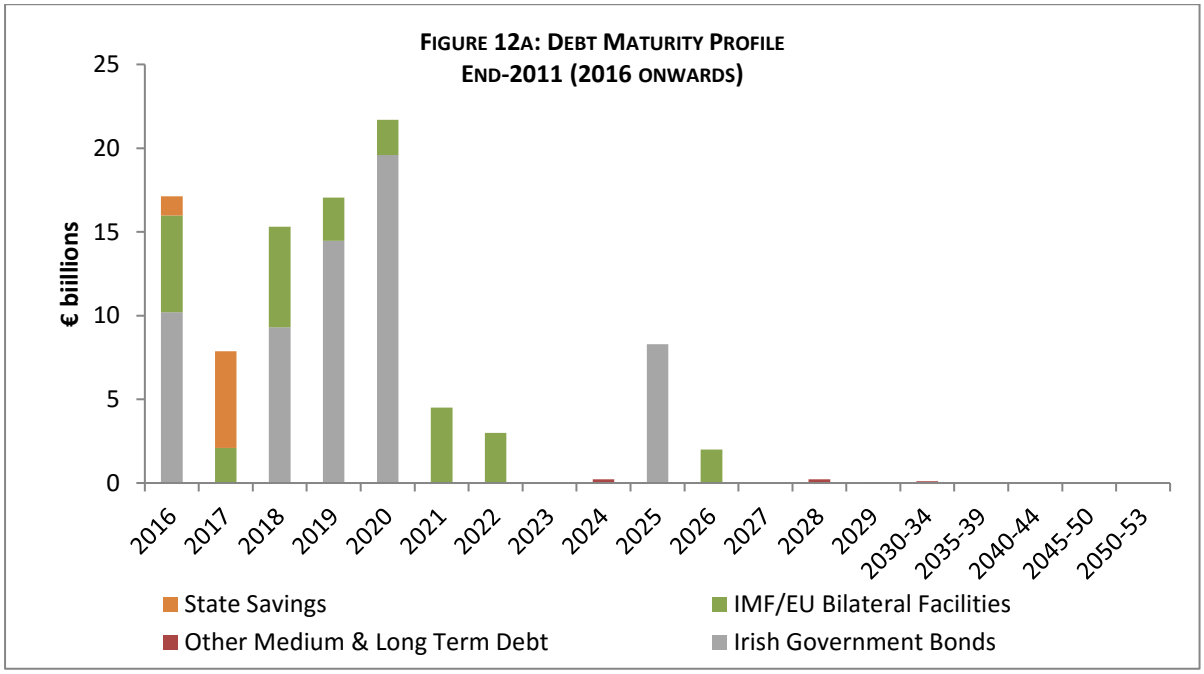
As mentioned in Section 2, Ireland received €67.5 billion in external support under the terms of the Programme. These loans were initially provided with an average maturity of 7.5 years (and an interest rate of 5.82 per cent.)[29] However, from 2011 onwards there were a number of changes to these terms (including a 7 year extension in 2013 and successive cuts to the loan margins) following a series of collective EU agreements.[30, 31] By early 2014, the estimated interest rate had fallen to 3.40 per cent. The Government was also able to refinance a substantial portion of IMF related debt by repaying loans

[26] See: http://www.ecb.int/press/pressconf/2012/html/is120802.en.html.
[27] See: https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html
[28] Yields fell by close to 325 basis points between early-2012 and Spring 2013.
[29] See NTMA (2010).
[30] The 2.925 per cent margin on EFSM loans was removed and the average maturity on loans to Ireland was extended from 7.5 to 12.5 years (see NTMA 2012). The 2.47 per cent margin on EFSF loans was also removed.
[31] In June 2013, maturity extensions to EFSF loans amounting to 7 years were agreed bringing their average weighted maturity to 20.7 years (see NTMA and EFSF for more details). EFSM loans have a weighted average life of 12.3 years but are subject to a 7-year extension. This brings their weighted-average maturity to 19.5 years from 12.5. These loans are not expected to be refinanced before 2027.

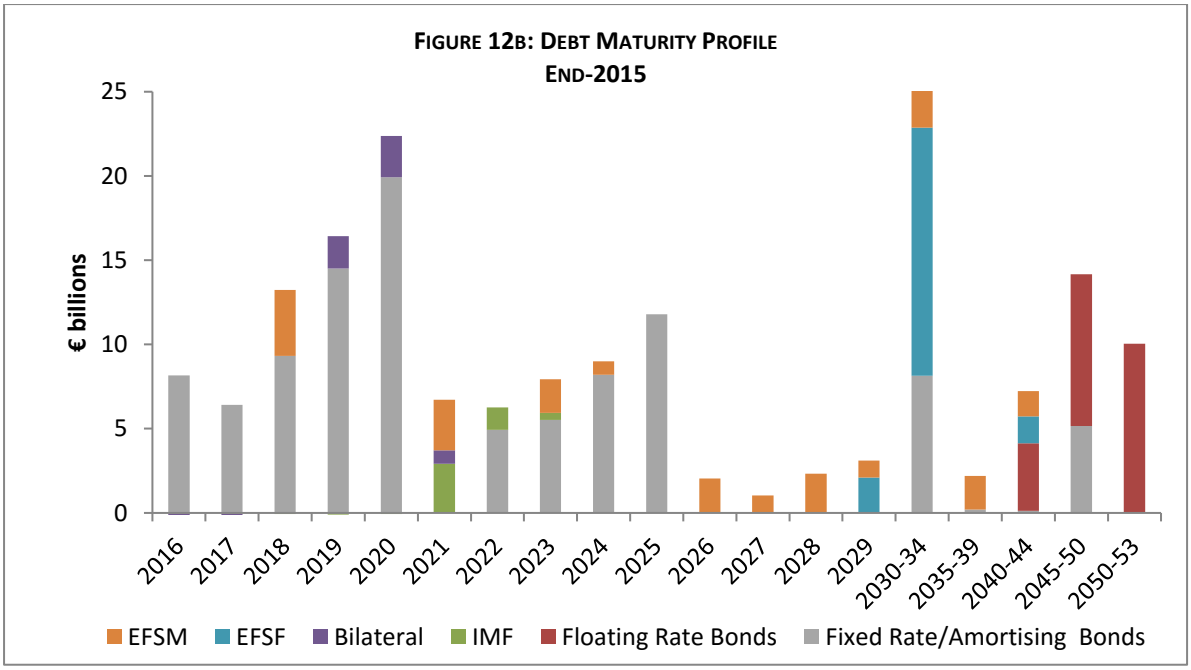
earlier than scheduled helped by the marked fall in bond yields. Approximately 80 per cent (€18 billion) of these loans had been repaid by early 2016 generating significant savings (in excess of €1.5 billion) over the original life-time of the loans.

The Government was also able to extend the maturity on non-programme related loans. This included the decision in 2013 to replace the promissory notes (introduced in 2010 to the value of €31 billion) with a portfolio of long-term floating rate bonds. This greatly eased the State's annual funding requirements and was estimated to have generated annual interest savings of close to €1 billion (see Department of Finance, 2013).[32] These savings came about as the maturity profile, interest rate and repayment structure differed markedly under the new arrangements.[33] In particular, the weighted average maturity of the new floating rate notes (FRNs) at 34-35 years was significantly in excess of the terms under the promissory notes (which required annual payments of close to €3 billion over a 7-8 year period).[34] Other gains associated with the transaction were more difficult to quantify, principally, the greater degree of certainty that arose following the decision to replace the promissory notes.

Aside from these transactions, the NTMA were also active in extending the average maturity on other longer-term debt through a range of transactions. At end-2015, these "other" loans (fixed rate and amortising bonds) had an average maturity of 7.5 years up from 6.8 years in 2011.[35]



[32] For a detailed account on promissory notes see Barnes and Smyth (2013), *The Government's Balance Sheet after the Crisis: A Comprehensive Perspective*, Irish Fiscal Advisory Council.
[33] The new arrangements did however generate a once-off upfront cost of €1.1 billion through the Eligible Liabilities Guarantee (ELG) scheme.
[34] For more details see kildarestreet.com.
[35] Figures exclude the floating rate notes acquired with the promissory note transaction. Including these increases the average maturity to 12 years.



4.2 Data revisions (GDP)

Prior to the release of the *National Income and Expenditure Accounts* (NIE) for 2015, the economy was estimated to have grown by 3.4 per cent per annum between 2011 and 2015. This compares with a projected growth rate of 2.5 per cent *in SPU 2011*.[36] However, a series of methodological changes and revisions, mostly notably in *NIE 2015* helped to substantially increase the level of nominal GDP, thereby facilitating reductions in headline deficit and debt ratios.

First, in 2014, new international standards - ESA 2010 - resulted in a number of revisions to macroeconomic data, principally GDP.[37] Initially, the level of nominal GDP was revised upwards by about 8 per cent (in *NIE 2014*), mainly on account of changes to the treatment of research and development (R&D) expenditure. This helped to automatically lower the General Government deficit ratio by close to 0.5 per cent of GDP per annum.

Second, in *NIE 2015*, a series of exceptional revisions resulted in the level of GDP being revised up by close to one-fifth to €256 billion. This meant that GDP by end-2015 was 40 per cent higher than that projected at the start of the Programme. The stronger denominator once again helped to improve deficit and debt dynamics with the former lowered by 0.7 percentage points on average over the adjustment period (Table 5).

[36] Using the very latest NIE data, the average growth rate is 6.9 per cent.
[37] For more details see CSO (2014), *Implementing New International Standards for National Accounts and Balance of Payments Statistics* and IMF (2015), *Box 1. Recent Changes to National Accounts and Balance of Payments Statistics*.

Table 5: GDP Revisions and the General Government Balance

Aggregate	Units	Source	2011	2012	2013	2014	2015
GDP_SPU 2011 (ESA 95)	**€bn**	**SPU**	**156**	**161**	**167**	**175**	**183**
GDP_ESA 95	**€bn**	**CSO**	**163**	**164**	**164**		
GDP_ESA 10	**€bn**	**CSO**	**173**	**176**	**180**	**193**	**256**
Change in GDP relative to ESA 95	%		*6.4*	*7.2*	*9.9*		
Change in GDP relative to SPU 2011	%		*10.9*	*9.2*	*7.7*	*10.6*	*40.0*
GGB Outturn	**€bn**	**CSO**	**-22**	**-14**	**-10**	**-7**	**-5**
GGB Ratio using SPU 2011 GDP	% GDP		-14.0	-8.7	-6.1	-4.1	-2.6
GGB Ratio using GDP outturn	% GDP		-12.6	-8.0	-5.7	-3.7	-1.9
Savings	**% GDP**		**1.4**	**0.7**	**0.4**	**0.4**	**0.7**

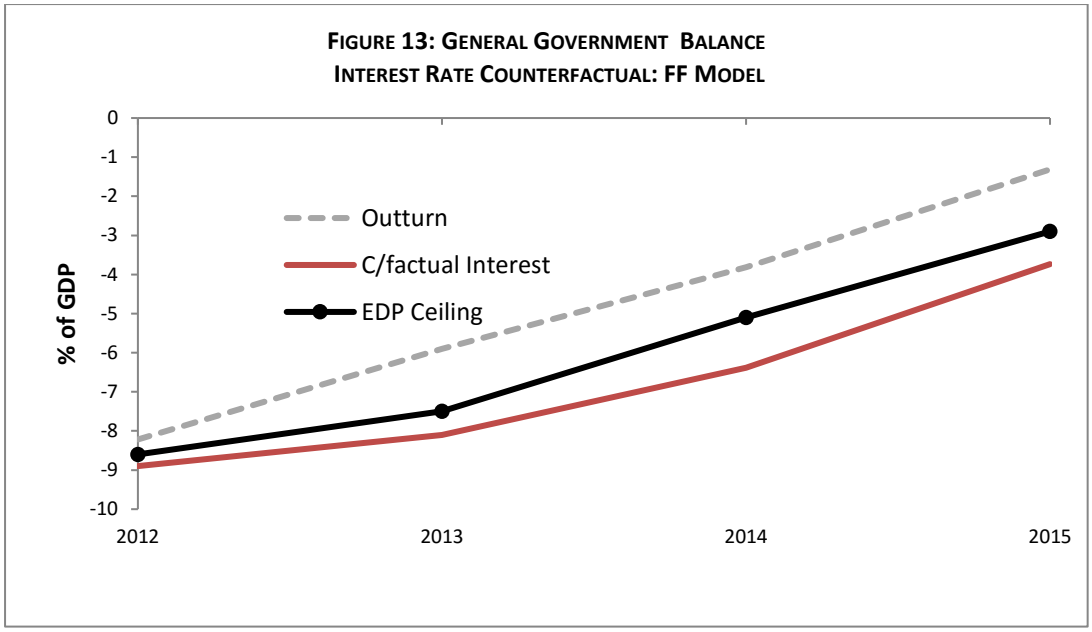
Source: Internal calculations.

5. Counterfactuals

This Section makes use of IFAC's Fiscal Feedback model (for details see IFAC, 2012) to examine alternative paths for interest rates, GDP and expenditure given the savings identified above. This model enables Government projections (as set out in annual Budgets or Stability Programme Updates) to be replicated given certain assumptions on growth and discretionary fiscal adjustments (i.e. consolidation plans). It also allows for the two-way relationship between GDP and the budget balance through automatic stabiliser and multiplier channels. The model is first constructed so as to replicate the outturn for the public finances as set out in *Budget 2017* – this is the baseline for the simulations. Alternative interest rate, GDP and expenditure assumptions were then imposed to estimate their effect on the General Government balance. The counterfactuals are not meant to provide definitive estimates but rather serve to highlight the impact of alternative macroeconomic and fiscal paths.

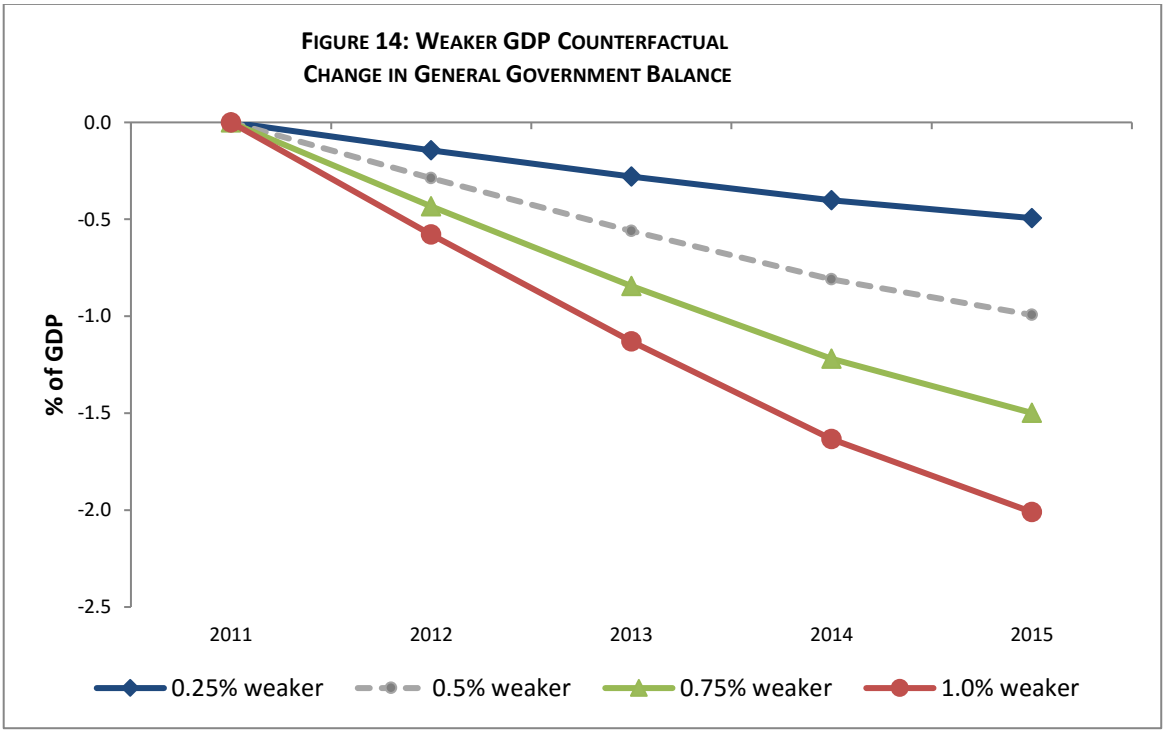
(a) Higher interest payments

The Fiscal Feedback's model was first used to simulate the effects of higher yields throughout the adjustment period. This was done by imposing a higher average interest rate over the years 2011 to 2015, so that the average rate corresponded to what was assumed at the start of the Programme. This resulted in interest rates being 140 basis points higher per annum on average. Under this counterfactual, the EDP ceilings are breached in each of the years from 2012 (Figure 13). On average, the General Government deficit ratio is close to 2 percentage points higher per annum relative to the baseline. The model was then used to back-cast the amount of additional discretionary fiscal adjustments that would have been necessary to comply with the ceilings. On average, additional annual consolidation measures of close to €800 million would have been needed to comply with the EDP ceiling in 2015. This gives a sense of the savings that arose from lower interest costs.



(b) Weaker GDP growth

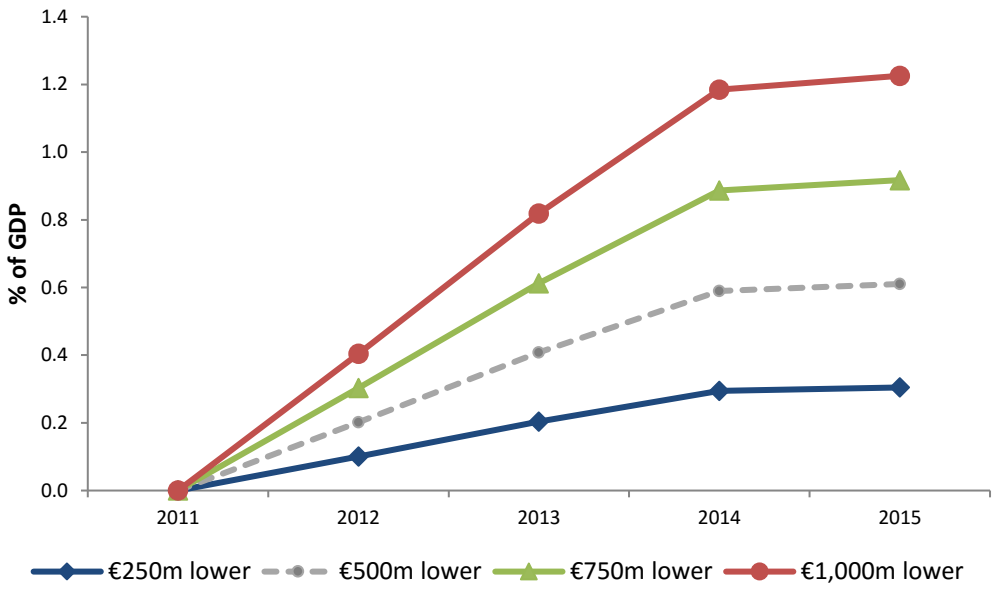
In this case, alternative lower paths for GDP growth are imposed on the model from 2012 to 2015 (Figure 14). This automatically raises the General Government deficit in each and every year through the automatic stabiliser channel inbuilt in the model. In the event that the growth rate was 0.5 per cent weaker per annum, the deficit by 2015 is a full percentage point higher than in the baseline and marginally below the EDP ceiling. This illustrates the sensitivity of the public finances to alternative growth paths. It also services to highlight the gains that arose from the upward revisions to GDP.



(c) Lower expenditure

In this counterfactual, alternative levels of fiscal consolidation were imposed in the Fiscal Feedbacks model from 2012 to 2015 to mimic the effects of lower spending. The estimated impacts on the General Government balance are shown in Figure 15 for a range of expenditure profiles. In the event that spending was €750 million lower per annum, the estimated deficit is a full percentage point better than in the baseline by 2014 – meaning compliance with the EDP ceiling a full year ahead of schedule.

FIGURE 15: LOWER EXPENDITURE COUNTERFACTUAL
CHANGE IN GENERAL GOVERNMENT BALANCE



6. Conclusion

This paper assessed public finances developments through the adjustment period from 2011 to 2015 focusing in particular on the roles played by interest costs and data (GDP) revisions in facilitating Ireland's exit from the EDP. These factors coupled with some surprises on the revenue side allowed higher levels of current primary spending and less fiscal consolidation than what otherwise might have been the case. The paper also highlighted some of the difficulties in retrospectively assessing public finance developments over a crucial period in Ireland's economic history. Given the nature of the economy, its susceptibly to shocks and the vagaries of Irish data it is important that periodic reviews are undertaken to try to decipher key trends and movements in economic aggregates.

Annex A: Exchequer Developments, 2011 to 2015

A summary of Exchequer outturns and projections is shown in Table A1 for projections over the full period, with year ahead projections reported in Table A2. The Current Budget Balance – the difference between day-to-day spending and receipts reflects the day-to-day running costs of government.

Table A1: Exchequer Projections (SPU 2011) and Outturns, € billions

	2011	2012	2013	2014	2015
Exchequer Balance					
Projection	**-18.2**	**-17.0**	**-13.4**	**-9.5**	**-8.3**
Outturn	**-24.9**	**-14.9**	**-11.5**	**-8.2**	**-0.1**
Difference	**-6.8**	**2.1**	**1.9**	**1.3**	**8.3**
Expenditure					
Projection	**57.2**	**57.3**	**55.9**	**54.6**	**55.2**
Outturn	**64.2**	**56.6**	**56.2**	**58.6**	**58.7**
Difference	**7.1**	**-0.7**	**0.3**	**4.0**	**3.5**
Voted Current Expenditure					
Projection	*41.7*	*39.7*	*37.8*	*36.1*	*36.1*
Outturn	*41.4*	*41.5*	*40.0*	*39.0*	*39.3*
Difference	*-0.3*	*1.8*	*2.2*	*3.0*	*3.3*
Non-voted Current Expenditure					
Projection	*7.2*	*9.8*	*10.6*	*11.4*	*12.0*
Outturn	*6.6*	*8.1*	*11.1*	*10.7*	*9.8*
Difference	*-0.6*	*-1.7*	*0.5*	*-0.7*	*-2.2*
Other Expenditure					
Projection	*8.2*	*7.9*	*7.5*	*7.1*	*7.1*
Outturn	*16.2*	*7.1*	*5.1*	*8.8*	*9.5*
Difference	*8.0*	*-0.8*	*-2.4*	*1.8*	*2.4*
Revenue					
Projection	**39.0**	**40.3**	**42.5**	**45.1**	**46.8**
Outturn	**39.3**	**41.7**	**44.7**	**50.4**	**58.6**
Difference	**0.3**	**1.5**	**2.2**	**5.3**	**11.8**
Tax Revenue					
Projection	*34.9*	*37.5*	*39.9*	*42.3*	*44.3*
Outturn	*34.0*	*36.6*	*37.8*	*41.3*	*45.6*
Difference	*-0.9*	*-0.9*	*-2.0*	*-1.0*	*1.3*
Other Revenue					
Projection	*4.1*	*2.7*	*2.7*	*2.7*	*2.5*
Outturn	*5.3*	*5.1*	*6.9*	*9.1*	*13.0*
Difference	*1.2*	*2.3*	*4.2*	*6.4*	*10.5*
Current Budget Balance					
Projection	*-12.0*	*-10.8*	*-7.7*	*-4.3*	*-3.0*
Outturn	*-11.2*	*-10.1*	*-10.6*	*-5.5*	*0.0*
Difference	*0.8*	*0.7*	*-2.9*	*-1.2*	*3.0*

Table A2: Exchequer Projections (Budget Day Year Ahead) and Outturns, € billions

	2011	2012	2013	2014	2015
Exchequer Balance					
Projection	**-17.7**	**-18.9**	**-15.4**	**-9.6**	**-6.5**
Outturn	**-24.9**	**-14.9**	**-11.5**	**-8.2**	**-0.1**
Difference	**-7.2**	**4.0**	**3.9**	**1.4**	**6.4**
Expenditure					
Projection	**56.7**	**59.0**	**57.7**	**53.3**	**53.4**
Outturn	**64.2**	**56.6**	**56.2**	**58.6**	**58.7**
Difference	**7.5**	**-2.4**	**-1.5**	**5.3**	**5.3**
Voted Current Expenditure					
Projection	*41.7*	*40.5*	*40.2*	*38.4*	*38.0*
Outturn	*41.4*	*41.5*	*40.0*	*39.0*	*39.3*
Difference	*-0.3*	*0.9*	*-0.2*	*0.6*	*1.3*
Non-voted Current Expenditure					
Projection	*6.7*	*9.0*	*9.7*	*10.8*	*11.0*
Outturn	*6.6*	*8.1*	*11.1*	*10.7*	*9.8*
Difference	*-0.1*	*-0.9*	*1.4*	*0.0*	*-1.2*
Other Expenditure					
Projection	*8.3*	*9.5*	*7.8*	*4.2*	*4.4*
Outturn	*16.2*	*7.1*	*5.1*	*8.8*	*9.5*
Difference	*7.9*	*-2.4*	*-2.7*	*4.7*	*5.1*
Revenue					
Projection	**39.0**	**40.1**	**42.3**	**43.7**	**46.9**
Outturn	**39.3**	**41.7**	**44.7**	**50.4**	**58.6**
Difference	**0.3**	**1.6**	**2.4**	**6.7**	**11.7**
Tax Revenue					
Projection	*34.9*	*35.8*	*38.0*	*40.0*	*42.3*
Outturn	*34.0*	*36.6*	*37.8*	*41.3*	*45.6*
Difference	*-0.9*	*0.8*	*-0.1*	*1.2*	*3.3*
Other Revenue					
Projection	*4.1*	*4.3*	*4.4*	*3.7*	*4.6*
Outturn	*5.3*	*5.1*	*6.9*	*9.1*	*13.0*
Difference	*1.2*	*0.8*	*2.5*	*5.5*	*8.4*
Current Budget Balance					
Projection	*-11.5*	*-11.2*	*-9.6*	*-7.1*	*-3.7*
Outturn	*-11.2*	*-10.1*	*-10.6*	*-5.5*	*0.0*
Difference	*0.3*	*1.1*	*-1.0*	*1.6*	*3.7*

Sources: Internal calculations based on year-ahead Budget day and end-year Exchequer outturns.

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