The Domestic Economy

Overview

- *The economy is projected to grow in GDP terms by 5.1 per cent in 2016 and by 4.2 per cent in 2017 on the back of exceptionally strong rates of growth in domestic demand. The outlook for 2016 has been revised upwards following a very strong end to 2015 with overall growth of 7.8 per cent recorded. This was the fastest rate of growth recorded since 2000 and nearly five times the average rate of growth in the Euro Area. In effect, many of the upside risks to growth alluded to in previous Bulletins appear to have materialised.*

- *The GDP deflator also increased sharply in 2015 helped by favourable terms of trade developments. As a result, the level of nominal GDP increased by an estimated 13.5 per cent to just over €214 billion in 2015, which will further reduce headline general government deficit and debt ratios.*

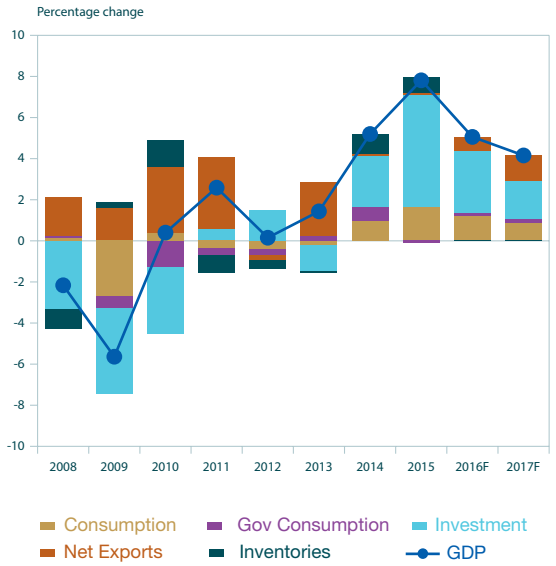
- *Both GDP and GNP as measured by international convention have become less reflective of the growth in underlying domestic activity. As a consequence it is useful to consider recent developments in the growth of underlying domestic demand excluding investment in aircraft and intangibles. This measure is estimated to have increased by 3.8 per cent in 2015, with a similar pace of expansion expected in 2016 before easing back to 3.2 per cent in 2017.*

- *Domestic demand components (consumption and total investment) are expected to again drive GDP growth over the forecast horizon reflecting in part pent up demand in the economy and a broad based labour market recovery. The strength of the rebound in domestic expenditure is also evident in a new macroeconomic heat map indicator developed by the Bank (see Box A).*

- *Personal consumption expenditure is projected to grow by 2.8 per cent this year and by 2.0 per cent in 2017. This pace of expansion is below that recorded in 2015 (3.5 per cent) and reflects in part an unwinding of some of the factors (e.g. the boost from lower energy prices) that supported demand in 2015.*

- *Investment has become a much larger component of GDP, in part following methodological changes to the National Income and Expenditure Accounts. Due to the size and difficulty in predicting intellectual property (IP) and aircraft investment flows (both of which are largely offset on the import side), our focus is increasingly*

Chart 1: Contributions to GDP



Source: CSO and Central Bank of Ireland.

on the other components of investment spending as referred to in previous Bulletins. Overall building and construction and underlying machinery and equipment investment are expected to record further large gains in 2016 and 2017, partly reflecting a "catch up" from weak investment during the years of the financial crisis.

- *Export and import growth were particularly robust in 2015 led by the activities of the multinational sector. Services exports have surprised on the upside supported in part by increased royalties related to the significant amount of IP assets now domiciled in Ireland. Indigenous exporting sectors have benefitted from a relatively competitive exchange rate, although the recent depreciation of sterling provides a less supportive environment for some in the near-term. External market conditions are weaker for 2016 and relatively unchanged in 2017 when compared to the previous Bulletin. However the strong positive impact of firm and sector specific factors underlying the strong export performance of 2015 are likely to persist to a certain degree and support continued robust growth in exports over the forecast horizon.*

- *Inflationary pressures are expected to remain muted this year and below projections made at the time of the previous Bulletin. This largely reflects downward pressures from global oil and*

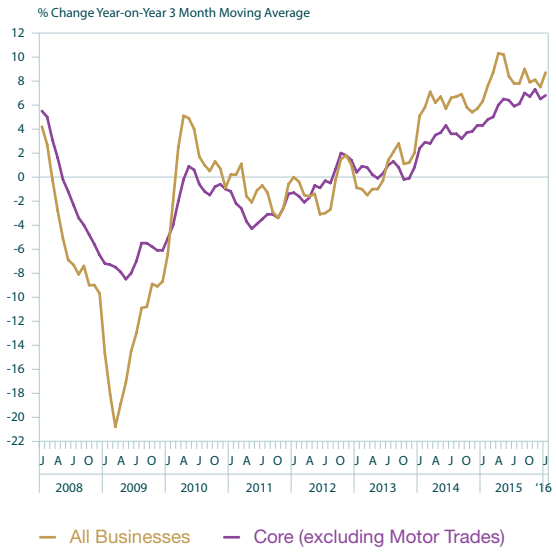
Table 1: Expenditure on Gross National Product 2015, 2016[f] and 2017[f]

	2015	% change in		2016[f]	% change in		2017[f]
	EUR millions	volume	price	EUR millions	volume	price	EUR millions
Personal Consumption Expenditure	92,381	2.8	0.9	95,822	2.0	1.6	99,303
Public Net Current Expenditure	27,851	1.1	0.8	28,401	1.9	1.5	29,368
Gross Domestic Fixed Capital Formation	47,250	13.6	2.5	55,045	7.7	3.3	61,265
Building and Construction	13,923	8.9	2.8	15,650	8.5	4.0	17,600
Machinery and Equipment	12,884	24.4	3.2	16,500	6.6	4.6	18,480
Intangibles	20,442	10.0	2.0	22,896	8.0	2.0	25,185
Value of Physical Changes in Stocks	2,651			2,651			2,651
TOTAL DOMESTIC DEMAND	170,133	5.5	1.4	181,920	3.7	2.1	192,587
Exports of Goods & Services	260,593	6.8	1.4	282,223	5.5	1.4	302,151
FINAL DEMAND	425,557	5.9	1.4	456,893	4.4	1.8	485,467
Imports of Goods & Services	-215,830	7.5	0.9	-234,251	5.4	1.1	-249,620
Statistical Discrepancy	-271			-271			-271
GROSS DOMESTIC PRODUCT	214,625	5.1	1.8	229,620	4.2	2.4	244,847
Net Factor Income from Rest of the World	-33,602	7.0	1.4	-36,459	6.6	1.4	-39,436
GROSS NATIONAL PRODUCT	181,023	4.7	1.9	193,161	3.7	2.6	205,411

commodity prices. While domestically driven services prices are expected to increase by 2.5 per cent this year, negative goods price inflation means that overall HICP inflation is projected to register an increase of 0.6 per cent. For next year, with goods inflation projected to turn mildly positive, inflation is forecast to increase to 1.7 per cent.

- *The labour market continued to perform strongly in 2015, with an additional 50,000 persons at work (representing employment growth of 2.5 per cent). For 2016 and 2017, employment growth averaging 2.0 per cent per annum is forecast, with gains expected to be strongest in the services sector. The unemployment rate has been on a sharp downward trajectory since 2012 (when it peaked at 15.1 per cent). For the forecast period, the average unemployment rate is forecast to decline further to 8.2 per cent in 2016 and 7.5 per cent in 2017. The decline in unemployment is tempered somewhat by stronger labour force growth.*
- *Risks to the projections are deemed to be to the downside. While consumption growth surprised on the upside in 2015, further large gains are unlikely given the limited scope for reductions in the savings rate. On the external side, uncertainty as to the outcome of the upcoming UK referendum on EU membership, emerging market concerns as well as broader geo-political factors have the potential to act as a drag on external demand and to weigh on investor and consumer sentiment.*

Chart 2: Index of Volume of Retail Sales



Source: CSO.

Demand

Domestic Demand Overview

Domestic demand is again expected to drive growth over the forecast horizon, reflecting the robust outlook for consumption and investment. As referred to in previous *Bulletins*, methodological changes to the National Income and Expenditure Accounts (NIE) have complicated the interpretation of some of the sub-components of investment spending. For these reasons, we pay particularly close attention to underlying domestic demand[1], defined as domestic demand less investment spending on intangibles and aircraft. Underlying demand is estimated to have increased by 3.8 per cent in 2015. For 2016 and 2017, this measure of demand is projected to grow strongly, albeit more moderately at an average rate of 3.5 per cent per annum. The depth and breadth of the recovery in domestic expenditure is also evident in a new macroeconomic heat map indicator developed by the Bank (see Box A).

Consumption

In 2016, personal consumption expenditure is forecast to grow robustly for a third consecutive year by 2.8 per cent, before moderating to 2 per cent in 2017. These forecasts are in large part driven by the favourable outlook for the labour market, disposable incomes and overall consumer sentiment. In particular, the strength in the labour market is supporting consumption (see Box B). These forecasts represent a moderation in the pace of consumption expenditure from growth of 3.5 per cent in 2015. This in part reflects an unwinding of some of the factors that supported demand in 2015, namely the boost to real disposable income from weaker consumer prices and an element of pent up demand.

The latest indicators for 2016 show continued momentum in consumer spending. New vehicle licences in the first two months of the year were up 29 per cent (with new car licences up by over a third). The volume of retail sales in the year to January increased by 10.3 per cent, with core sales (i.e. excluding motor trades) up 6.4 per cent.

1 See Box B: "Linking Employment to Underlying Economic Activity", in the Domestic Economy Chapter of the Central Bank of Ireland *Quarterly Bulletin No.1, 2016*.

Box A: A Macroeconomic Heat Map for Ireland

By Stephen Byrne and Diarmaid Smyth[2]

In assessing economic development and in preparing forecasts, economists need to monitor a wide range of data releases of various frequency. To assist with this, this Box outlines a first attempt at constructing a macroeconomic heat map for Ireland. These maps have become increasingly popular as a means of visually depicting a wide range of data in a fast and convenient manner, particularly during the financial crisis.[3]

In building the heat map, we choose high frequency data series which bear direct relevance to growth, inflation and the labour market. The map is subdivided into 5 main blocks. These are:

1. Expenditure
   - Consumption - retail sales (total, core, motor trades), vehicle registrations, VAT receipts
   - Investment - house completions, planning permissions, capital goods imports
   - Sentiment - consumer sentiment indicator (CSI), ISEQ stock market index.
   - Taxation - Exchequer tax receipts.
2. Output
   - Industrial production (total manufacturing, modern and traditional sectors).
   - Purchasing Managers Indices (PMI) for construction, manufacturing and services.
   - House completions
3. Trade
   - Merchandise exports and imports
4. Labour market
   - Unemployment rate, employment and vacancies
5. Prices
   - Inflation - HICP
   - Competitiveness - the Harmonised Competitiveness Indicator (HCI).

When constructing a heat map, a clear and consistent approach is needed to determine the rules or thresholds by which the shading for an observation is decided. These rules can be based on economic theory, historical trends, judgement or a combination of all three. In certain cases, rules already exist that allow a clear setting of a threshold. In our case, we let the data speak for itself, that is, for each variable; we take the longest time series available using standardised year on year growth rates. In the heat map, the shadings are determined by the number of standard deviations from the mean. A growth rate two standard deviations below the mean is assigned the darkest red, while the growth rate two standard deviations above the mean is shaded the darkest green. Observations within a standard deviation of the mean are shaded white.

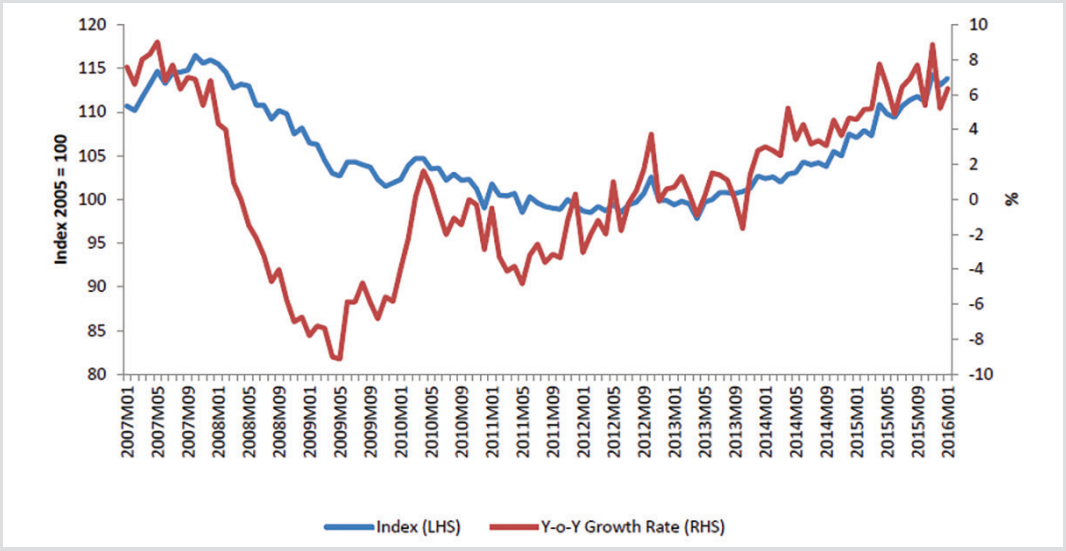
To see how the heat map is constructed, we take the example of core retail sales (Figure 1) with the underlying heat map thresholds depicted in the lower part of the panel. A clear picture emerges. During the latter years of the housing boom (2007), we can see rapid growth in the index; this is replicated by the heat indices turning a darker shade of green over this period. Throughout the downturn (from 2008), the series first reverts to a neutral shade before turning red as consumer spending fell sharply. From 2014 onwards, we can see the series turning from more neutral shades to green as domestic demand rebounded.

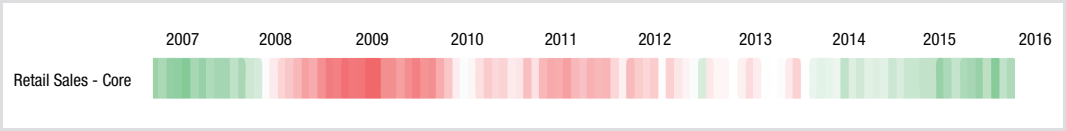
2 Irish Economic Analysis Division.

3 For recent work on Heat Maps, see McGillicuddy, J and Ricketts L. (2015), 'Is Inflation Running Hot or Cold?', Economic Synopses, 2015 Number 16.

Box A: A Macroeconomic Heat Map for Ireland

By Stephen Byrne and Diarmaid Smyth





For the economy wide heat map, we replicate the approach described above for our aforementioned list of variables. We examine the period from 2006 to early 2016. This is a rich period of analysis encompassing the end of the housing bubble period, the financial crisis and the subsequent recovery. The results in Figure 2 reveal three distinct phases ranging from the latter part of the housing boom (2006-2007), the balance sheet recession (2008-2012) and the subsequent rebound (2013- present).

The latter part of the housing boom (2006-2007)

In the years immediately prior to the crisis, the strength in domestic demand variables (much of which was fuelled by credit and related to housing) is apparent. However as the economy neared a sharp turning point, a number of salient features emerged – notably the weaknesses in sentiment indicators – PMI series as well as the consumer sentiment and ISEQ indices.

Balance sheet recession (2008-2012)

Over this period, growth in the economy was anaemic with domestic demand particularly subdued. In the heat map, nearly all series were flashing red to varying degrees but particularly labour market and domestic demand variables (retail sales, sentiment indicators and taxes). The sudden reversal in taxes (from green to red) is notable, thereby illustrating the very sharp unwinding in the fiscal position. The extensiveness of the colour red in the heat map in the early years of the recession is also striking. This gives a good visual sense of how deep and widespread the recession was – a period in which growth forecasts were consistently revised downwards.

Box A: A Macroeconomic Heat Map for Ireland

By Stephen Byrne and Diarmaid Smyth

Recovery post-crisis (2013-present)

Signs of a recovery in the economy began to increasingly manifest themselves in the heat map from mid-2013 onwards. Initially this was led by output and labour market variables. Gains in employment (and falls in unemployment) also became increasingly pervasive over this period. During the course of 2014, most indicators had changed colour pointing to an incipient recovery in the economy – notably domestic demand (including tax) variables turned green after a number of years of weakness. The broad based nature of the recovery is clearly visible as is the absence of any significant inflationary pressures. The strength of the rebound in domestic demand was only officially confirmed by the CSO with the release of the 2014 National Income and Expenditure (NIE) Accounts in July 2015.

Note: Green indicates higher growth. Red indicates negative growth (unless otherwise stated).

This Box is a first attempt at generating a macroeconomic heat map for Ireland. This is a tool that operates outside of more formal modelling approaches that exist within the Bank. It is hoped that the map will be further refined and regularly updated to help our understanding of economic developments. It is a fast and efficient means of assessing data both in the short-term as well as over longer time periods. The heat map could also be easily adapted to focus on more specific areas of the economy – for example, sub-components of inflation, fiscal aggregates, housing market developments, and so on.

Investment

As indicated in the previous *Bulletin*, the inclusion of intellectual property (IP) assets and the change in aircraft leasing arrangements in gross fixed capital formation adds considerably to the unpredictability in published investment figures. Investment in 'intangible' assets (generally in the form of a purchase of a licence or patent) amounted to over €20 billion in 2015 – an increase of over 100 per cent in the year. While this was most likely related to the reorganisation of activities by a limited number of multinationals, it represents a non-negligible proportion of overall investment (approximately 44 per cent) and is likely to add considerable noise to the overall investment figures in the future.

With this in mind, while the headline level of gross fixed capital formation almost reached its previous peak levels of 2006/2007, with growth of 28.2 per cent in 2015, underlying investment, net of the impact of investment intangibles and aircraft leasing and purchases, is still registering solid growth as capital restocking continues.

Quarterly National Accounts data for 2015 indicate that, on the building and construction side, new housing completions increased by 15 per cent year-on-year (there were 12,666 completions in 2015). However, this increase is coming from a very low base and further increases will be needed to satisfy current and future demand. Housing output is expected to increase to 15,000 and 18,000 units in 2016 and 2017, respectively. On the non-housing side, building and construction registered an increase of almost 10 per cent in 2015 (following a revision to previously published QNA data). With current available supply of commercial space dwindling, and a strong pipeline of incoming investments, investment in commercial real estate construction is also projected to be strong. Taking all of these factors into account, overall building and construction investment is projected to increase by close to 9 per cent in 2016 and 2017.

On the machinery and equipment side, the trend – net of aircraft – continues to be one of re-stocking and new investment, with projected increases of approximately 14.5 and 10 per cent for 2016 and 2017 forecast. In conjunction with the forecasts for building and construction, underlying investment, excluding intangibles and aircraft, is forecast to increase by approximately 11 and 9 per cent in 2016 and 2017, respectively. While these growth rates are high, the level of investment at approximately 12 per cent of GDP (net of aircraft and intangibles) is still well below what is indicated by historical and international norms (generally about 20 per cent of GDP). The impact of the protracted period of low investment since the crisis is evident in current housing and infrastructural deficits.

Government Consumption

Preliminary estimates for 2015 show that the volume of government consumption contracted by 0.8 per cent. Consumption was particularly weak in the latter half of the year perhaps reflecting stronger than expected government receipts (netted off consumption). In value terms however, government consumption spending increased by 2.3 per cent in 2015. The precise split between value and volume figures for government consumption in 2015 will be published in the National Income and Expenditure Accounts later in the year. For 2016 and 2017, real government consumption is forecast to grow at a rate of 1.5 per cent per annum.

Box B: Drivers of Personal Consumption – A BVAR Approach

By Stephen Byrne & Martin O'Brien[4]

One of the main issues in analysing consumption is the degree to which it develops in line with gross disposable income. In examining this, the Bank has a range of tools at its disposal; one of these is a reduced form Bayesian Vector Autoregression (BVAR). In this Box, we use a BVAR[5] which includes private consumption, and a disaggregation of gross disposable income into average employee compensation, the number of people employed and non-labour income. We also include the personal consumption deflator. The BVAR estimates allow us to capture the historical relationship between these variables. Using the model, we can illustrate the varying degrees to which the growth in the volume of consumption in recent quarters has been driven by developments in employment, labour and non-labour incomes.[6]

In Figure 1,[7] we illustrate in-sample forecasts of private consumption (PCR) starting in the second quarter of 2013 and conditional on the realised values of other variables in the model. The left hand side chart shows observed consumption growth (black line) compared with that implied by our model when conditioning on the realised values of the consumption deflator, average employee compensation and non-labour income. In this instance, the model captures developments in consumption over the early part of the conditioning period (2013 and early 2014). In 2015 however, the model undershoots relative to the outturn by approximately 2 percentage points.

On the right hand side we show the in sample forecast when the realised values of employment are also included in the conditioning information. In this case, the model overshoots the outturn in consumption in 2013-2014, but is more accurate in most recent quarters.

Dropping average compensation per employee or non-labour income respectively from the conditioning information does not change the in-sample forecasts significantly compared with those which include all the conditioning variables.

Combined these results suggest that employment growth has been a significant driver of increases in personal consumption since late-2014. When looking at the decomposition of aggregate disposable income growth however, the rise in employment has not been as prominent. Actual gross disposable income over the 2013 Q2-2015 Q2 period is estimated to have increased in nominal terms by approximately 10.8 per cent, with non-labour income growing by 24.9 per cent, employment growing by 4.8 per cent and average employee compensation growing by 2.6 per cent. Taking these developments together with the results from our BVAR estimation suggests that aggregate consumption growth is much less sensitive to changes in non-labour income. When the growth in disposable income is more concentrated in the non-labour income component the marginal propensity to consume out of disposable income is lower and would tend to lead to increases in the savings rate.

In the recent Irish experience, the growth in employment up to mid-2014 was not sufficient to support stronger consumption growth, despite the strong increases in non-labour income. With employment growth expected to ease over the forecast horizon in this *Bulletin*, it is less likely that consumption growth of levels seen in recent quarters would be sustained. These findings support the current central forecast for consumption growth also easing over this year and next.

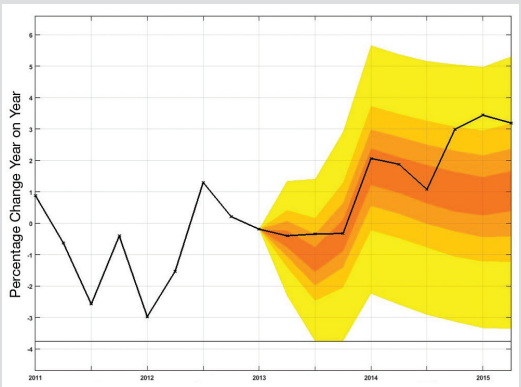
4 Irish Economic Analysis Division.

5 We thank Marta Banbura for sharing code used in this analysis.

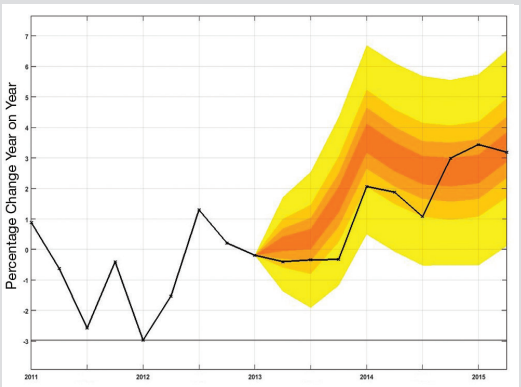
6 Non-labour income includes net taxes and transfers and income from property or self-employment.

7 The fan charts illustrate an estimate of the probability distribution of future outcomes as projected by the model; the red shading illustrates the median (most likely) outcome.

Box B: Drivers of Personal Consumption – A BVAR Approach
By Stephen Byrne & Martin O'Brien



Source: CSO and Authors' Calculations.



Source: CSO and Authors' Calculations.

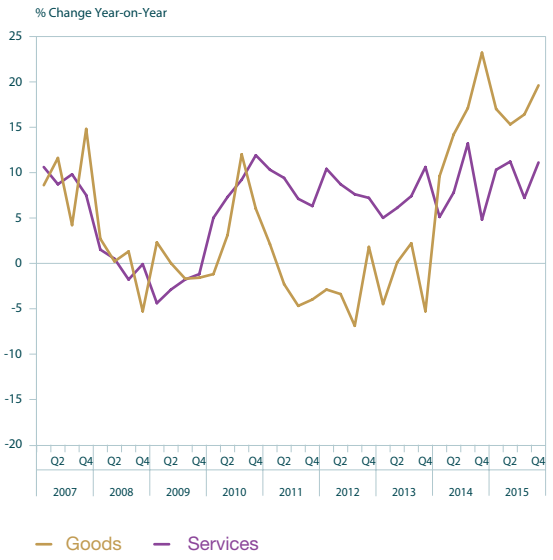
External Demand and the Balance of Payments

Exports and Imports

Preliminary estimates for 2015 from the Quarterly National Accounts confirm that both export and import growth were particularly robust last year. The outsize increase in imports during 2015 due to intellectual property (IP) purchases meant that the contribution of net exports to GDP growth was negligible. However these imports provide the potential for future export growth and support the stronger contribution from net exports to GDP growth expected both this year and next.

Goods exports have been the main contributor to overall export growth in recent quarters. However services export growth has been above expectations supported in part by increased royalties income related to the significant amount of IP assets domiciled in Ireland during 2014 and 2015.

Chart 3: Volume of Exports



Source: CSO Quarterly National Accounts.

Table 2: Goods and Services Trade 2015, 2016[f], 2017[f]

	2015	% change in		2016[f]	% change in		2017[f]
	EUR millions	volume	price	EUR millions	volume	price	EUR millions
Exports	260,593	6.8	1.4	282,223	5.5	1.4	302,151
Goods	143,769	7.5	0.5	155,287	5.6	1.0	165,638
Services	116,824	6.0	2.5	126,936	5.4	2.0	136,513
Imports	215,830	7.5	0.9	234,251	5.4	1.1	249,620
Goods	79,203	7.9	0.5	85,871	4.2	1.5	90,840
Services	136,627	7.3	1.2	148,380	6.2	0.8	158,780

Pharmaceuticals and medical apparatus exports continue to perform strongly, as do computer, business and financial services. Indigenous exporting sectors have benefitted from a relatively competitive exchange rate over the past year, although the recent depreciation of sterling may pose challenges for some in the near-term.

Regarding the outlook, conditions for external factors are slightly weaker for 2016 and relatively unchanged for 2017 when compared to the previous *Bulletin*. However the strong positive impact of firm and sector specific issues underlying the export performance of 2015 are likely to persist to a certain degree and support continued robust growth in exports over the forecast horizon. Sentiment indicators for both manufacturing and services industries continue to be positive in their outlook for exports, despite being slightly less positive than at the time of the last *Bulletin*. The outlook for demand in our major trading partners in 2017 based on the most recent external demand assumptions from the ECB is broadly unchanged from our last forecast and the strong performance of exports in the final quarter of 2015 brings with it very positive carry-over effects when considering the prospects for 2016.

With these factors in mind, the latest projection is for overall export growth of 6.8 per cent for 2016 in volume terms, and 5.5 per cent in 2017. Our central assumption is that Irish export growth will converge towards growth in trading partner demand through 2017.

While goods exports are expected to continue growing at a faster pace than services over the forecast horizon, the upward revision to total exports is concentrated in our outlook for services. This is due to an increased expectation of further royalties exports from IP assets resident in Ireland.

The fundamental factors underpinning import growth remain strong, but are expected to ease somewhat over this year and next. Domestic demand and export growth are anticipated to slow over the forecast horizon. Consequently, a 7.5 per cent increase in the volume of imports is expected in 2016 followed by a 5.4 per cent rise in 2017. There remains a significant amount of uncertainty around the imports projection given the impact and importance of IP related imports and how these will evolve given past experience and the re-structuring of multi-national firms activities in light of global measures on corporations profit tax.

Combined with the export outlook this implies a higher net export contribution to overall GDP growth compared with 2015, rising to 0.7 percentage points and 1.2 percentage points in 2016 and 2017 respectively.

Net Trade, Factor Incomes and International Transfers

The trade balance is estimated to have increased to over 20.9 per cent of nominal GDP in 2015, as the growth in the volume of

Table 3: Balance of Payments 2015, 2016[f], 2017[f]

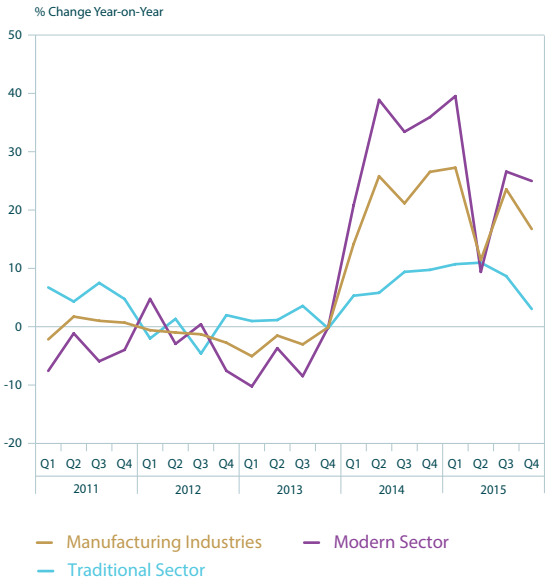
€ million	2015	2016[f]	2017[f]
Trade Balance	44,764	47,972	52,531
Goods	64,566	69,415	74,798
Services	-19,802	-21,444	-22,267
Net Factor Income from the Rest of the World	-32,356	-36,459	-39,436
Current International Transfers	-2,859	-2,859	-2,859
Balance on Current Account	9,549	8,653	10,236
(% of GDP)	4.4	3.8	4.2

exports and a strong improvement in the terms of trade more than offset the faster pace of growth in the volume of imports. Given the outlook for net exports and the terms of trade, it is expected that the trade balance will rise further over this year and next but at a slower pace, to just below 22 per cent of GDP.

Following three years of becoming persistently less negative due to rising investment income inflows for multi-national enterprises now headquartered in Ireland, net factor income flows for 2015 moved more in line with historical experience. There was a significant impact of multi-national corporate restructuring evident in the current and financial accounts of the balance of payments in 2015, and future activity in this space which will likely lead to larger gross factor income flows to Ireland over the forecast horizon. With both domestic and global policy initiatives on corporations profit tax for multi-nationals progressing, there is an increased possibility of higher factor income outflows in terms of dividends and retained earnings in future years.

While a significant amount of uncertainty attaches to the outlook for factor income flows, the central projection in this *Bulletin* is for developments in these and in the net trade flows to lead to the current account surplus averaging 4 per cent of GDP this year and next.

Chart 4: Volume of Industrial Production



Source: CSO.

Supply

The latest Quarterly National Accounts show robust growth in most sectors of the economy in 2015. In particular, industrial output expanded by 13.7 per cent over the course of the year, helped in part by growth in the construction sector. Output however was largely driven by the activities of the multinational sector, also evident in export, corporation tax and employment data.

Table 4: Employment, Labour Force and Unemployment 2015, 2016[f] and 2017[f]

	2015	2016[f]	2017[f]
Agriculture	110	110	111
Industry (including construction)	374	387	396
Services	1,481	1,513	1,539
Total Employment	**1,964**	**2,010**	**2,046**
Unemployment	203	179	165
Labour Force	2,167	2,189	2,211
Unemployment Rate (%)	9.4	8.2	7.5

Note: Figures may not sum due to rounding.

Services related sectors continued to expand with the distribution, transport, software and communications sector growing by 8.7 per cent and with the broad other services sector growing by 4.3 per cent. The agricultural sector registered growth of 6.4 per cent, helped in part by exchange rate developments.

More timely survey data point towards more moderate growth over the forecast period. In the services sector, the Investec Purchasing Manager's Index (PMI) declined to 62.1 in February from 64.0 in January. Similarly, the PMI for the manufacturing sector also declined (to 52.9) in February. However, both indices declined from high levels, with the decline perhaps reflecting financial market uncertainties at the start of the year. The CSO's Monthly Services Index expanded by 2.1 per cent month-on-month in January, driven principally by wholesale trade, accommodation and food, and ICT related services. Finally, the latest KBC Ireland/ESRI Consumer Sentiment Index pointed to a more cautious outlook from consumers at the start of the year. The index declined to 105.8 in February from 108.6 in January, following large gains in previous months.

The Labour Market

The level of employment in the economy is forecast to grow by 2.3 per cent in 2016 and by 1.7 per cent in 2017. This outlook builds on a robust labour market performance in 2015 as confirmed by the latest Quarterly National Household Survey (QNHS). The latter reported that numbers at work increased by 2.5 per cent last year, translating into an additional 50,000 persons in employment. These gains were broad-based across the sectors and concentrated in full-time jobs. Employment growth did however moderate as the year progressed, with the seasonally adjusted quarter-on-quarter growth rate halving to 0.4 per cent in the second half of 2015.

The forecasts for the labour market imply that employment will surpass the 2 million threshold later this year, with numbers at work increasing by close to 40,000 persons per annum in 2016 and 2017. The vast bulk of these jobs are expected to materialise in the broad services sector helped by the outlook for consumption and exports. Numbers at work in the construction sector are also expected to increase following robust gains in 2015 and driven by further large increases in construction investment spending.

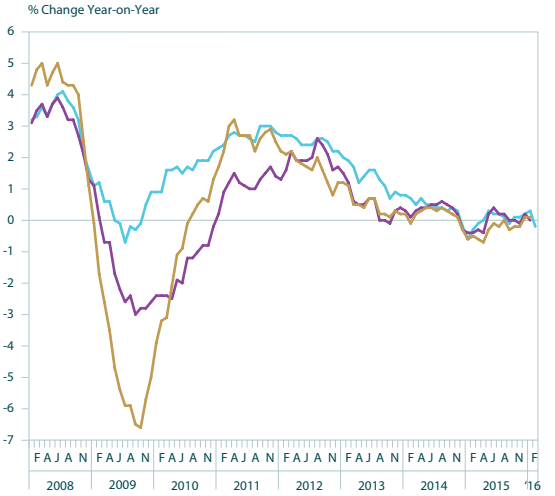
The labour force is expected to grow by 1 per cent per annum in 2016 and 2017, with a small increase in the participation rate being accompanied by a rise in the active-age population as net migration turns positive. This rate of growth coupled with the outlook for employment should result in the unemployment rate declining further towards an average rate of 8.2 per cent in 2016 and 7.5 per cent in 2017.

Table 5: Inflation Measures - Annual Averages, Per Cent

Measure	HICP	HICP excluding Energy	Services[a]	Goods[a]	CPI
2012	1.9	0.9	1.9	1.9	1.7
2013	0.6	0.6	1.6	-0.4	0.5
2014	0.3	0.5	2.4	-1.7	0.1
2015[e]	0.0	1.0	3.4	-3.4	-0.3
2016[f]	0.6	1.1	2.5	-1.4	0.7
2017[f]	1.7	1.5	3.0	0.4	1.7

a Goods and services inflation refers to the HICP goods and services components.

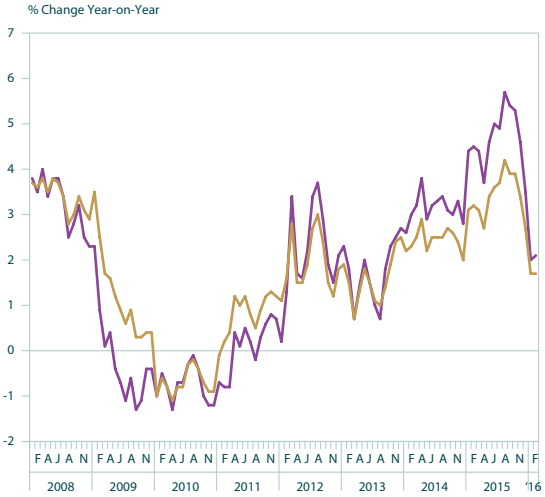
Chart 5: Consumer Prices



— Ireland: Consumer Price Index
— Ireland: Harmonised Index of Consumer Prices (HICP)
— EA-19: Monetary Union Index of Consumer Prices (MUICP)

Source: CSO.

Chart 6: Services Sector Inflation



— HICP Services (Overall) — HICP Core Services

Note: Core Market Services equals HICP services excluding telecommunications, alcohol and administered services.

Source: CSO.

Pay

In 2016 and 2017, wages are expected to rise by an average of 2.5 per cent per annum reflecting a tightening labour market. In the context of a weak price environment, these increases constitute significant gains in real terms. This outlook coupled with the forecast for employment should see economy wide compensation levels growing by close to 5 per cent in 2016 and closer to 4.5 per cent in 2017 lending significant support to disposable income and consumption.

Inflation

Despite the strength in the domestic economy, headline inflation remains subdued. However, near zero headline inflation masks the underlying divergence in goods and services price developments. As expected, low global commodity prices continue to feed through to lower goods price inflation. Services inflation, on the other hand, which is mainly driven by domestic demand, is registering continued counter-balancing increases.

The Consumer Price Index (CPI) recorded a decline of 0.3 per cent in 2015 as declines in clothing, household furnishing and transport more than offset increases in education, health and other services prices. The latest available inflation data indicate that consumer prices declined by 0.1 per cent year-on-year on a CPI basis in February 2016. Low global commodity, and in particular, oil prices continue to drive developments on the external front; Brent Crude oil prices at the time of writing were $39 per barrel.

On the currency front, the euro was trading slightly stronger against the pound sterling and the US dollar (our main trading partners) compared to the previous *Bulletin*. All else being equal, a rise in the value of the euro serves to decrease the euro price that foreign producers selling in Ireland need to charge to maintain profits in their own currency. Since the last *Bulletin*, the technical assumptions underlying the forecasts with regard to the pound sterling and the US dollar are approximately 6.2 and 1.4 per cent higher, respectively. This could be expected to add to the deflationary impact of low global commodity prices.

Following on from flat inflation in 2015, and on the basis of currently available information and prevailing oil futures prices, CPI and HICP inflation is expected to increase to 0.7 and 0.6 per cent respectively in 2016, a downward revision of 0.3 and 0.4 per cent compared with the previous *Bulletin* – attributable mainly to the lower outturn for the opening months of the year, continued weakness in global commodity prices and a stronger euro exchange rate. Reflecting strength in domestic demand, services inflation is projected to increase by 2.5 per cent, while goods price inflation, on the other hand, is expected to decline by 1.5 per cent driven in the main by lower energy, industrial goods and processed food prices. Looking to 2017, some pick-up in headline HICP inflation is envisaged, driven mainly by a recovery in the goods component, as the moderating influence of external factors seems set to wane; HICP inflation is forecast to increase by 1.7 per cent in 2017.

Box C: What is happening to producer prices in Ireland?
By John Scally[8]

The Producer Price Index (PPI), or Wholesale Price Index, measures the average change over time in the selling prices received by domestic producers of goods and services; it is often referred to as the 'factory gate' price. It covers both goods produced and sold in Ireland and good produced here for export.

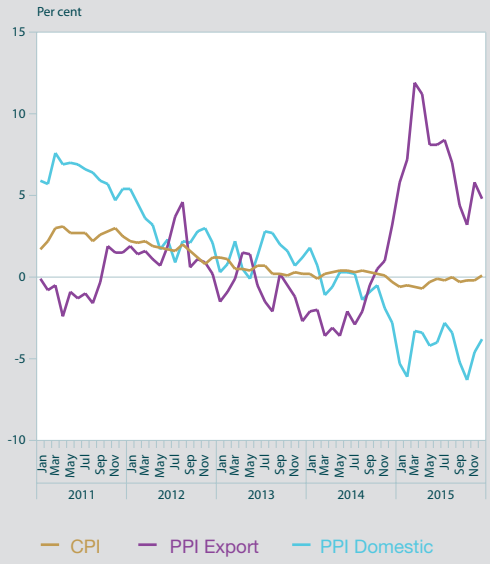
While one might expect movements in the PPI to lead movements in the Consumer Price Index (CPI) this is not always the case, reflecting the important compositional and methodological differences in the construction of the two indices. With these methodological differences in mind, it is instructive to look at comparative developments in the PPI and CPI. Figure 1 illustrates that the PPI exhibited greater fluctuation compared to the CPI over the 2010 to 2015 period. It is evident that the growth rate in the PPI sharply reversed its downward trend in early 2015, with the annual rate of increase rising to 10 per cent – a trend that is not reflected in the CPI which maintains a more stable trajectory.

8 Irish Economic Analysis Division.

Box C: What is happening to producer prices in Ireland?

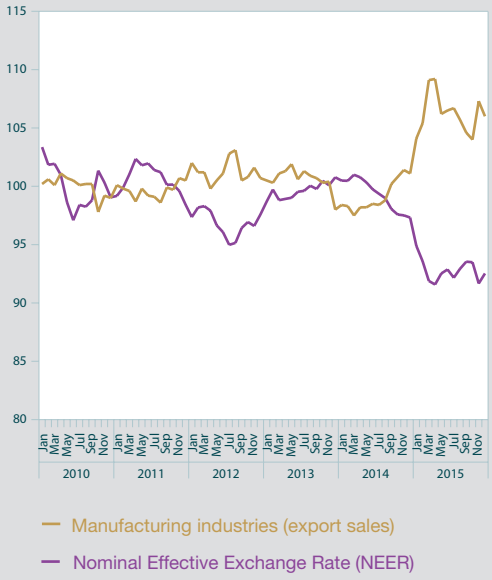
By John Scally

Box C Fig 1: Producer and Consumer Price Inflation



Source: CSO.

Box C Fig 2: Export Sales Prices and the Nominal Effective Exchange Rate



Source: CSO and Central Bank of Ireland.

Looking at the export component of the PPI (the price of goods produced here destined for export) we can see that developments closely mirror the inverse of currency movements, suggesting that manufacturing exporters from Ireland are effective price-takers. When the euro depreciates against the dollar and pound sterling, they generally maintain the dollar or sterling value of the product by increasing the euro denominated price.

To assess more formally the contributions to PPI inflation, the following equation is estimated:

$$\Delta PPI_t = \alpha + \beta_1 \Delta PPI_{t-1} + \beta_2 \Delta Oil_t + \beta_3 \Delta Nonoil_t + \beta_4 \Delta NEER_t + \beta_5 Gap_t + \varepsilon_t \quad (1)$$

Using monthly data from 2010 to 2015, the model relates the year-on-year changes in PPI inflation to its own lags (ΔPPI_{t-1}), oil price changes (ΔOil_t), non-energy global commodity price growth ($\Delta Nonoil_t$),changes in the nominal effective exchange rate (NEER) and a measure of economic slack (Gap_t).[9] The results are summarised in Table 1. We can see that PPI inflation is determined by its lag, non-oil commodity prices and the effective exchange rate; for domestic PPI inflation the price of oil was more of a factor than for producer goods destined for export. As expected, goods destined for export have a higher exchange rate coefficient (and significance level) than goods sold domestically. These results confirm the importance of the exchange rate in the determination of producer prices in Ireland and the dominance of export manufactures on the overall PPI. In contrast, the domestic PPI is more closely related to consumer prices.

Box C, Table 1: Coefficients for Producer Price Inflation

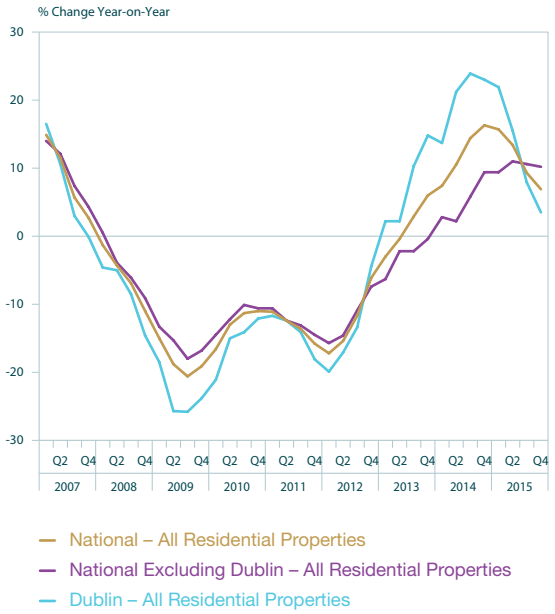
	PPI	PPI Export	PPI Domestic
ΔPPI_{t-1}	0.634***	0.626***	0.588***
ΔOil_t	-0.013	-0.179	0.061***
$\Delta Nonoil_t$	0.099***	0.012	-0.141*
$\Delta NEER_t$	-0.205***	-0.255***	-0.059*
Gap_t	0.017*	0.022*	0.004

Source: Internal calculations.

*, **, *** denote significance at the 10, 5 and 1 per cent levels.

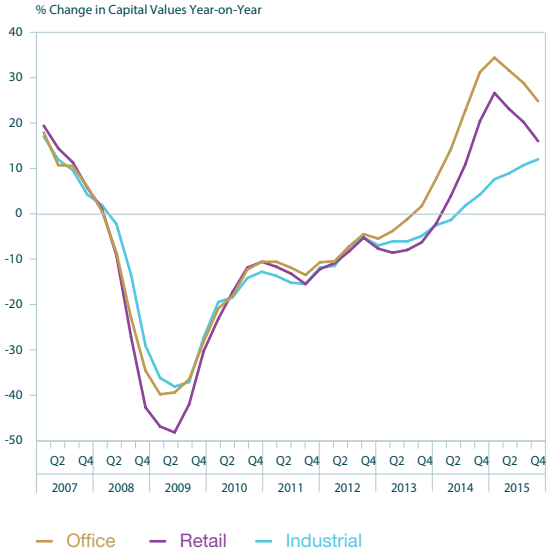
9 The monthly slack indicator uses the deviation of industrial production from trend using a HP filter on the Industrial production series (CSO).

Chart 7: Residential Property Price Indices



Source: CSO.

Chart 8: MSCI/IPD Irish Commercial Property Index



Source: MSCI/IPD.

Residential Property

Growth in residential property prices moderated significantly through 2015, although data for January 2016 saw the year-on-year rate of increase rising to 7.6 per cent from 6.6 per cent in December 2015. Diverse regional patterns persist in the dynamics of residential property prices, with prices in Dublin currently increasing at less than 4 per cent while prices outside Dublin rising almost consistently above 10 per cent in recent months. Rising housing demand, reflecting demographic factors and the continuing increase in employment and disposable incomes, combined with a muted response of housing supply is contributing to upward pressure on house prices. The stronger increase in prices outside Dublin reflects some degree of "catch-up" on Dublin prices as the improvement in household's economic conditions spreads across the country.

Commercial Property

The latest data from the MSCI/IPD show that commercial property prices continued to grow at a robust pace in the fourth quarter of 2015. On an annual basis growth was strongest in the office and retail sectors, at 21.3 and 14.2 per cent, respectively. In the industrial sector, annual growth of 12.4 per cent was recorded in 2015. Overall commercial property prices expanded by 18.7 per cent over the year. The Bank's latest Macro Financial Review (December 2015) conducts a detailed analysis of recent developments in the commercial property sector.

Competitiveness

By mid-March 2016, the euro had appreciated relative to the US dollar and the pound sterling since the beginning of the year. While the appreciation against the dollar had been relatively small in year-on-year terms at approximately 1 per cent, with the bulk of this occurring since the start of 2016. The situation is more pronounced for the euro against the pound as the pace of appreciation by mid-March had risen to over 5 per cent from end-2015. Uncertainty relating to the forthcoming UK referendum on EU membership is commonly cited as a factor in the recent

performance of sterling, while an expectation of slower monetary policy normalisation in the United States also features in commentary on the developments in the euro/dollar exchange rate.

The latest Harmonised Competitiveness Index (HCI) data for January 2016 show that the nominal HCI depreciated by 0.9 per cent on a year-on-year basis. When deflated by consumer prices and producer prices, the real HCI decreased by 2.0 per cent and 1.6 per cent, respectively, over the same period. These HCI developments indicate a much slower pace of competitiveness gain than evident in previous years and continue a trend that developments in competitiveness on these measures have been dominated by nominal exchange rate movements as opposed to any significant improvement in the relative cost base and prices of Irish exporters.

On the basis of the conventional GDP per worker measure, productivity increased by 5 per cent in 2015. Looking ahead, average annual productivity growth of 2.7 and 2.3 per cent is forecast for 2016 and 2017, respectively. Factoring in the projected increases in compensation of employees over the forecast horizon, unit labour costs are expected to remain relatively unchanged.

The Public Finances

Overview

The first official estimate of last year's general government deficit and debt will be released next month. These are expected to show that fiscal targets were met comfortably once again, and should confirm Ireland's move from the corrective to the preventive arm of the Stability and Growth Pact. Indeed, both key metrics appear to have performed much better than had been anticipated at Budget time, when a deficit of 2.1 per cent of GDP was forecast. The latest data points to a continuation of these fiscal trends, with robust tax revenue growth in the first months of the year.

Exchequer Returns[10]

Exchequer data is currently available for the first two months of the year. It reveals continued strong tax growth and falling expenditure at the beginning of 2016, with the outturn broadly in line with expectations (see Table 6). This follows a significant Exchequer over performance last year, which was largely driven by the rapid growth in corporation taxes.

Taking a closer look, tax revenue grew by 7.1 per cent on an annual basis in the year to February, against the backdrop of positive developments in income tax and excise duties. The former was 8.7 per cent higher relative to the same period in 2015, as the labour market continued to strengthen, while the latter increased by over 20 per cent. VAT receipts, by comparison, were somewhat lower than expected. While non-tax revenue recorded a notable year-on-year decline, this was fully anticipated and primarily reflected lower dividend receipts at the start of the year. On the spending side all of the major components – current primary, capital and debt interest – were lower, although with regard to voted expenditure timing factors appear to have played a role. Interest on the national debt declined by €150 million in annual terms, but is expected to be broadly unchanged for the year as a whole.

Funding and Other Developments

The National Treasury Management Agency (NTMA) raised €4 billion through the sale of 10-year bonds in the first quarter of 2016, and as a result is comfortably on target to achieve its range of €6-10 billion for the year as a whole. The Agency also cancelled close to €1.5 billion in outstanding bonds during this period. In February, the ratings agency Fitch upgraded Ireland's long-term sovereign credit rating to A (from A-).

10 The figures in this section exclude transactions with no general government impact, giving a closer approximation to the general government balance. These figures are provided by the Department of Finance in its Analytical Exchequer Statement.

Table 6: Analytical Exchequer Statement for February 2016 (€ millions)

	Jan-Feb 2016 €m	Jan-Feb 2015 €m	Annual Change (%)	Outturn vs Profile (%)
Revenue	**9,087**	**8,873**	**2.4**	**0.2**
– Tax revenue	7,215	6,737	7.1	-0.5
– Appropriations-in-aid	1,778	1,809	-1.7	3.0
– Other Revenue	94	327	-71.3	0.0
Expenditure	**9,175**	**9,854**	**-6.9**	**-0.6**
– Current Primary Expenditure	8,482	8,969	-5.4	-0.7
– Capital Expenditure	287	325	-11.9	1.8
– Interest on National Debt	407	560	-27.3	0
Exchequer Balance	**-88**	**-980**	**91.0**	**45.6**

Source: Department of Finance

Note: The figures in the Table exclude transactions with no general government impact, giving a closer approximation to the general government balance.