The Domestic Economy

Overview

- *Following estimated growth of 6.6 per cent in 2015, real GDP is expected to rise by 4.8 per cent this year, broadly unchanged from the previous Bulletin. Growth of 4.4 per cent is expected for 2017. It is anticipated that domestic demand will continue to be the main driver of economic growth over the forecast horizon, complemented by a stronger contribution from net exports as time progresses. Real GNP is expected to rise this year and next, by 4.3 and 3.9 per cent, respectively.*

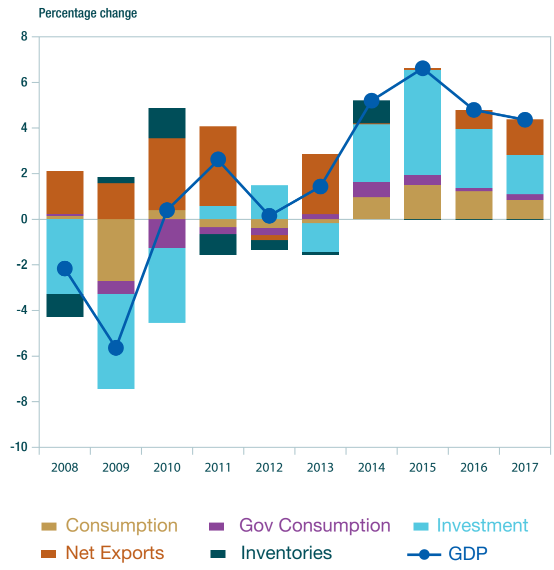
- *Growth in domestic demand, while easing over the forecast horizon, is expected to remain strong at 5 per cent and 3.6 per cent in 2016 and 2017, respectively. The expansion of investment continues to dominate, particularly the impact of outlays on aircraft and intellectual property (IP) assets. More employment intensive forms of investment, such as building and construction and non-aircraft machinery and equipment are expected to grow at over 8 per cent this year and next, a slightly slower pace than previously forecast. Underlying domestic demand (excluding aircraft and intangibles investment) is set to expand by an average of 3.2 per cent per annum over the forecast horizon (see Box B).*

- *Consumption is expected to rise by 2.8 per cent this year, a somewhat slower pace than 2015 but still higher than previously forecast. The rise in consumption is driven by the growth in real disposable income resulting from employment and wage growth as well as lower inflation due to energy prices. With further large reductions in the household savings ratio unlikely over the forecast horizon, a further moderation in consumption growth in 2017 to 2 per cent is expected.*

- *The impact of corporate restructuring involving Irish resident multinational firms in high-tech sectors continues to dominate trade and factor income developments. Indigenous exporting sectors are, however, benefitting from the competitive exchange rate and low energy prices. Export growth at 6.5 per cent and 4.9 per cent per annum over the forecast horizon is expected, more closely reflecting trading partner demand than what was the case in 2015. The outlook for external demand for Irish goods and services is slightly weaker than in the previous Bulletin. Imports are also expected to grow at a slightly slower pace than previously forecast for 2016 due to the current outlook for investment and exports, while the easing of consumption growth also contributes to a smaller rise in imports of 4.4 per cent in 2017.*

- *Employment growth is expected to moderate slightly over the forecast horizon to just below 2 per cent in 2017 from 2.4 per cent in 2016, consistent with the outlook for underlying domestic demand. Alongside a return to labour force growth, reflecting positive demographic effects and slightly higher participation, this should see the unemployment rate averaging 8.2 and 7.4 per cent respectively this year and next. The improving labour market is expected to support increases in average rates of pay above 2.5 per cent in both 2016 and 2017.*

Chart 1: Contributions to GDP



Source: CSO and Central Bank of Ireland.

- *Inflation is expected to be moderate in 2016, with HICP inflation averaging 1 per cent over the year. Assumptions for global commodity prices in 2016, especially oil, are weaker than at the time of the previous Bulletin, and the pass-through of these to the overall HICP offsets the growth anticipated in more domestically driven consumer services prices. Consumer prices are forecast to rise by 1.9 per cent in 2017, as commodity price growth feeds into positive goods price inflation of 1.1 per cent and prices for consumer services projected to increase by 2.7 per cent.*

- *Risks to the GDP and GNP forecasts are currently deemed to be broadly balanced for 2016 and marginally on the downside for 2017. The contribution of potentially transitory factors to growth last year may prove to be less durable when considering the performance in 2016 for investment, exports and particularly imports, which may boost GDP. Further boosts to consumption growth beyond current forecasts may be limited by the scope for large reductions in the household savings rate. The rather favourable external environment underlying the current forecast is subject to downside risks. This reflects the risk of a sharper slowdown in emerging market economies, a possibly faster normalisation of monetary policy outside the euro area and uncertainty related to the UK referendum on EU membership.*

Table 1: Expenditure on Gross National Product 2014, 2015[f] and 2016[f]

	2015[e]	% change in		2016[f]	% change in		2017[f]
	EUR millions	volume	price	EUR millions	volume	price	EUR millions
Personal Consumption Expenditure	92,448	2.8	1.1	96,082	2.0	1.9	99,866
Public Net Current Expenditure	28,606	1.1	0.8	29,171	1.9	1.5	30,165
Gross Domestic Fixed Capital Formation	46,783	11.8	2.3	53,527	7.4	3.2	59,336
Building and Construction	13,321	7.2	2.8	14,655	8.5	4.0	16,481
Machinery and Equipment	12,324	19.8	3.3	15,198	5.5	4.7	16,813
Intangibles	21,138	10.0	2.0	23,674	8.0	2.0	26,042
Value of Physical Changes in Stocks	1,905			1,905			1,905
TOTAL DOMESTIC DEMAND	169,743	5.0	1.4	180,685	3.6	2.2	191,272
Exports of Goods & Services	255,814	6.5	1.4	276,207	4.9	1.5	294,195
FINAL DEMAND	425,557	5.9	1.4	456,893	4.4	1.8	485,467
Imports of Goods & Services	-212,482	6.9	-0.6	-228,695	4.4	-1.7	-242,790
Statistical Discrepancy	-239			-239			-239
GROSS DOMESTIC PRODUCT	212,836	4.8	2.2	227,958	4.4	1.9	242,438
Net Factor Income from Rest of the World	-32,429	7.4	1.4	-35,331	7.1	1.5	-38,408
GROSS NATIONAL PRODUCT	180,407	4.3	2.4	192,627	3.9	2.0	204,031

Demand

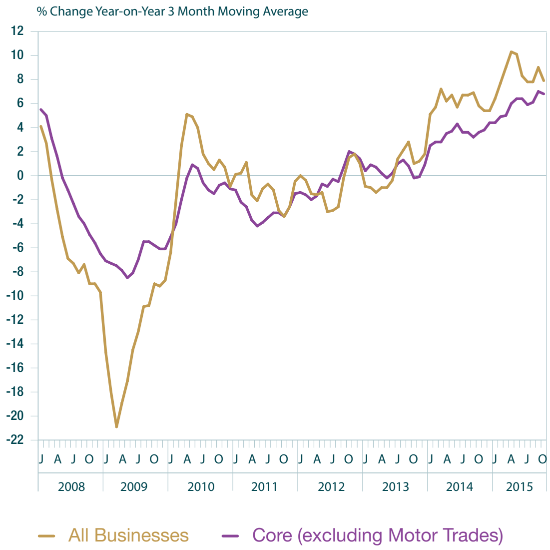
Domestic Demand Overview

Similar to 2015, domestic demand is expected to be the main driver of growth over the forecast horizon with a robust outlook for both consumption and investment spending. Overall domestic demand is expected to grow by 5 per cent in 2016 before moderating to 3.6 per cent in 2017. These rates are lower than the estimated growth of 8.1 per cent recorded in 2015. Methodological changes to the *National Income and Expenditure Accounts* (NIE) have had the effect of significantly boosting some of the sub-components of investment spending; specifically transport equipment and intangibles-related expenditures, complicating their interpretation. In particular, the increase in intangibles was especially sharp in 2015. Still, underlying investment (i.e. investment excluding intangibles and transport items) remains strong and is expected to contribute to growth over the forecast horizon. In Box B, we consider in more detail the links between the components of domestic demand and employment.

Consumption

In 2015, personal consumption expenditure grew by an estimated 3.2 per cent, marking the fastest rate of growth since 2007. *Quarterly National Accounts* (QNA) data were consistently strong throughout last year, with

Chart 2: Index of Volume of Retail Sales



Source: CSO.

a seventh consecutive quarter of expansion recorded in consumer spending in the third quarter. Higher frequency indicators, principally retail sales and taxation data also point to robust activity in the final three months of the year. Retail sales grew by 9.4 per cent in the year to November, with core retail sales up by 8.9 per cent.

In 2016, personal consumption expenditure is forecast to grow by 2.8 per cent before moderating to 2 per cent in 2017. These forecasts are supported by a favourable labour market outlook and rising economy-wide compensation levels (see below) as well as a boost to real incomes arising from low energy prices (see Box A). In addition, the combination of improving sentiment, weak price pressures, rising asset prices and accommodative monetary and fiscal policies should lend further support to the consumption outlook.

Box A: Has real income growth been supported by lower energy prices?

By Reamonn Lydon and Stephen Byrne[1]

A significant decrease in the price of energy has been a feature of the economic landscape over the past 24 months. The price of crude oil in euro terms fell by 51.5 per cent between January 2013 and November 2015. Energy prices faced by consumers have also fallen sharply: the price of Liquid Fuels (Home Heating) and Fuels and Lubricants for Personal Transport have fallen by 31.9 per cent and 18.1 per cent respectively over the same period.[2] In this Box we ask to what extent real income growth has been boosted by the recent decline in energy prices.

Energy Prices Counterfactual

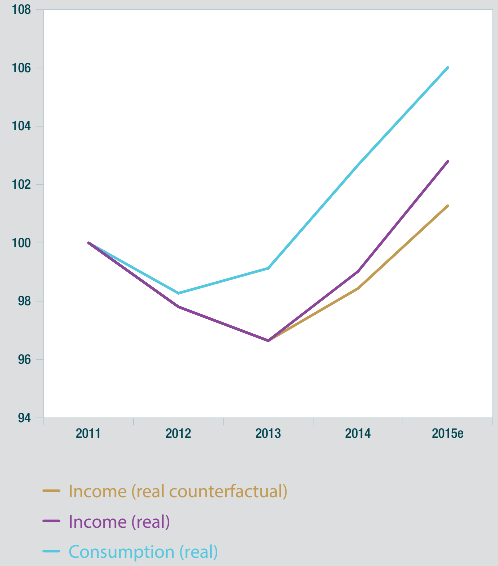
Figure 1 examines developments in real disposable income which we calculate by deflating gross personal disposable income by the consumer price index. The purple line illustrates the decline in real incomes in the period to 2013 and the subsequent recovery thereafter. Downward energy price shocks increase the discretionary income households have available to spend on consumption of other goods and services. In order to examine the magnitude of this support, we conduct a simple counterfactual exercise which is illustrated in figure 1.

1 Irish Economic Analysis Division.
2 CPI Detailed Sub-Indices

Box A: Has real income growth been supported by lower energy prices?
By Reamonn Lydon and Stephen Byrne

The gold line illustrates the mechanical impact of lower energy prices on real incomes by fixing the price of energy in the CPI basket at its January 2013 level. Using this counterfactual, we can examine what developments in real incomes would have looked like had the subsequent decline in energy prices not occurred. The result shows that while there would still have been a recovery in real incomes, this would not have been as substantial as the outturn. In 2014, the fall in energy prices contributed 0.6 percentage points to the increase in real incomes. Using the Central Bank's current estimates for 2015 Gross Disposable Income, this difference accumulates to around 1.5 percentage points by the end of 2015. In other words, we estimate that energy price falls have provided around a 1.5 percentage point boost to households' purchasing power since January 2013. The overall increase in real incomes during this period is expected to be around 6 per cent. It is important to point out that the consumption impact of this short-term boost to real income depends on how households react, notably their propensity to save or spend the additional income.

Box A Fig 1: Energy prices counterfactual and the developments of real disposable income. (2011=100)



Source: CSO, Central Bank and Authors' Calculations.

Theory suggests that if households expect lower oil prices to be a permanent feature of the economic landscape then more of the increase in real income will be reflected in spending. If, on the other hand, oil prices are expected to increase in the short- to medium-term households might choose to save more. Gross-savings rates fell by just over 1 percentage point in 2014 and are unlikely to have fallen further in 2015. This suggests that much of the increase in purchasing power from lower energy prices found its way into spending.

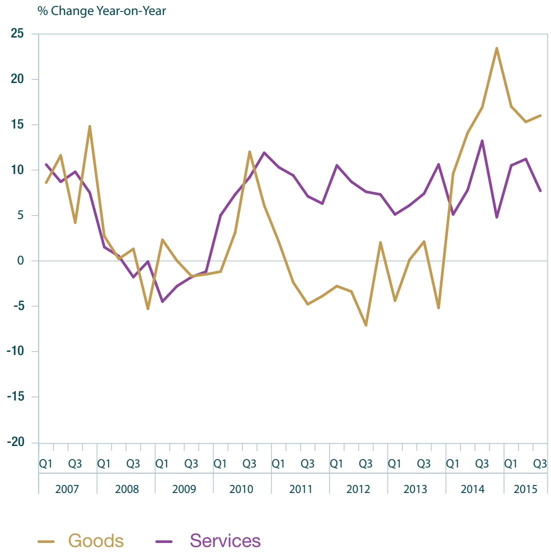
Investment

Uncertainty relating to the outlook for investment expenditure increased significantly with the inclusion of intellectual property (IP) assets in gross fixed capital formation,[3] which was the main driver of investment growth in 2015. While this category of intangible investment is related to the exports of high-tech sectors in Ireland, it is not as employment intensive as investment in building and construction or machinery and equipment. Uncertainty and volatility in the investment data is further compounded by the scale of fluctuation in investment in aircraft by Irish resident airlines and leasing companies.[4]

3 Intangibles investment, which includes spending on patents and intellectual property rights as well as organisational and human capital, amounted to almost €15 billion in the first three quarters of 2015 – an increase of almost 115 per cent in the year. While this was probably related to the reorganisation of activities by a limited number of multinationals, it represents a non-negligible proportion of overall investment and is likely to add considerable noise to the overall investment figures. For further details on the methodological change see "Box A: The Implications of Recent Changes to Macroeconomic Statistics" in the Domestic Economy chapter of the Central Bank of Ireland *Quarterly Bulletin* No.3, 2014.

4 For further details on the issue of aircraft in investment see "Box B: The Impact of Changes in Trade in Aircraft in the National Accounts" in the Domestic Economy chapter of the Central Bank of Ireland *Quarterly Bulletin* No.4 2015.

Chart 3: Volume of Exports



Source: CSO Quarterly National Accounts.

Quarterly National Accounts data for the first three quarters of 2015 indicate that, on the building and construction side, new housing completions increased by almost a fifth on a year-on-year basis. 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 14,000 and 18,000 units in 2016 and 2017, respectively.[5] On the non-housing side, expectations have been revised down slightly since the previous *Bulletin* following a lower than expected outturn in the third quarter of 2015. Nonetheless, the low vacancy rate in the commercial sector and a reasonably favourable pipeline of announced projects should see higher single-digit increases 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 10 per cent and 8 per cent for 2016 and 2017. In conjunction with the forecasts for building and construction, underlying investment, excluding intangibles and aircraft, is forecast to increase by 8.3 per cent in 2016 and 2017, with headline investment growth of 11.8 and 7.4 per cent expected over the same period.

Government Consumption

After growing by 2 per cent in the first three quarters, the volume of government consumption is estimated to have increased by 3 per cent in 2015. For 2016 and 2017, government consumption is forecast to grow at a more moderate average pace of 1.5 per cent.

External Demand and the Balance of Payments

Exports and Imports

Developments in both exports and imports are now estimated to have been stronger than previously projected for 2015. With import growth in particular being affected by large IP purchases, the overall contribution of net exports to GDP growth is likely to have been negligible last year. Projections in this *Bulletin* for 2016 and 2017 imply a stronger contribution from net exports to GDP growth over the forecast horizon (Chart 1). This arises as the easing of growth in consumption and investment lead to a more pronounced deceleration in projected import growth whereas export growth, while slowing, is expected to be increasingly supported by a gradual and sustained rise in world demand and, to a lesser extent, a continuation of the favourable factors underpinning the 2015 performance.

Goods exports have been the main contributor to overall export growth in recent quarters, reflecting both activity within the State and production carried out on contract for Irish resident companies outside the State. The high-tech sectors of pharmaceuticals and medical devices continue to feature strongly in goods and total export performance. On the

5 There appears to be some disengagement between housing output as recorded in the *National Accounts* and completion figures published by the Department of Environment, Community and Local Government. This may relate to previously flagged issues over the use of electricity connections in the DoECLG data.

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

	2015e	% change in		2016f	% change in		2017f
	EUR millions	volume	price	EUR millions	volume	price	EUR millions
Exports	255,814	6.5	1.4	276,207	4.9	1.5	294,195
Goods	141,446	7.4	0.8	153,128	5.4	1.2	163,322
Services	114,368	5.3	2.2	123,079	4.4	1.9	130,873
Imports	212,482	6.9	0.6	228,695	4.4	1.7	242,790
Goods	79,885	5.8	0.9	85,244	3.6	1.8	89,870
Services	132,597	7.6	0.5	143,452	4.9	1.6	152,920

services side, computer, business and financial services have maintained a strong level of growth over recent quarters. Alongside the export of aircraft this has also supported recent export growth. While the performance of indigenous exporting firms are overshadowed in the aggregate figures by the predominantly foreign-owned high-tech sectors, these too are performing well aided by the competitive euro exchange rate and the lower cost of energy inputs.

Looking forward, the relatively favourable outlook for external factors, such as the cost of energy and exchange rate competitiveness, combined with favourable firm and sector-specific developments are likely to support continued robust growth in exports over the forecast horizon. The recent domiciling of IP assets in Ireland by a number of firms in high-tech sectors should also enable further growth in both goods and services exports. On-going expansion in Ireland through both green-field and mergers and acquisition (M&A) activity by multi-national firms and the related shifts in Ireland's position in global value chains could further boost export activity.[6] Sentiment indicators for both manufacturing and services industries continue to be positive in their outlook for exports. The outlook for demand in our major trading partners based on the most recent external demand assumptions from the ECB indicates an improvement in trading partner demand for Ireland; however the pace of that improvement is marginally weaker than in the previous *Bulletin*. This is due to the knock-on effect of the relatively weak growth expectations for emerging market economies on global growth and to a fundamental re-appraisal of global trade growth, which has had a comparatively sluggish response to the economic recovery since the Great Recession. A potential emerging factor could be the higher level of uncertainty around the expected referendum on EU membership in the United Kingdom.

With these factors in mind, the latest projection is for overall export growth of 6.5 per cent for 2016 in volume terms, and 4.9 per cent in 2017. Our central assumption is that Irish export growth will respond more in line with trading partner demand by 2017, with goods exports growing at a faster pace than services over the forecast horizon. Given the firm and sector specific and geopolitical issues mentioned above, however, as well as the uncertainty about the scale of base effects from the strong 2015 performance, there is a high degree of uncertainty to the exports outlook, with risks currently judged to be somewhat tilted to the upside.

The fundamental factors underpinning import growth remain strong, but are anticipated to ease somewhat over this year and next. Both domestic demand and export growth are projected to slow over the forecast horizon. Consequently, a 6.9 per cent increase in the volume of imports is expected in 2016 followed

6 See S. Byrne and M. O'Brien (2015) "The Changing Nature of Irish Exports: Context, Causes and Consequences", Special Article in Central Bank of Ireland *Quarterly Bulletin* No.2.

Table 3: Balance of Payments 2015e, 2016f, 2017f

€ million	**2015e**	**2016f**	**2017f**
Trade Balance	43,332	47,512	51,405
Goods	61,561	67,885	73,452
Services	-18,229	-20,373	-22,046
Net Factor Income from the Rest of the World	-32,429	-35,331	-38,408
Current International Transfers	-2,736	-2,736	-2,736
Balance on Current Account	8,167	9,445	10,261
(% of GDP)	3.8	4.1	4.2

by a 4.4 per cent rise in 2017. As with the export outlook, there is increased uncertainty about the imports projection, where the base effect of the strong 2015 outturn could weigh on import growth this year. Given that the impacted categories of IP related imports account for approximately 45 per cent of all imports, risks to the import outlook are marginally to the downside.

Combined with the export outlook this implies a higher net export contribution to overall GDP growth compared with 2015, rising to 0.8 percentage points and 1.5 percentage points in 2016 and 2017 respectively, with some upside risk particularly for 2016.

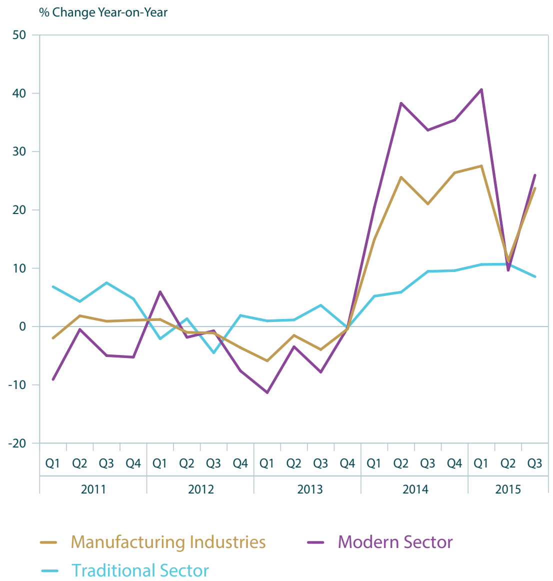
Net Trade, Factor Incomes and International Transfers

Despite the faster pace of growth in the volume of imports estimated for 2015, the trade balance is likely to have increased strongly to over 20 per cent of nominal GDP given the growth in the volume of exports and a strong improvement in the terms of trade. On the basis of the outlook for net exports discussed in the previous section, it is expected that the trade balance will rise further over this year and next to just over 21 per cent of GDP, as a surplus in goods trade continues to outweigh the services trade deficit, with the latter being subject to more downside (i.e. positive) risk.

Changes in net factor income flows have been dominated by the profits of non-financial multinational enterprises resident in Ireland, and particularly those headquartered here and receiving investment income inflows from overseas affiliates. This follows from the significant M&A activity and re-domiciling of multinational enterprises noted in the previous section. There was further evidence of such corporate restructuring in 2015, and announcements of future activity in this space which may well increase factor income inflows into Ireland over the forecast horizon. However, with the recent tendency of the domiciling of IP assets in Ireland for certain sectors, which may be indicative of a wider trend in response to domestic and global policy initiatives on corporations profit tax, there could be a higher level of factor income outflows in terms of dividends and retained earnings in future years.

Given the scale of factor income flows, the uncertainty of their timing, and the potential response of multi-national enterprises to changes in the global policy framework on corporations profit tax, small changes in outflows or inflows could have a significant impact on balance of payments projections in this *Bulletin*. Taking this into account, along with the trade developments noted above, the central projection implies a current account surplus of slightly above 4 per cent of GDP in both 2016 and 2017.

Chart 4: Volume of Industrial Production



Source: CSO.

Supply

The latest *Quarterly National Accounts* show growth in most sectors of the economy in the third quarter of 2015. In total, Gross Domestic Product expanded by 7 per cent compared with the same period in 2014. This expansion has been broad based, but the agricultural and industrial sectors performed particularly robustly, growing by 16 and 16.1 per cent respectively. Within the industrial sector, the transportable goods industries and utilities sub-sector grew by 17.9 per cent year-on-year in Q3. This sector, which is dominated by multinational corporations, was the biggest contributor to output in the economy in Q3 2015, accounting for just less than 25 per cent of GDP.

The latest high-frequency industrial production data are consistent with continued expansion in the latter part of 2015. The modern sector, which is dominated by the pharmaceutical and chemicals sectors, grew by 26 per cent year-on-year in the third quarter. The traditional sector also performed well in Q3 growing by 10.3 per cent year-on-year. The manufacturing sector grew by 23 per cent year-on-year in Q3.

More timely survey data point towards continued expansion in the period ahead. Both the Investec Purchasing Managers' Indices (PMI) and ESRI/KBC Consumer Sentiment Index have continued to improve over the past number of months. In the services sector, purchasing managers' responses in November indicated the sharpest rate of expansion, at 63.6, since June 2006 and confidence in the sector was boosted by growth in new business and new export orders. The CSO's Monthly Services Index expanded by 5 per cent year-on-year in October, driven principally by wholesale trade, and accommodation and food services. In the manufacturing sector, the PMI in November was 53.3, suggesting expansion, though the rate of growth has weakened slightly over the past few months. In addition, the most recent Bank Lending Survey for Ireland indicated that credit standards with respect to loans to enterprises were unchanged in the third quarter; though demand for loans, in particular loans to fund fixed investment, increased.

The Labour Market

The robust recovery in the labour market is expected to continue over the forecast horizon with employment projected to grow by 2.4 per cent in 2016 and by 1.9 per cent in 2017. In headline numbers this translates into an additional 85,000 persons in employment over the forecast period. This follows (estimated) growth in employment of 2.7 per cent (51,000 persons) in 2015, the fastest rate of increase since 2007. The outlook for employment remains favourable particularly given current and expected developments in domestic demand (see Box B for more details).

Numbers in the labour force are expected to exceed 2.2 million persons in 2017 following anticipated annual growth of about 1 per cent in 2016 and 2017. This combination of labour force and employment growth should see the

Table 4: Employment, Labour Force and Unemployment 2014, 2015e , 2016f and 2017f

	2014	2015e	2016f	2017f
Agriculture	109	111	113	114
Industry (including construction)	348	376	397	410
Services	1,458	1,479	1,504	1,528
Total Employment	**1,916**	**1,967**	**2,013**	**2,052**
Unemployment	241	203	179	164
Labour Force	2,157	2,170	2,192	2,215
Unemployment Rate (%)	11.2	9.4	8.2	7.4

Note: Figures may not sum due to rounding.

unemployment rate declining further towards an average rate of 7.4 per cent in 2017.

The *Quarterly National Household Survey* (QNHS) indicates that consistently strong gains in employment were recorded in 2015. Numbers at work increased by 2.7 per cent in the first three quarters of the year (to just fewer than 2 million persons). Numbers in full-time employment grew by nearly 4 per cent over the period. Gains in employment were also broad-based with 12 of the 14 sectors recording increases led by construction, manufacturing and most services sectors.

Labour force growth has lagged the recovery in employment with growth of 0.7 per cent estimated for 2015. The unemployment rate averaged 9.4 per cent in 2015, with the seasonally adjusted rate ending the year at 8.8 per cent, down from a peak of 15.2 per cent in January 2012.

Box B: Linking Employment to Underlying Economic Activity
By Diarmaid Smyth[7]

The labour market has rebounded strongly since mid-2012 with twelve consecutive quarters of rising employment translating into an additional 140,000 persons at work. Typically employment tends to lag GDP growth as employers wait for concrete evidence of an upturn in the economy before deciding to hire workers. In Figure 1, the annual growth rate in GDP is plotted against employment. The volatility in the GDP series both in an absolute sense but also relative to employment is apparent. In addition, while GDP tends to lead employment growth, there appears to have been some decoupling in the two series in recent years. This suggests that caution is needed in predicting employment growth based on GDP developments.

Much of the volatility in GDP reflects the activities of the multinational sector, which is a significant contributor to GDP but less important in terms of employment effects.[8] To better link labour market developments to 'job rich' economic activity, domestic demand growth is also included in Figure 1. The relationship between this series and employment also appears to have diminished in recent quarters. Two possible explanations spring to mind – first, the National Accounts (NIE) data could be revised – bringing domestic demand (and GDP) more in line with employment. Second, methodological changes in the NIE may have resulted in a breakdown in the normal link between demand and employment. This is explored in more detail below.

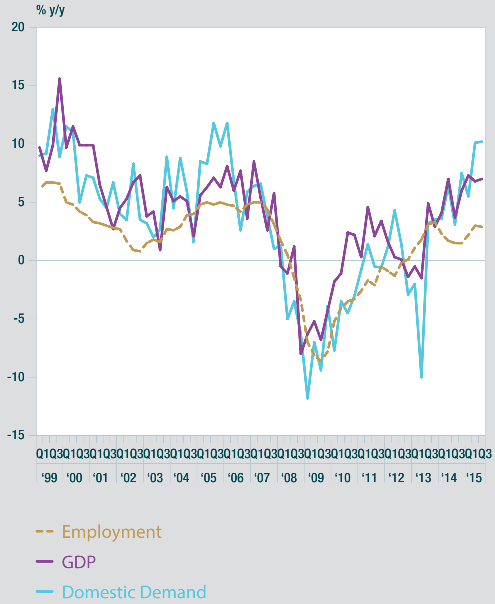
7 Irish Economic Analysis Division.

8 For example, in 2012, foreign owned enterprises accounted for 58.4 per cent of Gross Value Added and 22.5 per cent of employment in the business economy. See: http://www.cso.ie/en/media/csoie/releasespublications/documents/multisectoral/2012/businessinireland2012.pdf

Box B: Linking Employment to Underlying Economic Activity
By Diarmaid Smyth

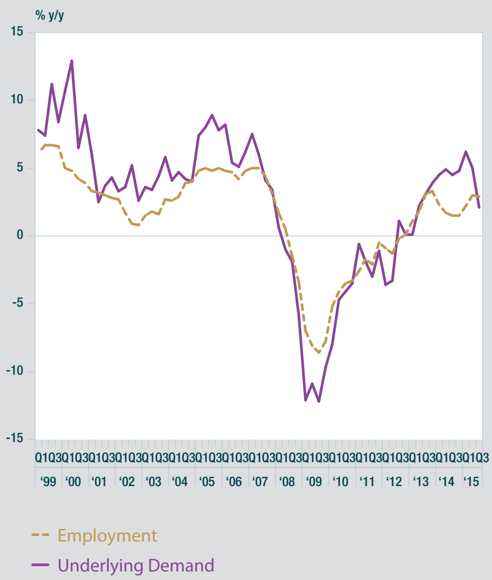
The movement to ESA 2010 resulted in significant changes to the NIE in Ireland. Investment spending in particular is now a much larger component of domestic demand with an upward revision of close to 20 per cent in NIE 2014. This reflects changes to the classification of both transport related and R&D type investment (see Box B, *Quarterly Bulletin* 4, 2015).[9] These changes may have contributed to a breakdown in the relationship between demand and employment. To explore this possibility further we define a series business investment, that is, overall investment less transport and intangibles related investment expenditures, and combine this with consumption and government spending. We refer to these three combined series as 'underlying domestic demand'. The growth in this aggregate appears to be more closely correlated with employment (Figure 2). If anything, one might expect a number of quarters of robust employment growth given the marked recovery in underlying demand in recent quarters.

Box B Fig 1: Employment and Demand



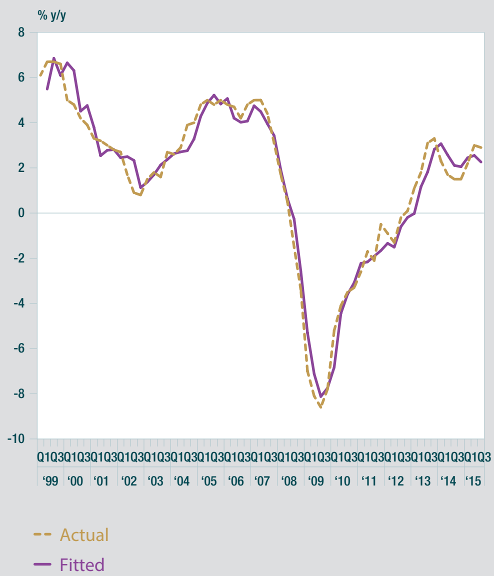
Source: CSO and author's calculations.

Box B Fig 2: Employment and Underlying Demand



Source: CSO and author's calculations.

Box B Fig 3: Actual and Fitted Employment using Underlying Demand



Source: CSO and author's calculations.

9 Partly as a result of methodological changes, the share of domestic demand accounted for by intangibles and transport related investment has been increasing – averaging 12 per cent in the most recent four quarters to 2015 Q2, up from a long-term average share of 7 per cent.

Box B: Linking Employment to Underlying Economic Activity
By Diarmaid Smyth

More formally, we find that underlying demand performs well in predicting employment growth in regressions linking employment to demand (Figure 3).[10] Including underlying demand in standard regression equations points to increases in employment of approximately 2.3 per cent in 2016, and 1.9 per cent in 2017. These results were considered, as well as a range of other factors, in formulating the labour market forecasts for this *Bulletin*.

10 Underlying demand fared better in predicting employment relative to equations with GDP and unadjusted domestic demand, based on the sample 1999 Q1 to 2015 Q3. A variety of estimation techniques (including VAR and ARDL approaches) were used. The fitted series in Figure 3 is based on a regression of employment growth on its own lag and underlying demand.

Pay

Compensation per employee is expected to rise by an average of 2.5 per cent per annum in 2016 and 2017, similar to the estimated rate of increase in 2015. Coupled with the outlook for employment detailed above, economy wide compensation is forecast to increase by 4.9 per cent this year and by 4.5 per cent in 2017.

Hourly earnings increased by 2.1 per cent in the year to September, based on the CSO's *Earnings and Labour Costs Survey*. This marked a fourth consecutive quarterly increase in hourly earnings with the rate of increase strengthening for a third consecutive quarter. Increases in hourly earnings were also relatively broad based across the sectors. More recent data from the end-year Exchequer returns also point to momentum in earnings with income tax returns up 7 per cent year-on-year in December 2015. Finally, survey evidence also points to higher wages in the near term.[11]

Inflation

Despite the improving domestic economy, overall inflation has remained subdued, due, for the most part, to external factors; falls in oil and commodity prices have been acting as a drag on price levels for much of the last two years. However, near zero headline inflation masks the underlying divergence in goods and services price developments. As expected, lower global commodity prices are feeding into lower goods price inflation. Services prices, on the other hand, are counterbalancing this with relatively strong positive increases. HICP inflation, excluding the energy component is thus higher than the headline rate.

The latest available inflation data indicate that the HICP recorded a year-on-year decrease of 0.1 per cent in November 2015. Negative HICP year-on-year inflation in the first four months of the year turned marginally positive as the year progressed, so that, on average, for the year to November 2015, the HICP was only slightly negative. As indicated, pressures coming from buoyant domestic economic activity – mainly on the services side - are being offset by lower commodity and, in particular, lower oil prices; at the time of writing, the price of Brent Crude oil had fallen to $37 a barrel – a decline of 18 per cent compared to the previous *Bulletin*.

Following on from flat HICP inflation in 2015, and on the basis of currently available information and prevailing oil futures prices, HICP inflation is expected to increase to 1 per cent in 2016, a downward revision of 0.5 per cent compared with the previous *Bulletin* – attributable mainly to the lower oil price assumptions. The CPI, which includes a mortgage interest component, is also expected to increase by 1 per cent in 2016. Reflecting strength in domestic demand, services inflation is projected to increase by 3.2 per cent in 2016. Goods price inflation, on the other hand is expected to decline by 1.3 per cent in 2016, driven in the main by lower energy, industrial goods and processed food prices.

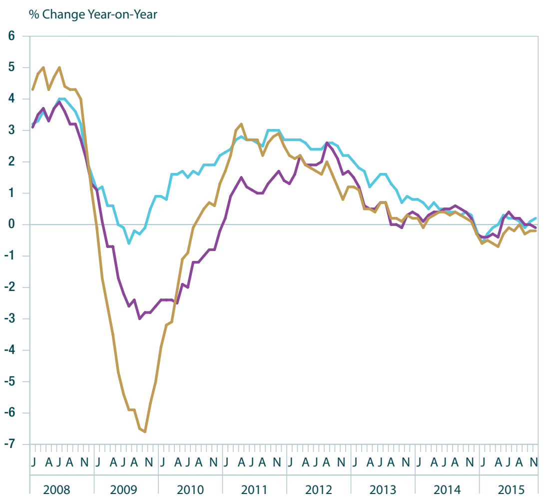
11 IBEC reported that 71 per cent of companies expected to increase basic pay in 2016, up from 67 per cent in 2015. See https://www.ibec.ie/IBEC/Press/PressPublicationsdoclib3.nsf/vPages/Newsroom~q4-outlook-ireland-unprepared-for-surging-growth-14-12-2015/$file/Ibec+2015+Q4+Economic+Outlook.pdf

Table 5: Inflation Measures - Annual Averages, Per Cent

Measure	HICP	HICP excluding Energy	Services[a]	Goods[a]	CPI
2011	1.2	0.0	0.8	1.5	2.6
2012	1.9	0.9	1.9	1.9	1.7
2013	0.5	0.6	1.6	-0.4	0.5
2014	0.3	0.6	2.4	-1.7	0.1
2015[e]	0.0	1.0	3.5	-3.4	0.0
2016[f]	1.0	1.7	3.2	-1.3	1.0
2017[f]	1.9	1.6	2.7	1.1	1.9

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

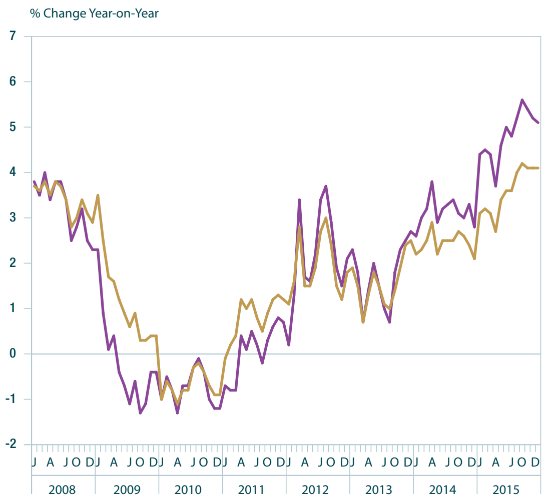
Chart 5: Consumer Prices



— Ireland: Consumer Price Index
— Ireland: Harmonised Index of Consumer Prices (HICP)
— EA-17: Monetary Union Index of Consumer Prices (MUICP)

Source: CSO.

Chart 6: Services Sector Inflation



— HICP Services (Overall) — HICP Core Services

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

Source: CSO.

In 2015, the downward pressure coming from lower global commodity prices was partially offset by depreciation in the euro, currencies relative to Ireland's main trading partners' currencies – the US dollar and the pound sterling; there was some strengthening of the euro in the later stages of 2015 and into 2016 partially reversing this upward pressure. All else being equal, a decline in the value of the euro serves to increase 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 1.4 and 3.6 per cent lower, respectively.

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. The most prominent driver of the projected recovery in goods inflation is expected to be the energy component, with oil prices assumed to recover modestly after the sharp falls seen in 2014/2015. Services inflation in 2017 is expected to moderate slightly from 3.2 per cent in 2016 to 2.7 per cent as domestic demand growth moderates. Core services inflation is expected to increase by close to 4.1 per cent in 2016, before slowing to 3.4 per cent in 2017. Reflecting this combination of developments, both HICP and CPI inflation are projected to rise to 1 per cent in 2016 and 1.9 per cent in 2017. The projected profile for headline HICP and CPI inflation is lower compared with the previous *Bulletin*, due for the most part to external assumptions.

Box C: Developments in nominal GDP and the GDP deflator

By Martin O'Brien[12]

Nominal GDP is likely to have grown by circa 12.5 per cent in 2015. While the bulk of this increase was reflected in volume growth, the general level of prices in the economy as measured by the GDP deflator, is also estimated to have made a significant contribution in rising by 5.6 per cent. This rise in the GDP deflator stands in contrast to the developments in consumer prices with the HICP being relatively unchanged and, at a first glance, the dynamics of the other main expenditure component deflators in the *National Accounts* (private and government consumption, investment, exports and imports). As the level of nominal GDP is a key input in measuring fiscal targets in the Stability and Growth Pact, as well as benchmarks for evaluating other issues such as credit growth or the labour share of income, it is informative to understand the drivers of the GDP deflator. In this Box we evaluate whether they have changed over time, and what are the implications for our understanding of economy wide price developments and nominal GDP.

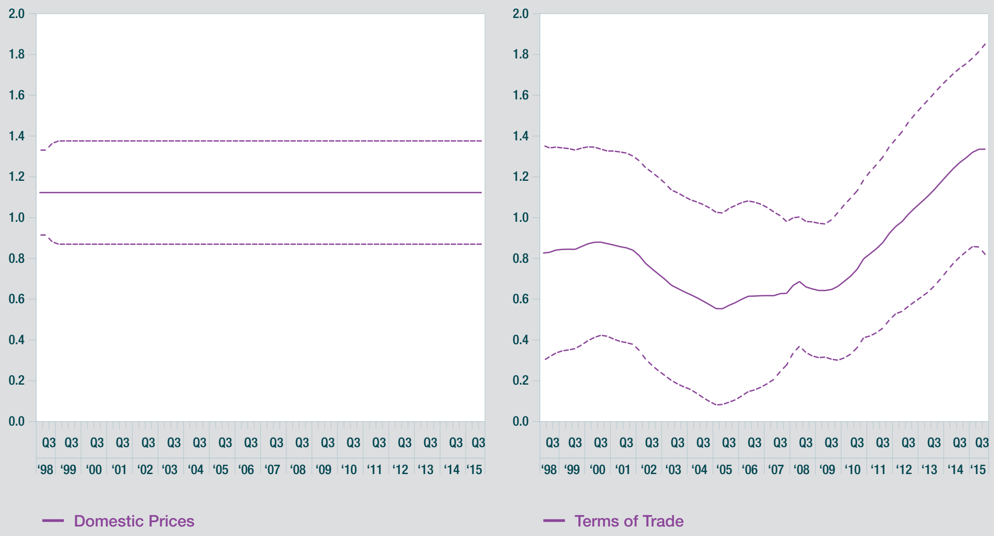
In broad terms, changes in the GDP deflator can be decomposed into the changes in domestic demand related prices (private and government consumption and investment) and the terms of trade (export prices expressed relative to import prices). We can use regression analysis to evaluate the relative importance of domestic and trade related price developments in determining the changes in the GDP deflator. Of particular interest is whether their relative importance has changed over time. Figure 1 shows the variation over time of the regression coefficient of year-on-year changes in domestic prices and the terms of trade in explaining contemporaneous changes in the GDP deflator.[13]

12 Irish Economic Analysis Division.

13 To conduct the analysis the following regression is estimated using maximum likelihood on quarterly data, t = 1998Q1-2015Q3: $\Delta YED_t = \alpha_t + \beta_{1t}\Delta DTD_t + \beta_{2t}\Delta TOT_t + \beta_{3t}\,\Delta YED_{t-1}$. YED is the GDP deflator, DTD is the domestic demand deflator, TOT is the terms of trade, which itself is equal to the export deflator divided by the import deflator, and Δ is the year-on-year percentage change in the variable. The estimation allows for the coefficients of interest on domestic prices (β_1) and terms of trade (β_2) to change over time to reflect any changes in the relative importance of each in explaining the year-on-year change in the GDP deflator.

Box C: Developments in nominal GDP and the GDP deflator
By Martin O'Brien[12]

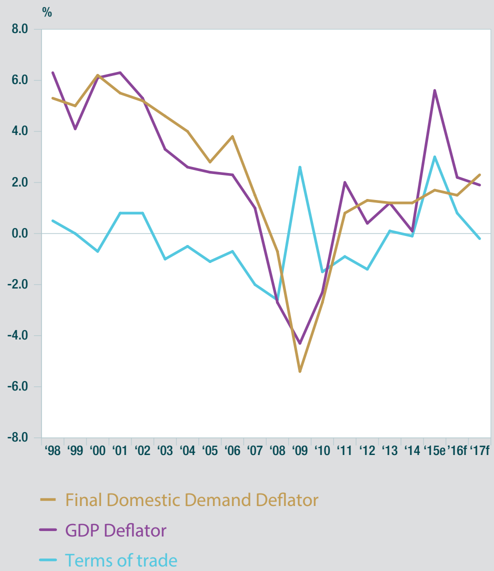
Box C Fig 1: Relative Importance of Domestic Prices and Terms of Trade on Changes in GDP Deflator



Source: Author's calculations based on data from the Quarterly National Accounts (CSO).
Dashed lines are confidence bands +/- 2 standard errors around the estimated coefficient.

As can be seen, the role of domestic prices in determining the GDP deflator has remained steady over time at just above 1 for 1, whereas the impact of changes in the terms of trade on the GDP deflator has risen in recent years. Towards the end of the sample, for every 1 per cent change in the terms of trade, the GDP deflator changes by approximately 1.3 per cent. This in part explains the GDP deflator increase in 2015 being so large relative to the changes in domestic prices and the terms of trade. It also compounds the impact arising from the strong increase in the terms of trade likely to have been registered in 2015 (Figure 2). The increasing importance of the terms of trade in explaining GDP deflator dynamics corresponds with the rising share of trade in nominal GDP in recent years, as the share of domestic demand has fallen marginally (Figure 3).

Box C Fig 2: Change in Domestic Prices, Terms of Trade and GDP Deflator



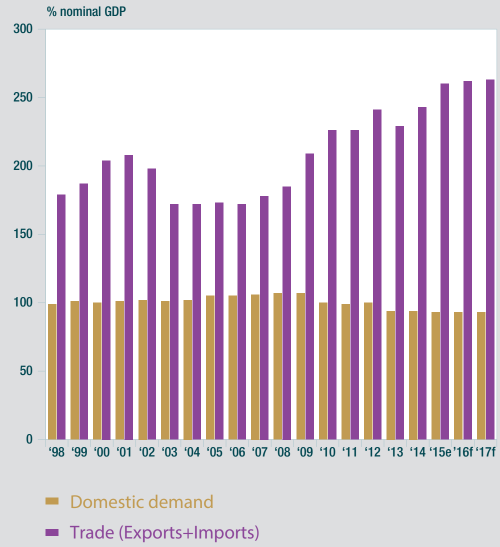
Source: Author's calculations based on data from the Quarterly National Accounts (CSO) and Central Bank of Ireland forecasts.

Box C: Developments in nominal GDP and the GDP deflator
By Martin O'Brien[12]

Given that the dynamics of the terms of trade are increasingly important in explaining changes in the GDP deflator, it is informative to examine what factors underlie developments in the terms of trade itself, and in particular how much of these are in any way controlled domestically or driven by external factors. There are a number of factors that can reasonably be expected to determine export and import prices and consequently the terms of trade. Initially we can consider the role of the euro exchange rate. The US dollar is particularly relevant here as a significant portion of Irish trade is denominated in dollars. Also the price of oil in euro terms can be considered a proxy for global commodity prices which affect the price of imports directly and the price of exports indirectly. Similarly, a broader measure of relative costs in our trading partner economies can be expected to impact export prices directly and import prices indirectly.

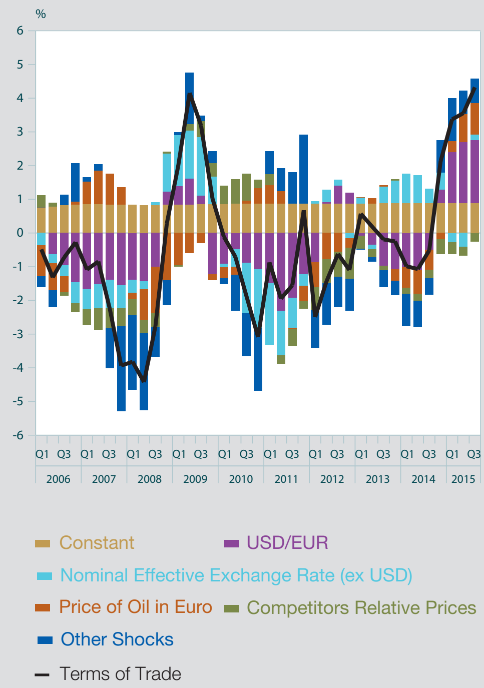
To examine the relative role of these factors more formally we can analyse the historical decomposition of the terms of trade series following a vector autregression (VAR) analysis including these variables and other shocks which are not identified by the model (Figure 4).[14] The decomposition shows the influence of shocks to the variables in the system on the change in the terms of trade. Dynamics in the terms of trade tend to be significantly affected by developments in the euro/USD exchange rate and the price of oil. This was particularly the case in 2015, where both the appreciation of the USD and the large fall in the price of oil both contributed to the faster pace of growth in the terms of trade.

Box C Fig 3: Domestic Demand and Trade as a Proportion of Nominal GDP



Source: Author's calculations based on data from the Quarterly National Accounts (CSO) and Central Bank of Ireland forecasts.

Box C Fig 4: Historical Decomposition of the Terms of Trade



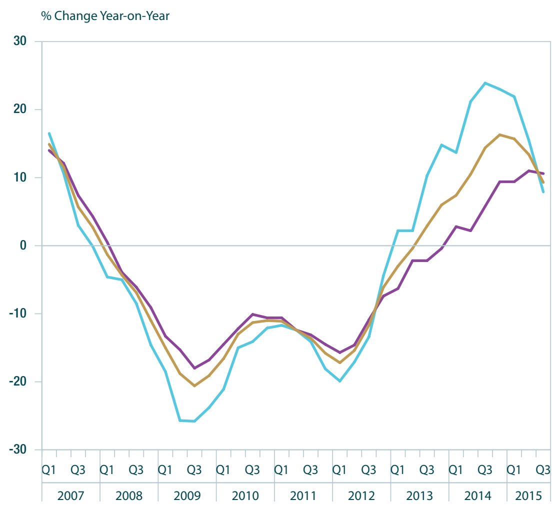
Source: Author's calculations.

14 The VAR is estimated over 1998 Q1-2015 Q3 and includes the year-on-year percentage change in the terms of trade, the USD/euro exchange rate, the trade-weighted nominal effective exchange rate (excluding USD), the price of oil in euro terms (Brent crude), and the trade-weighted relative consumer price index. The system included two lags of each variable as per the Akaike Information Criterion, and is identified using a simple recursive scheme (Cholesky), where any variables that are in part determined domestically (trade-weighted relative consumer price index and the terms of trade) do not contemporaneously affect globally determined variables.

Box C: Developments in nominal GDP and the GDP deflator
By Martin O'Brien[12]

As a result, the rising terms of trade, driven by globally determined factors such as the euro/USD exchange rate and the price of oil, led to the increase in the GDP deflator witnessed in 2015. Aside from the 2015 development itself, the role of these external factors in determining the GDP deflator has become more important than domestically determined prices over recent years. Given that the GDP deflator is now more responsive to globally determined factors, it adds a further element of uncertainty for domestic policy makers on the future path for nominal GDP when evaluating issues such as the fiscal deficit and debt ratios. Understanding the relative importance of these global factors on the GDP deflator also provides important context for backward looking indicators using nominal GDP for policy analysis, such as the credit-to-GDP gap when framing the countercyclical capital buffer.

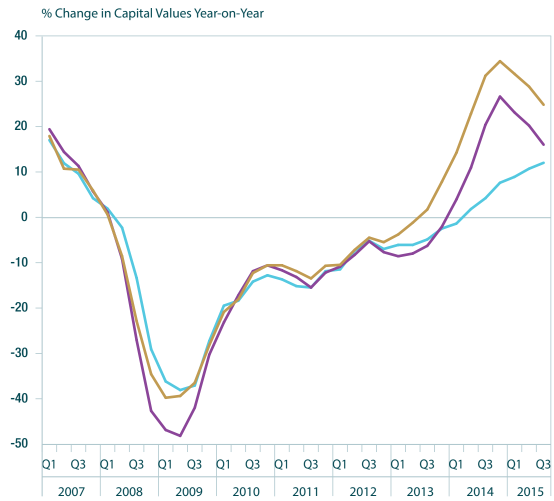
Chart 7: Residential Property Price Indices



— National – All Residential Properties
— National Excluding Dublin – All Residential Properties
— Dublin – All Residential Properties

Source: CSO.

Chart 8: SCS/IPD Irish Commercial Property Index



— Office — Retail — Industrial

Source: SCS/IPD.

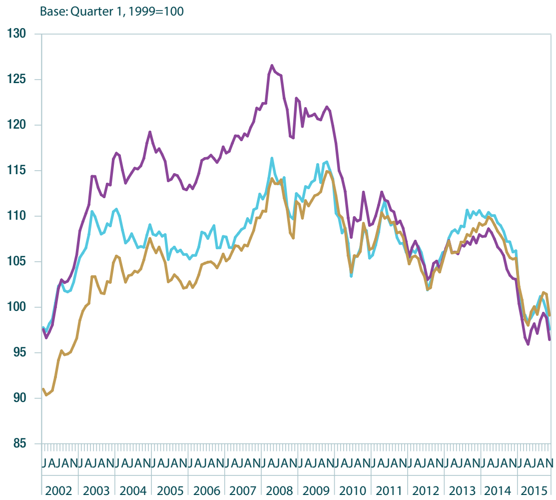
Residential Property

Residential property prices continued to increase in the final months of 2015, although the rate of growth moderated compared with the start of the year. In November, the latest month for which data is available, prices grew nationally by 6.5 per cent compared with the same month in 2014. The moderation in price increases has been most noticeable in the Dublin region, where prices grew by 3.3 per cent year-on-year. Outside of Dublin, prices grew by 9.6 per cent. Apartment prices are growing faster than house prices at 7.4 per cent nationally, but there are a low volume of transactions underlying this data and as such it is prone to volatility. Given increasing demand supported by the more favourable labour market, supply constraints are placing upward pressure on prices. Department of Environment statistics show that 10,052 houses were completed in the year to October 2015. Building commencements, a key leading indicator of supply, totalled 7,016 by October 2015.

Commercial Property

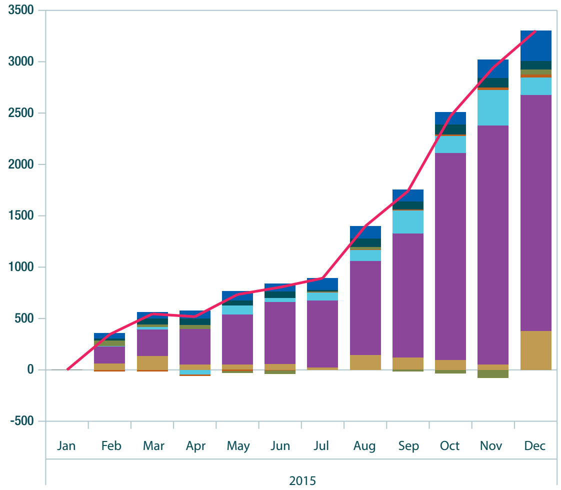
The latest data from the Society of Chartered Surveyors/Investment Property Databank show that commercial property prices

Chart 9: Harmonised Competitiveness Indicators



Source: Central Bank of Ireland and ECB.

Chart 10: Divergence of Tax Heads from Profile



Source: Department of Finance.

continued to grow strongly in the third quarter of 2015. Growth is strongest in the office and retail sectors, at 24.9 and 16.1 per cent, respectively. In the industrial sector, year-on-year growth of 16.1 per cent was recorded in Q3 2015. Overall commercial property prices expanded by 21.7 per cent year-on-year. The Bank's latest Macrofinancial Review (December 2015) conducts a detailed analysis of recent developments in the commercial property sector.

Competitiveness

The euro has remained weak relative to the US dollar and the pound sterling over the past number of quarters. As of the 1st of January 2016, the dollar exchange rate was $1.08 and had stabilised around this level in Q4 2015. In year-on-year terms, the euro has declined against the dollar by 10 per cent. The situation is similar for the euro against the pound as the rate was at £0.74 on the 1st January 2016 – down over 6 per cent on a year-on-year basis.

The latest Harmonised Competitiveness Index (HCI) data for November 2015 show that the nominal HCI depreciated by 5.8 per cent on a year-on-year basis. When deflated by consumer prices and producer prices, the real HCI decreased by 6.5 per cent and 8 per cent, respectively, over the same period. These HCI developments, which suggest an improvement in competiveness, largely reflect movements in the exchange rate.

On the basis of the conventional GDP per worker measure, productivity is estimated to have increased by 3.2 per cent in 2015. Looking ahead, average annual productivity growth of 2.4 per cent (on a GDP per worker basis) for 2016 and 2017, respectively.

Factoring in the projected increases in compensation of employees over the forecast horizon, unit labour costs are expected to fall by 1.4 per cent in 2016 and then remain unchanged in 2017.

The Public Finances

Overview

Government Finance Statistics reveal that the general government deficit and debt declined in the first half of 2015. Exchequer returns data, meanwhile, point to the positive trend continuing in the second half of the year; tax revenue surpassed Department of Finance expectations by €3.3 billion for the year as a whole, led by rapid growth in corporation tax receipts (see Box D), more than compensating for above profile expenditure. These developments effectively confirm that the 2015 EDP budget target – a general government deficit below 3 per cent of GDP – was met comfortably. A notable further decline in the public debt ratio is also anticipated following further divestment by the State of banking assets.

Exchequer Returns[15]

The latest data reveal that the Exchequer deficit was halved in 2015, declining from €7.6 to €3.8 billion over the course of 12 months (see Table 6). This outturn was substantially better than expected at the time of the last Budget. While an improvement over the period was anticipated, the Exchequer balance was a notable €2.3 billion ahead of profile as favourable revenue developments outweighed higher than budgeted expenditure.

Tax revenue continued to outperform expectations in the final quarter of the year, led by developments in corporation tax. Total taxes ended the year 10.5 per cent higher in year-on-year terms and were €3.3 billion (7.8 per cent) ahead of profile, as receipts surpassed the €45 billion threshold for the first time since 2007. As Chart 10 shows the tax over-performance strengthened over the course of the year, increasing from €1 billion at the end of June and €2.4 billion at the end of Q3. Two-thirds of this over-performance reflected corporation taxes, which increased by 49 per cent to surpass their pre-crisis level. The other three of the 'big four' tax heads – income tax, VAT and excise duties also grew robustly, with income tax 7 per cent higher in annual terms as the labour market continued to recover. Non-tax revenues were also stronger than expected in 2015, albeit by a much more modest amount, led by developments in PRSI, again highlighting the labour market recovery (8 per cent growth, €239 million ahead of profile). Central Bank surplus income increased by €500 million in 2015, although around half of this does not impact the general government balance (but will improve the debt ratio).

These favourable revenue developments were partly offset by above profile expenditure, following supplementary spending undertaken in the final months of the year. Total expenditure increased 0.5 per cent on an annual basis and was €1.2 billion above profile. In gross terms, both current primary and capital spending increased, with the biggest overruns coming in Health and Social Protection. Higher than anticipated EU Budget contributions also contributed to the overrun. Interest expenditure, by comparison, was sharply weaker in annual terms, reflecting the earlier repayment of IMF Programme loans and more favourable market conditions. Overall the Exchequer data suggest that the positive general government trends observed in the first half of the year, strengthened as 2015 progressed.

Box D: Corporation Tax Receipts in 2015
By Reamonn Lydon, Diarmaid Smyth and Graeme Walsh[16]

In 2015, Corporation Tax (CT) receipts overshot the expected profile set at the beginning of the year by €2.3 billion (Figure 1). The 49 per cent annual increase recorded was one of the driving forces behind a very positive fiscal performance in 2015. For forecasters and policy makers, an overshoot of this scale prompts an important question, namely: why did it occur, and how does it impact on future forecasts?

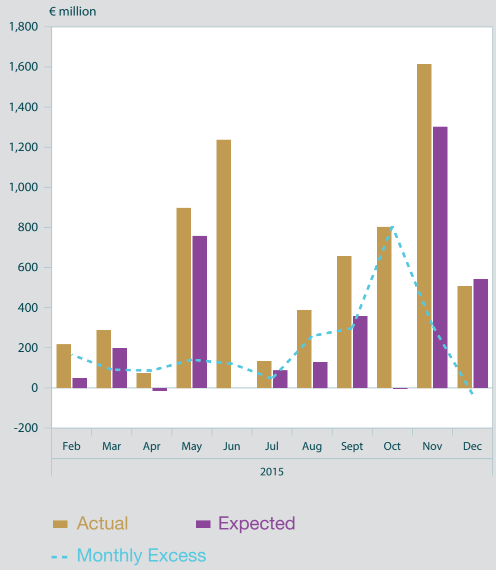
16 Irish Economic Analysis Division

15 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.

Box D: Corporation Tax Receipts in 2015
By Reamonn Lydon, Diarmaid Smyth and Graeme Walsh[16]

From a forecasting perspective, the overshoot could be due to several factors. For example, firms' profits may have been higher than expected or there may have been a fundamental shift in the relationship between profits and taxes paid. Forecasts generally include a judgemental component, and it is possible that this judgement turned out to be too conservative *ex-post*. In order to assess the impact on the forecast of the changing economic climate, we estimate a time-series model which relates monthly CT receipts to the monthly industrial production index (IP).[17] We use this index as it is published at a short lag by the CSO (usually just over one month) and therefore provides potentially useful and timely information on firm activity as the year progresses. Historically this index tends to closely track other variables that can be used to forecast CT receipts, such as GDP and gross operating surplus (GOS).[18]

Box D Fig 1: Monthly Corporation Tax Receipts in 2015



Source: Department of Finance.

On the basis of forecast comparisons from different models (see appendix) our preferred specification relates CT receipts to the IP index for the ICT sector. A dynamic forecast for 2015, incorporating the outturn for IP ICT, predicts total receipts for 2015 of €5.8 billion, still some €1.05 billion below the outturn. Comparing this to the €2.3 billion figure above suggests that a significant proportion of the overshoot (54 per cent) can be explained by firms' profits being significantly higher than expected at the beginning of the year.

The model undershoot can be interpreted as the portion of revenues not accounted for by the statistical and economic (via the proxy) information in the model. It should also be noted that tax forecasts might also be expected to include a judgemental component, such as for example, information on upcoming events (not captured in historical data) which we have not included.[19]

Appendix: Econometric model of monthly Corporate Tax receipts

CT forecasts can be updated throughout the year by combining monthly CT data with proxies for activity or profits in the corporate sector, such as IP indices. We also considered a range of other potential explanatory variables, including exchange rates, exports and competitiveness indicators. The models are specified so as to capture the dynamics of the data, including seasonal variation, whilst also picking up the impact of current trends in the economic variables.

We estimated four ARIMA models using monthly data from 1984M01 to 2015M11. The dependent variable in each is the log of CT receipts and we include seasonal controls. Using the r-squared, root mean squared errors and Theil's U-statistics to inform our forecast comparisons, model 4, which related CT receipts to output in the ICT sector, is our preferred model. In this exercise, our preferred choice of specification is a pragmatic one; however, in recognition of model uncertainty, models containing more broad-based measures, and, indeed, combinations of models, are also likely to be informative.

17 Details of the model, which includes controls for seasonality, are shown at the end of this box.

18 For details see: http://s3.amazonaws.com/zanran_storage/www.finance.gov.ie/ContentPages/8987749.pdf.

19 For details see (IFAC 2015).

Box D: Corporation Tax Receipts in 2015
By Reamonn Lydon, Diarmaid Smyth and Graeme Walsh[16]

Box D, Table 1: Coefficients on Industrial Production in the four models

	Model 1	Model 2	Model 3	Model 4
IP index manufacturing (10 to 33)	1.09 (5.54)			
IP index modern (18.2, 20, 21, 26, 27, 325)		0.61 (5.39)		
IP index pharm/chem (20, 21)			0.33 (2.45)	
IP index ICT (26, 27)			0.52 (2.84)	0.79 (4.98)
Sample	1984m01 to 2015m11			
R-squared	0.78	0.78	0.78	0.79
Theil's U-stat	0.25	0.29	0.21	0.14

Table 6: Analytical Exchequer Statement for December 2015 (€ millions)

	Jan-Dec 2014 €m	Jan-Dec 2015 €m	Annual Change	Outturn vs Profile
Revenue	**56,041**	**60,160**	**7.4%**	**6.2%**
– Tax revenue	41,282	45,601	10.5%	7.8%
– Appropriations-in-aid	11,781	11,807	0.2%	1.9%
– Other Revenue	2,978	2,751	-7.6%	0.5%
Expenditure	**63,635**	**63,949**	**0.5%**	**1.9%**
– Current Primary Expenditure	52,602	53,131	1.0%	3.3%
– Capital Expenditure	3,562	3,839	7.8%	5.7%
– Interest on National Debt	7,471	6,979	-6.6%	-9.3%
Exchequer Balance	**-7,594**	**-3,789**	**-50.1%**	**-38.2%**

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.

Funding and Other Developments

In December the State received €1.6 billion in cash following the redemption of AIB's Preference share, bringing the total amount of revenue generated from banking divestments to around €3.5 billion in 2015. While this revenue is not deficit improving it will have a favourable impact on the gross debt position. The final quarter of the year also saw the National Treasury Management Agency (NTMA) raise €1 billion in a 15-year bond auction and cancel a further €1 billion of floating rate Treasury bonds. The NTMA has announced it intends to issue €6–10 billion of long term bonds over the course of 2016. In 2015 it issued a total of €13 billion while also repaying 80 per cent of Ireland's IMF loan facility early.