

# Quarterly Economic Commentary

David Duffy  
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Winter 2015



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The Quarterly Economic Commentary analyses current economic trends and provides macro-economic forecasts for the current and following year. It assesses international economic prospects and provides short-term forecasts in the framework of a consistent set of national accounts for Ireland. Its wide range of users includes government departments, policymakers, social partners, international organisations, academics and the national and international financial sectors.

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The forecasts in this *Commentary* are based on data available by 11 December 2015. Draft completed 11 December 2015.

## Special Articles

A subscription to the *Quarterly Economic Commentary* costs €327 per year, including VAT and postage.

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The *Quarterly Economic Commentary* has been accepted for publication by the Institute, which does not itself take institutional policy positions. It has been peer reviewed by ESRI research colleagues prior to publication. The authors are solely responsible for the content and the views expressed.

*Special Articles* are published in the *QEC* in order to foster high-quality debate on various aspects of the Irish economy and Irish economic policy. They are subject to refereeing prior to publication.

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## Summary Table

	2012	2013	2014	2015	2016
<b>Output (Real Annual Growth %)</b>					
Private Consumer Expenditure	-0.8	-0.3	2.0	3.6	3.4
Public Net Current Expenditure	-2.2	1.4	4.6	1.3	1.0
Investment	8.6	-6.6	14.3	27.2	19.2
Exports	2.1	2.5	12.1	13.1	7.6
Imports	2.9	0.0	14.7	15.7	10.1
Gross Domestic Product (GDP)	0.2	1.4	5.2	6.7	4.8
Gross National Product (GNP)	1.6	4.6	6.9	5.2	5.3

<b>Prices (Annual Growth %)</b>					
Consumer Price Index (CPI)	1.7	0.5	0.2	-0.1	1.0
Growth in Average Hourly Earnings	0.2	-0.4	1.7	2.0	2.3

<b>Labour Market</b>					
Employment Levels (ILO basis (000s))	1,842	1,880	1,914	1,967	2,018
Unemployment Levels (ILO basis (000s))	316	282	243	200	173
Unemployment Rate (as % of Labour Force)	14.7	13.0	11.3	9.3	7.9

<b>Public Finance</b>					
General Government Balance (€ bn)	-14.1	-10.2	-7.3	-2.3	-1.2
General Government Balance (% of GDP)	-8.0	-5.7	-3.9	-1.1	-0.5
General Government Debt (% of GDP)	120.2	120.0	107.5	94.9	86.7

<b>External Trade</b>					
Balance of Payments Current Account (€ bn)	-2.7	5.6	6.8	11.6	14.5
Current Account (% of GNP)	-1.5	3.1	3.6	5.4	6.2

<b>Demand</b>					
Final Demand	1.5	0.9	9.4	11.1	7.5
Domestic Demand	0.7	-1.2	5.7	8.4	7.4
Domestic Demand (excl. Stocks)	1.0	-1.5	5.2	8.8	7.4

## National Accounts 2014

### A: Expenditure on Gross National Product

	2013	2014	Change in 2014		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	85.7	89.0	3.8	1.7	2.0
Public Net Current Expenditure	26.1	27.2	4.3	-0.2	4.6
Gross Fixed Capital Formation	31.7	36.5	15.3	0.8	14.3
Exports of Goods and Services	191.4	215.0	12.3	0.2	12.1
Physical Changes in Stocks	0.8	1.9			
<b>Final Demand</b>	<b>335.7</b>	<b>369.6</b>	<b>10.1</b>	<b>0.7</b>	<b>9.4</b>
less:					
Imports of Goods and Services	156.8	180.3	15.0	0.3	14.7
Statistical Discrepancy	0.5	-0.2			
<b>GDP at Market Prices</b>	<b>179.4</b>	<b>189.0</b>	<b>5.3</b>	<b>0.1</b>	<b>5.2</b>
Net Factor Payments	-27.4	-26.2			
<b>GNP at Market Prices</b>	<b>152.0</b>	<b>162.9</b>	<b>7.1</b>	<b>0.2</b>	<b>6.9</b>

### B: Gross National Product by Origin

	2013	2014	Change in 2014	
	€ bn	€ bn	€ bn	%
Agriculture	3.2	3.4	0.2	6.4
Non-Agriculture: Wages, etc.	67.7	70.0	2.4	3.5
Other	64.0	68.4	4.4	6.9
Adjustments: Stock Appreciation	0.6	-0.3		
Statistical Discrepancy	-0.5	0.2		
<b>Net Domestic Product</b>	<b>135.0</b>	<b>141.9</b>	<b>6.8</b>	<b>5.0</b>
Net Factor Payments	-27.4	-26.2	1.2	-4.5
<b>National Income</b>	<b>107.6</b>	<b>115.7</b>	<b>8.0</b>	<b>7.5</b>
Depreciation	28.4	29.3	0.9	3.3
<b>GNP at Factor Cost</b>	<b>136.0</b>	<b>145.0</b>	<b>9.0</b>	<b>6.6</b>
Taxes less Subsidies	16.0	17.9	1.9	11.6
<b>GNP at Market Prices</b>	<b>152.0</b>	<b>162.9</b>	<b>10.8</b>	<b>7.1</b>

### C: Balance of Payments on Current Account

	2013	2014	Change in 2014
	€ bn	€ bn	€ bn
X – M	34.6	34.9	0.2
F	-27.4	-26.2	1.2
Net Transfers	-2.9	-2.7	0.2
<b>Balance on Current Account</b>	<b>4.3</b>	<b>6.0</b>	<b>1.6</b>
as % of GNP	2.8	3.7	1.0

## National Accounts 2015

### A: Expenditure on Gross National Product

	2014	2015	Change in 2015		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	89.0	92.6	4.1	0.5	3.6
Public Net Current Expenditure	27.2	28.2	3.4	2.0	1.3
Gross Fixed Capital Formation	36.5	46.9	28.5	1.0	27.2
Exports of Goods and Services	215.0	259.0	20.5	6.6	13.1
Physical Changes in Stocks	1.9	1.0			
<b>Final Demand</b>	<b>369.6</b>	<b>427.6</b>	<b>15.7</b>	<b>4.1</b>	<b>11.1</b>
less:					
Imports of Goods and Services	180.3	214.4	18.9	2.8	15.7
Statistical Discrepancy	-0.2	-0.2			
<b>GDP at Market Prices</b>	<b>189.3</b>	<b>213.2</b>	<b>12.6</b>	<b>5.5</b>	<b>6.7</b>
Net Factor Payments	-26.2	-30.5			
<b>GNP at Market Prices</b>	<b>162.9</b>	<b>182.0</b>	<b>11.7</b>	<b>6.2</b>	<b>5.2</b>

### B: Gross National Product by Origin

	2014	2015	Change in 2015	
	€ bn	€ bn	€ bn	%
Agriculture	3.4	3.4	0.0	1.0
Non-Agriculture: Wages, etc.	70.0	73.5	3.4	4.9
Other	68.4	92.0	23.6	34.5
Adjustments: Stock Appreciation	-0.3	-0.3		
Statistical Discrepancy	0.2	0.2		
<b>Net Domestic Product</b>	<b>141.9</b>	<b>168.9</b>	<b>27.1</b>	<b>19.1</b>
Net Factor Payments	-26.2	-31.0	-4.8	18.5
<b>National Income</b>	<b>115.7</b>	<b>137.9</b>	<b>22.2</b>	<b>19.2</b>
Depreciation	29.3	25.0	-4.3	-14.7
<b>GNP at Factor Cost</b>	<b>145.0</b>	<b>162.9</b>	<b>17.9</b>	<b>12.3</b>
Taxes less Subsidies	17.9	19.1	1.2	6.7
<b>GNP at Market Prices</b>	<b>162.9</b>	<b>182.0</b>	<b>19.1</b>	<b>11.7</b>

### C: Balance of Payments on Current Account

	2014	2015	Change in 2015
	€ bn	€ bn	€ bn
X – M	34.9	44.5	9.7
F	-26.2	-31.0	-4.8
Net Transfers	-2.7	-2.7	0.0
<b>Balance on Current Account</b>	<b>6.0</b>	<b>10.8</b>	<b>4.8</b>
as % of GNP	3.7	5.9	2.7



## National Accounts 2016

### A: Expenditure on Gross National Product

	2015	2016	Change in 2016		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	92.6	96.7	4.4	1.0	3.4
Public Net Current Expenditure	28.2	28.9	2.8	1.8	1.0
Gross Fixed Capital Formation	46.9	57.4	22.3	2.6	19.2
Exports of Goods and Services	259.0	290.9	12.3	4.4	7.6
Physical Changes in Stocks	1.0	1.0			
<b>Final Demand</b>	<b>427.6</b>	<b>474.9</b>	<b>11.1</b>	<b>3.3</b>	<b>7.5</b>
less:					
Imports of Goods and Services	214.4	242.4	13.0	2.7	10.1
Statistical Discrepancy	-0.2	-0.2			
<b>GDP at Market Prices</b>	<b>213.2</b>	<b>232.5</b>	<b>9.1</b>	<b>4.0</b>	<b>4.8</b>
Net Factor Payments	-31.0	-32.0			
<b>GNP at Market Prices</b>	<b>182.0</b>	<b>200.3</b>	<b>10.1</b>	<b>4.5</b>	<b>5.3</b>

### B: Gross National Product by Origin

	2015	2016	Change in 2016	
	€ bn	€ bn	€ bn	%
Agriculture	3.4	3.5	0.1	2.5
Non-Agriculture: Wages, etc.	73.5	77.1	3.7	5.0
Other	92.0	104.7	12.7	13.8
Adjustments: Stock Appreciation	-0.3	-0.3		
Statistical Discrepancy	0.2	0.2	0.0	0.0
<b>Net Domestic Product</b>	<b>168.9</b>	<b>185.3</b>	<b>16.4</b>	<b>9.7</b>
Net Factor Payments	-31.0	-32.0	-1.0	3.2
<b>National Income</b>	<b>137.9</b>	<b>153.3</b>	<b>15.4</b>	<b>11.2</b>
Depreciation	25.0	26.5	1.5	6.0
<b>GNP at Factor Cost</b>	<b>162.9</b>	<b>179.8</b>	<b>16.9</b>	<b>10.4</b>
Taxes less Subsidies	19.1	20.4	1.4	7.3
<b>GNP at Market Prices</b>	<b>182.0</b>	<b>200.3</b>	<b>18.3</b>	<b>10.1</b>

### C: Balance of Payments on Current Account

	2015	2016	Change in 2016
	€ bn	€ bn	€ bn
X – M	44.5	48.5	3.9
F	-31.0	-32.0	-1.0
Net Transfers	-2.7	-2.7	0.0
<b>Balance on Current Account</b>	<b>10.8</b>	<b>13.7</b>	<b>2.9</b>
as % of GNP	5.9	6.9	1.5



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## The Irish Economy - Forecast Overview and Summary

The Irish economy is set to register a substantial growth performance in 2015 with the expected 6.7 per cent year-on-year increase in output unsurpassed since 2005. While the Irish recovery has benefitted from a weak Euro and strong economic performance amongst key trading partners, it is noteworthy, particularly given a variety of countervailing factors; the ongoing difficulties in the Irish financial sector, the related low levels of credit extended, the persistent high levels of private sector debt and the anaemic performance of many European economies since 2010.

The Nowcasting model (summarised in the Appendix) indicates that the economy grew by 6.8 per cent during 2015 with the highest rates of growth occurring in Q2 and Q3. Based on the strong performance through the year, we also revise upwards our outlook for 2016 with an expected output growth rate now of 4.8 per cent.

While investment began to contribute to the Irish recovery in 2014, private consumption saw a significant increase in 2015 with expenditure on items such as motor cars, retail sales and household goods registering the largest year-on-year growth. This increase in expenditure occurred as the overall burden of household debt in the Irish economy fell back to 2006 levels. Notwithstanding this increase, the level of consumption in real terms in 2015 is still set to be less than that which prevailed in 2008.

External trade is likely to continue as a significant source of growth in 2016, however we note a number of potential downside risks in that regard. The OECD, amongst others, is concerned about the performance of key emerging economies in 2016, while any unwinding of the ongoing vulnerabilities in the Chinese economy could have serious implications for key Irish trading partners such as the United States, the United Kingdom and Europe. Next year may also see a referendum in the UK on its membership of the European Union. The recent report by the ESRI,<sup>1</sup> which teases out some of the likely implications of a British withdrawal, illustrates the negative trade implications for the Irish economy of such a development.

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<sup>1</sup> Barret, A., A. Bergin, J. FitzGerald, D. Lambert, D. McCoy, E. Morgenroth, I. Siedschlag and Z. Studnika (2015). *Scoping the Possible Economic Implications of Brexit on Ireland*. ESRI, available at [www.esri.ie](http://www.esri.ie).

In the Autumn *Commentary* we outlined our view that a neutral budgetary strategy was the optimal policy to follow, especially given the strong growth rates evident in the economy. This was framed against the official position announced in the Stability Programme Update (SPU) in May that there would be a €1.5 billion stimulatory package split evenly between expenditure and taxation. However, it was particularly disappointing that the degree of the expansionary package was compounded by the greater than expected current Government expenditure in 2015 announced just prior to the budget. This suggests that the Government is putting almost €2.8 billion into the Irish economy at a time of already significant growth.

In light of the remarkable growth rates for 2014 and 2015, in the domestic section of the *Commentary*, we tease out the actual output levels vis-à-vis potential in the Irish economy at present. While unemployment at 9 per cent would suggest that there is still a large degree of spare capacity, current rates of productivity (both total factor and labour) are particularly high. Were these rates to converge back to long-run trends, as is likely, particularly as greater factor inputs are employed in the economy, then the degree of spare capacity would not be as large as previously thought. Consequently, in 2015, we believe a negative output gap of 1 per cent exists.

Finally, as with a number of recent *Commentaries*, we devote some attention to the housing market. Recent research<sup>2</sup> suggests that it may take up to three years for supply in the Irish market to reach the underlying structural demand of approximately 25,000 units per annum. However, it is also clear that the targets for social housing set out in Social Housing 2020 (2014)<sup>3</sup> for the period 2015-2018 are also unlikely to be met. One possible way of achieving a significant increase in social housing provision is for the State to provide this through local authority schemes as it used to prior to 2009.

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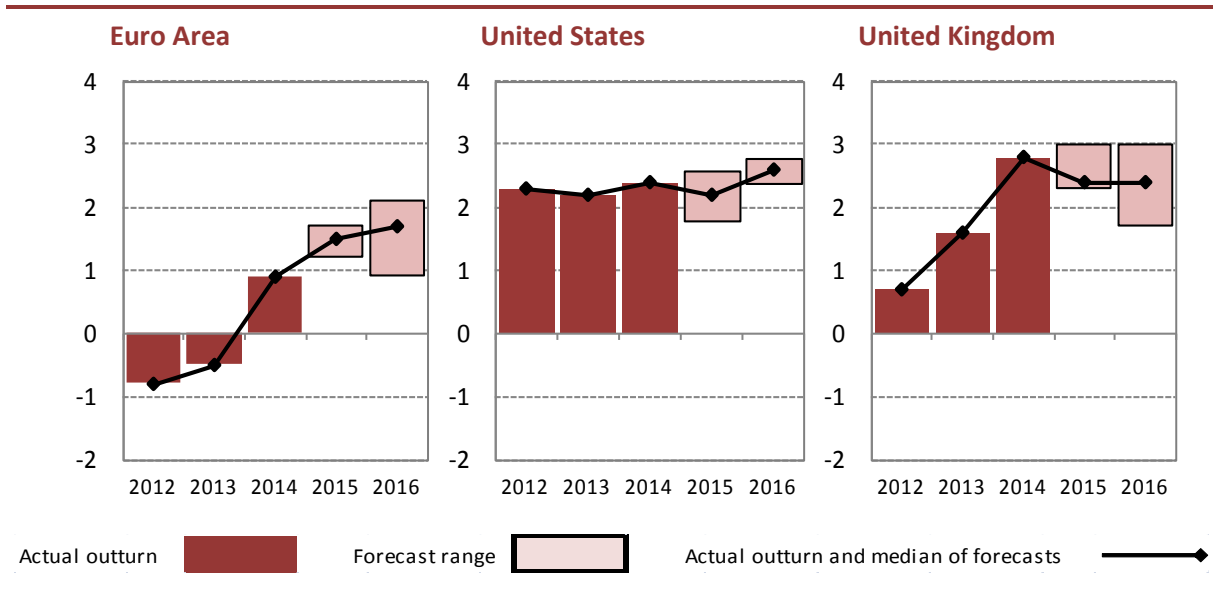
<sup>2</sup> Duffy D., D. Foley and K. McQuinn (2015). 'Cross-country residential investment rates and the implications for supply response in Ireland', Paper to the joint EU Commission / ESRI Seminar: Housing Ireland's Recovery: Policy perspectives, Dublin, November.

<sup>3</sup> Social housing 2020 (2014). 'Support, supply and reform', Department of Environment, Community and Local Government, available at [www.environ.ie/en/PublicationsDocuments/FileDownload,39622,en.pdf](http://www.environ.ie/en/PublicationsDocuments/FileDownload,39622,en.pdf).

## The International Economy

The economic performance of Ireland’s main trading partners remains positive with GDP in each of the UK, US and Euro Area increasing in the final quarters of 2015. Significant downside risks remain, particularly those associated with a downturn in the Chinese economy, which threaten future growth prospects for many developed economies. Figure 1 shows forecast GDP growth in Ireland’s three main trading partners. Since the Spring *Commentary* growth forecasts for the Euro Area for 2015 have been revised upwards from 1.3 per cent to 1.5 per cent. Real GDP in 2016 is forecast to grow by 1.7 per cent, relatively unchanged from the beginning of the year. While the 2015 and 2016 growth forecasts for the UK remain unchanged, growth forecasts for the US have been revised downwards since the Autumn *Commentary*. The US is now forecast to grow by 2.2 per cent in 2015 and 2.6 per cent in 2016, while the UK is forecast to grow by 2.4 per cent in each year.

**FIGURE 1** Real GDP Growth (% change, year-on-year)



Sources: FocusEconomics, IMF, OECD, HM Treasury and Federal Reserve.

### The Euro Area Economy

Compared with the second quarter of 2015, seasonally-adjusted GDP rose by 0.3 per cent in the Euro Area and by 0.4 per cent in the European Union during the third quarter of the year. When compared to the same period of 2014, seasonally-adjusted GDP rose by 1.6 per cent in the Euro Area and by 1.9 per cent in the European Union. Among the Member States for which data are available,

Estonia, Greece and Finland recorded negative growth in Q3 2015 while Romania, Slovakia and Poland recorded the highest growth rates.

Euro Area annual inflation was 0.1 per cent in October 2015, up from -0.1 per cent in the previous month and compares with a rate of 0.4 per cent for the same period last year. The latest figures from Eurostat also indicate that annual inflation in the European Union was 0 per cent in October 2015 compared to a rate of 0.5 per cent 12 months previous. When compared to the rates recorded in September 2015, annual inflation fell in four Member States, remained stable in seven and rose in 16. However, when energy prices – believed to be the main driver of falling inflation – are excluded, annual inflation was 1.2 per cent in October 2015. As noted in previous *Commentaries*, despite its drag on annual inflation, lower oil prices should continue to support consumption growth through the positive impact on household personal disposable income.

In September 2015 the seasonally-adjusted unemployment rate in the Euro Area was 10.8 per cent, down from 11.5 per cent in the same period last year. This is the lowest rate recorded in the Euro Area since January 2012 and compares to the 7.5 per cent recorded on the eve of the financial crisis in 2007. Among the Member States large differences remain in the level of unemployment. For example, the lowest unemployment rate for 2015, 4.5 per cent, was recorded in Germany in September. While the largest decrease in unemployment in the 12 months to September 2015 was registered in Spain – a fall of some 2.4 per cent – its unemployment rate remains amongst the highest recorded in the Euro Area at 21.6 per cent.

In response to persistent low inflation in the Euro Area, the European Central Bank (ECB) decided in the December governing council meeting to cut its deposit facility to -0.3 per cent from -0.2 per cent. The main refinancing rate remains unchanged at 0.05 per cent. In advance of the December governing council meeting, Mario Draghi, President of the ECB, indicated that all instruments available within their mandate would be used if it is concluded that the balance of risks to the medium-term price stability objectives are skewed to the downside. In addition, chief economist Peter Praet also cited mounting risks that inflation will remain below the ECB target of just below 2 per cent for longer than previously anticipated. In addition, the monthly asset purchases of €60 billion, as part of the non-standard monetary policy measures, have been extended to run until September 2017 or beyond if necessary.

In November, Vice-President of the ECB, Vítor Constâncio commented on the deterioration of the Euro Area's external environment since the introduction of the asset purchasing programme earlier this year. In particular, he raised

concerns about growth prospects in emerging markets and unfavourable developments in financial and commodity markets, all of which signal downside risks to the outlook for growth and inflation. While he echoed Mario Draghi's sentiment that monetary policy has been and will continue to be accommodative, he also highlighted the fact that without a common European fiscal policy, monetary policy alone cannot respond to all the existing challenges.

A recent report from the Association of European Conjunction Institutes (AIECE)<sup>4</sup> indicated that the Euro Area's fiscal position has significantly improved since the difficulties of 2009. However, attention is drawn to the evolution of public debt levels, with consideration given to the growing heterogeneity in the fiscal positions of different countries. Compared to the situation in 2007 when the standard deviation of debt-to-GDP ratios across Euro Area countries was 29.7, current estimates suggest this had reached 40.3 in 2014. For example, public debt in Germany is expected to fall below the 70 percent of GDP threshold in 2016, while the rate in France is expected to exceed 100 percent of GDP.

While the weak Euro and low oil prices continue to support growth, downside risks from within the Euro Area continue to exist. Following difficult negotiations at the end of November, Greece succeeded in securing a deal with the Eurozone to unlock the latest tranche of financial aid. Although the fiscal situation in Greece remains problematic any spillover risk is nevertheless considered to be contained. The slowdown in China is also creating much uncertainty which is discussed in greater detail in The World Economy subsection.

### **The US Economy**

Real GDP increased at an annual rate of 2.1 per cent in the third quarter of 2015 according to the Bureau of Economic Analysis. In the second quarter, real GDP increased by 3.9 per cent. The increase in real GDP in the third quarter (compared to an initial estimate of 1.5 per cent) primarily reflects upward revisions to business spending on equipment. Consumer spending also remains strong despite slight downward revisions this month. Growth in exports was also revised down in the third quarter reflecting a persistently strong Dollar and sluggish global demand.

Following the decision by the Federal Open Market Committee in October to leave interest rates unchanged, it is anticipated that strong figures recorded in the third quarter of the year will result in the first rate hike in nine years in mid-December. Since December 2008 the Federal Reserve has kept its benchmark

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<sup>4</sup> AIECE (2015). General Report. Coe-Rexecode, Brussels, November 5-6.

interest rate at a range between zero and one-quarter per cent. However, with the unemployment rate now at 5 per cent – what the Federal Reserve regards as ‘full employment’ – speculation has heightened that interest rates will be increased in December.

The unemployment rate is now at its lowest level since April 2008. Over the past 12 months, the unemployment rate and the number of unemployed persons were down by 0.7 percentage points and 1.1 million, respectively. The labour force participation rate was unchanged at a new 32-year low of 62.4 per cent in October, following a decline of 0.2 percentage points in September. The employment-population ratio, at 59.3 per cent, changed little in October and has hardly moved over the past year.

### **The UK Economy**

The most recent data from the Office of National Statistics (ONS) indicate that UK GDP increased by 0.5 per cent in the third quarter of 2015. This compares to growth of 0.7 per cent reported in the second quarter of the year. As a result of these growth rates, GDP is 2.3 per cent higher in Q3 2015 compared to the same quarter one year ago. The apparent easing of austerity measures in the recent half-year budget update should go some way to reinforcing the positive growth outlook for 2016.

Despite the relative strength of the recovery and continued reduction in the unemployment rate, price pressure in the UK economy remains weak. The Consumer Price Index (CPI) fell by 0.1 per cent in the year to October 2015, the same fall as in the year to September 2015. Recent data from the ONS suggest that annual inflation has been at or around 0 per cent since February of this year. Much of the recent downward pressure on CPI inflation has reflected the fall in oil prices, the appreciation of Sterling and strong competition among retailers. Historically, price movements in these groups have been the main causes of inflation.

There is still considerable uncertainty regarding when UK interest rates might increase. Despite the economy being described as robust and resilient, the Bank of England, in its recent quarterly inflation report, indicated that a weakening of their outlook for global growth forced them to reconsider when a rate change may occur. Following six and a half years of record low rates it is now anticipated that rates will not rise until the second quarter of 2016 at the very earliest. Even with limited and gradual rate increases, Mark Carney, Governor of the Bank of England, stated that the UK is likely to remain in a prolonged low interest rate environment for some time.



The unemployment rate fell to 5.3 per cent in the third quarter of 2015. This compares to a rate of 5.6 per cent in Q2 and 6 per cent a year previous. The rate recorded in Q3 2015 is also the lowest unemployment rate in the UK since April 2008. In the third quarter of the year the employment rate was at its highest since comparable records began in 1971, at 73.7 per cent. Despite the strong employment figures, pay inflation remains subdued. Excluding bonuses, regular earnings in the three months to September were 2.5 per cent higher than in the same three months of 2014. This is down from 2.8 per cent which was recorded for Q3 August 2015. Interest rate hikes are likely to remain unchanged while wage growth remains weak.

A British exit from the European Union remains one of the most prevalent risks to the Irish economy. A recent study by the ESRI<sup>5</sup> determined the potential economic consequences of a 'Brexit' for Ireland. Focusing on four key areas – trade, foreign direct investment, energy and migration – the evidence suggests that Ireland's interests are best served by the UK remaining within the EU. Research<sup>6</sup> from the National Institute of Economic and Social Research (NIESR) highlighted the difficulty with quantifying the impact on the UK of a withdrawal from the EU given the range of factors that need to be considered. While the research does not anticipate significant disruption to employment levels in the UK, the analysis does suggest that a withdrawal could mean that the level of output in the UK economy would be lowered permanently. Other research on the topic has drawn similar conclusions.<sup>7</sup>

### The World Economy

Weakening growth and financial vulnerabilities in China continue to be the main sources of downside risk. Despite repeated interest rate cuts, amongst other stimulus measures, China's economic growth slowed to a six-year low of 6.9 per cent in the third quarter of 2015.

The ECB<sup>8</sup> recently highlighted the main risk to the Euro Area of an economic slowdown in China; falling exports, capital outflows and exchange rate fluctuations. They maintain that an economic 'confidence shock' could lead to a tightening of financial conditions in emerging markets and a further slowdown of

<sup>5</sup> Barret, A., A. Bergin, J. FitzGerald, D. Lambert, D. McCoy, E. Morgenroth, I. Siedschlag and Z. Studnika (2015). *Scoping the Possible Economic Implications of Brexit on Ireland*. ESRI, [www.esri.ie](http://www.esri.ie).

<sup>6</sup> Pain, N. and G. Young (2004). 'The macroeconomic impact of UK withdrawal from the EU'. *Economic Modelling* Vol. 21(3), pp 387-408. National Institute of Economic and Social Research, London.

<sup>7</sup> Ottaviano, G., J.P. Pessoa, T. Sampson and J. Van Reenen (2014). *Brexit or Fixit? The Trade and Welfare Effects of Leaving the European Union*. The Centre of Economic Performance (CEP) <http://cep.lse.ac.uk/pubs/download/pa016.pdf>.

<sup>8</sup> See [www.ecb.europa.eu/pub/pdf/other/eb201507\\_focus01.en.pdf](http://www.ecb.europa.eu/pub/pdf/other/eb201507_focus01.en.pdf).

Euro Area foreign demand. In particular, it is feared that the health of the Chinese stock market could impact markets in the Euro Area through the effects on global confidence.

A recent paper from Buiter (2015)<sup>9</sup> notes the reasons behind China's downturn and likely recession. As with business cycles everywhere, rising excess capacity in a growing number of sectors, excessive leverage in the private sector as well as irrational exuberance in asset markets are cited as three of the main reasons. The paper concludes that while policy options exist they are unlikely to be implemented in time to prevent a recession. The OECD, amongst others, has noted the challenge for the Chinese economy is to rebalance activity towards consumption and services while maintaining GDP growth and financial stability.

In seeking to quantify the potential impact of any global shock on the Irish economy it is useful to examine results in Bergin et al. (2013).<sup>10</sup> The analysis examines a 1 percentage point increase in world output; however, the effects are symmetric and therefore we can also interpret the results from the point of view of a growth shock which reduces world output by 1 percentage point. If this were to occur, Irish GDP in the first year of the shock would fall by 0.8 per cent. In addition to this, exports of goods and services would also fall by 3.2 per cent in the same year as the shock. As in previous *Commentaries*, it is worth highlighting the fact that any downside risk associated with the Chinese downturn would affect Ireland primarily through secondary markets such as the US, UK and the Euro Area.

Following a meeting of OPEC in early December, which resulted in no change made to the over-supply of oil, Brent crude oil prices fell a further 5 per cent to US\$41. As recently as summer 2014, Brent stood at US\$110 a barrel but in 16 months its price has been more than halved in response to a slowdown in China and other emerging market economies.

### **Implications for Irish Exports, Imports and the Balance of Payments**

The Quarterly National Accounts (QNA) figures for Q3 2015 show that seasonally adjusted, the total volume of imports are up 18 per cent over Q3 2014. This consisted of increases in both goods and services imports of 5 per cent and 28 per cent respectively. The strong growth in service imports, in part, reflects patent purchases. Seasonally-adjusted total exports also show strong growth with an

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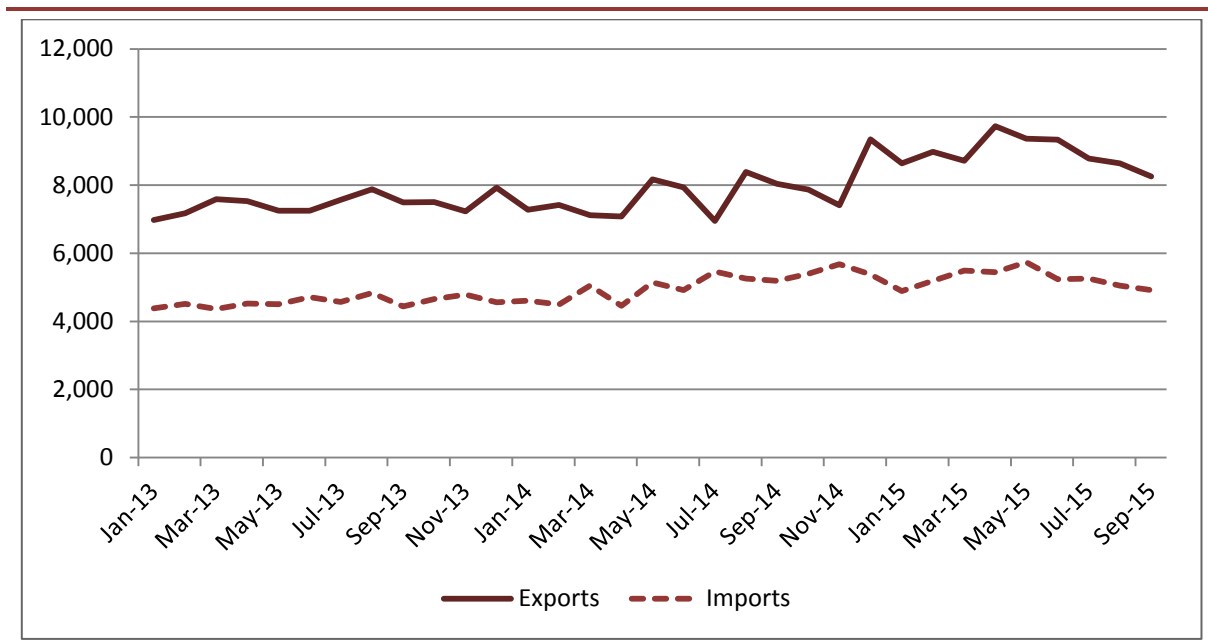
<sup>9</sup> Buiter W. (2015). 'Is China Leading the World into Recession?' *Global Economic View*, Citibank. Available online at: <http://willembuiter.com/China2015.pdf>.

<sup>10</sup> Bergin A., T. Conefrey, J. Fitzgerald, I. Kearney and N. Znuderl (2013). 'The HERMES-13 macroeconomic model of the Irish economy', ESRI, Working Paper No. 460, July.

increase of 12 per cent. Goods exports increased by 16 per cent and services exports grew 8 per cent in the year to Q2 2015.

The Balance of Payments release for Q3 2015 shows strong growth in both services imports and exports. Total services exports, as recorded by the Balance of Payments, increased 15 per cent in value from Q3 2014 to Q3 2015, primarily driven by an increase in computer services exports of 22 per cent. The figures also reveal an increase of service imports of 32 per cent. The main driver of this was an increase in royalties and licences. The figure for the current account surplus for Q3 2015 is €2.4 billion or 4.5 per cent of GDP. This compares to a surplus of €3.12 billion for Q3 2014. This figure is somewhat less than would have been the case under the previous treatment of aircraft leasing in the National Accounts. This figure can also be affected by redomiciled PLCs which tend to inflate the balance on the current account.

**FIGURE 2** Goods Exports and Imports



Source: Central Statistics Office.

Looking at more recent data, the monthly release of goods exports and imports by the CSO shows that seasonally-adjusted goods exports fell by 4.0 per cent from the August 2015 figure. The equivalent figure for goods imports fell by 3 per cent over the same period. The overall effect was to decrease the trade surplus by €252 million or 7 per cent in September. A noticeable downward trend has emerged in the trade statistics in recent months as is evident from Figure 2.

The unadjusted value of goods exports increased by 5 per cent or €420 million in the year to September. Some of the components that experienced strong growth

compared to last year include medical and pharmaceutical products of 14 per cent or €278 million. Essential oils increased by 17 per cent or €88 million and electrical machinery, apparatus and appliances and parts increased by 24 per cent or €48 million.

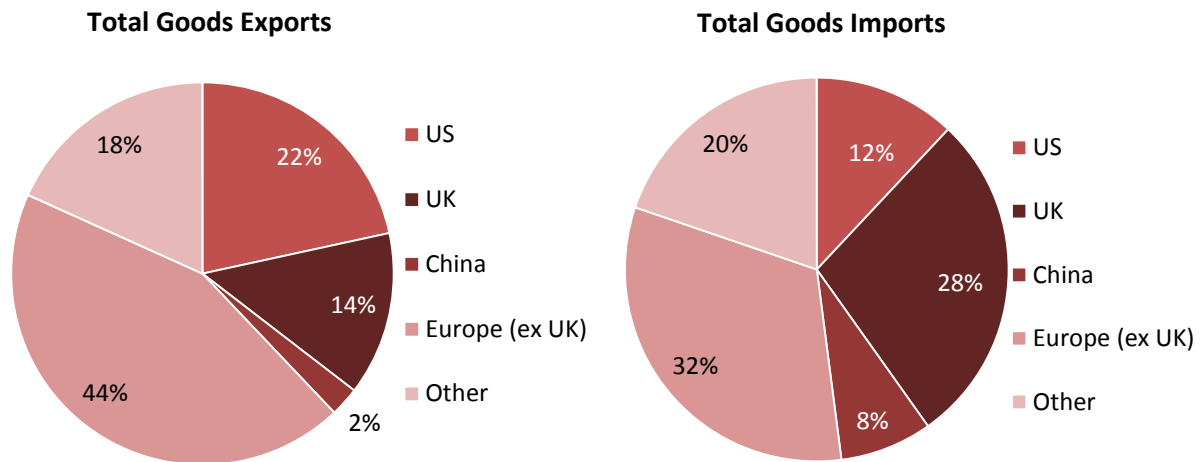
Overall the unadjusted value of goods imports decreased in September 2015 by 5 per cent or €284 million when compared to September 2014. The decrease consisted of falls in imports of petroleum of 47 per cent or €245 million. Imports of other transport equipment (including aircraft) fell by 82 per cent or €642 million. This particular component is highly volatile and so it is not too surprising to see movements of this scale from the series. There was also growth in some goods including organic chemicals of 86 per cent or €148 million and medical and pharmaceutical products of 37 per cent or €130 million. Once again it appears that goods imports and exports growth is dominated by a relatively small number of sectors and the volatility of these sectors increase the difficulty in forecasting these series.

Figure 3 provides the share of goods imports and exports by country. The UK remains Ireland's single biggest trading partner with approximately 28 per cent of imports and 14 per cent of exports. This reliance on the UK means there could potentially be significant implications if Britain leaves the EU (Brexit). A recent publication from the ESRI,<sup>11</sup> discussed previously, indicated that if Brexit were to occur, the bilateral trade flows between Ireland and the UK could decrease by as much as 20 per cent. This would obviously have negative implications for Ireland's economic growth. Our other main trading partner, the US, accounts for approximately 22 per cent of exports and 12 per cent of imports. Figure 4 highlights the level of service exports and imports by geographical location. The graph shows that the majority of services exports are going to the European Union while the majority of services imports are coming from outside the European Union.

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<sup>11</sup> See Barrett A., A. Bergin, J. Fitzgerald, D. Lambert, D. McCoy, E. Morgenroth, I. Siedschlag and Z. Studnicka (2015). *Scoping the Possible Economic Implications of Brexit on Ireland*, ESRI Research Series.

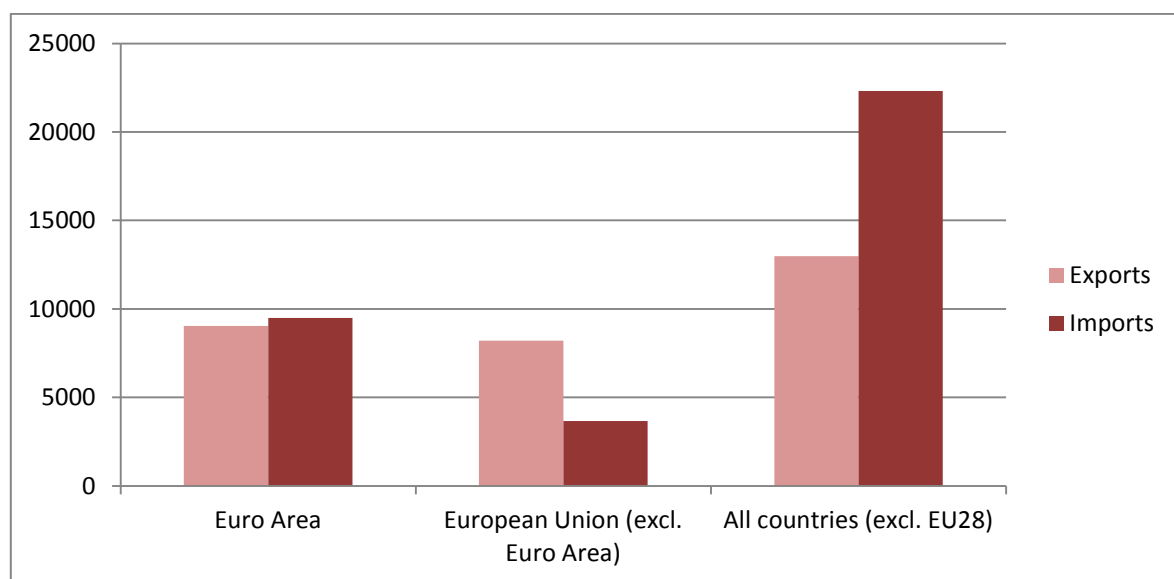
**FIGURE 3** Goods Exports and Imports by Destination



Source: Central Statistics Office.

As well as the potential threat of Brexit, the situation in China, as mentioned in the World Economy subsection, also provides a source of uncertainty for Ireland. Although Ireland’s share of goods exports to China is relatively small at 2 per cent and so the direct impact on exports would be limited, a slowdown in China leading to a drag on growth in our major trading partners could negatively impact Ireland’s growth.

**FIGURE 4** Services Exports and Imports by Geographical Detail (Q3 2015, € million)<sup>12</sup>

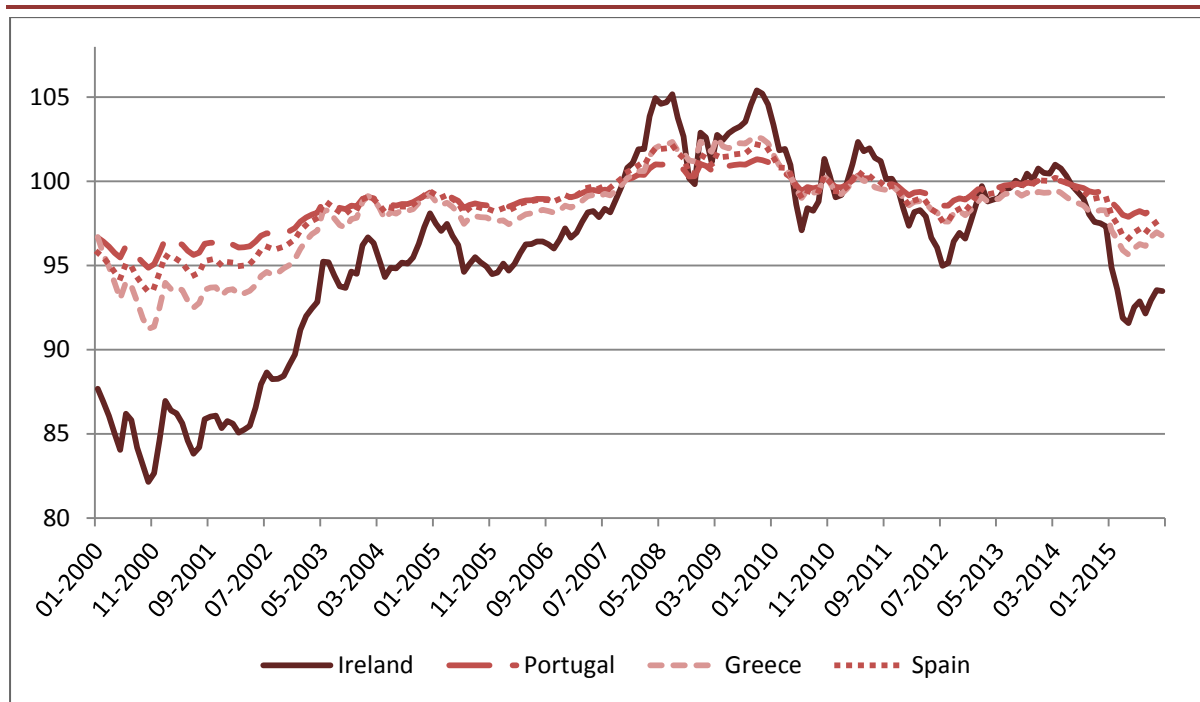


Source: Central Statistics Office.

<sup>12</sup> Data for services exports and imports are only available for EMU18, EU28 and All Countries.

Central to Ireland’s recent strong export performance has been the improvement in the economy’s competitiveness and the robust growth of our main trading partners. The depreciation of the Euro against the US Dollar and the UK Pound as a result of the ECB’s accommodative monetary policy and lower unit labour costs have both led to a significant improvement in Ireland’s international competitiveness which boosts export growth. If we compare Ireland’s nominal effective exchange rate with countries such as Greece, Portugal and Spain as in Figure 5, it becomes clear why Ireland’s exports have grown so robustly. Ireland’s nominal effective exchange rate since 2014 has depreciated to a significantly greater extent than these countries which also experienced large recessions. This pattern is also observed in the real effective exchange rate when inflation is taken into account.

**FIGURE 5** Nominal Effective Exchange Rate Index = 2010



Source: Bank of International Settlements.

As well as a fall in the effective exchange rate, Ireland has regained its export market share, driven in part by increased cost competitiveness. Figure 6 shows relative unit labour costs (labour costs adjusted for productivity and compared with Ireland’s trading partners).<sup>13</sup> It is clear that a reduction in unit labour costs has also been helpful in improving Ireland’s export performance in recent years. It is important to note that some of the fall has been a result of compositional effects, i.e. a move away from the labour intensive construction sector.<sup>14</sup>

<sup>13</sup> OECD Economic Surveys: Ireland 2015.

<sup>14</sup> O’Farrell, R. (2015). ‘Wages and Ireland’s International Competitiveness’. *The Economic and Social Review*, 46(3), pp.429-458.

**FIGURE 6** Relative Unit Labour Costs and Export Market Performance



Source: OECD economic outlook database.

Taking these factors into account, we forecast exports to remain relatively robust in 2015, growing by 13.1 per cent before returning to more moderate levels of 7.6 per cent in 2016. Given the strong economic performance domestically, the increase in consumers’ disposable income and the associated pickup in domestic consumption, we forecast imports to grow by 15.7 per cent in 2015 and 10.1 per cent in 2016.

## The Domestic Economy

### Output

The domestic section of the *Commentary* is organised as follows; we initially review the outlook for output growth before discussing developments in the Irish monetary and financial sectors. Prices and earnings in the economy are then discussed, followed by a review of demand-side factors such as consumption and housing market issues. On the supply side, we then examine developments in investment and the labour market before concluding with an analysis of the public finances.

The Irish economy is set to grow by a significant 6.7 per cent in 2015. This constitutes a remarkable recovery given the scale of difficulties which have afflicted the domestic economy over the past six or seven years and it is also the largest rate of growth experienced by the Irish economy since 2005.

The growth performance in the current year has changed somewhat in composition, in that the initial wave of the recovery, which had been export driven in nature, is now increasingly being complemented by strong increases in both investment and consumption. In the initial *Commentary* of 2015 we had suggested that consumption would become an increasingly relevant source of growth in 2015 and this has now clearly transpired, indicating that while hangovers from the financial crisis are still prescient in the Irish economy they are no longer restricting growth.

The Nowcasting model (summarised in the Appendix) indicates that the Irish economy grew by nearly 1.4 per cent for Q4 2015 following an increase of 1.7 per cent in Q3 2015. Based on these improving trends, we have revised upwards our growth forecast for 2015; we now envisage 2015 output growth in GDP of 6.7 per cent. We also revise upwards our outlook for 2016 with output growth of 4.8 per cent now expected.

### Potential Output and the Output Gap

Given the particularly strong growth recovery now evident in the Irish economy it is timely to ascertain what the implications are for potential output. This concept is of increasing importance as the associated output gap is at the core of many of the metrics used in assessing the sustainability of the public finances. In order to address this question, we use the following growth accounting model outlined in



Byrne and McQuinn (2014)<sup>15</sup> and McQuinn and Whelan (2008)<sup>16</sup> where the following production system is assumed to capture the underlying dynamics of the Irish economy:

$$\begin{aligned}
 Y_t &= A_t K_t^\alpha L_t^{1-\alpha} \\
 K_t &= (1 - \delta)K_{t-1} + I_{t-1} \\
 I_t &= s_t Y_t \\
 L_t &= (1 - urx_t) * P_t * POP_t \\
 \Delta \log A_t &= g_t
 \end{aligned}$$

where  $Y_t$ ,  $K_t$ ,  $I_t$ , and  $L_t$  are output, capital, investment and employment respectively.  $POP_t$  is population levels and  $P_t$  is the labour force participation rate. Many studies have highlighted the difficulty in interpreting productivity estimates for the Irish economy mainly due to the significant presence of the multinational sector (see Honohan and Walsh, 2002<sup>17</sup> for example). Therefore we use GNP as the relevant output series for the empirical exercise.<sup>18</sup>

In generating estimates of potential output, steady-state assumptions for the following key parameters are required; the investment rate  $s_t$ , the growth rate of total factor productivity (TFP)  $g_t$  and the unemployment rate  $urx_t$ .

As noted by Byrne and McQuinn (2014) a historical review of the Irish labour market would suggest that the long-run or median unemployment rate is approximately 6.5 per cent. At present, given that the actual unemployment rate in the economy is over 9 per cent, this suggests the existence of a significant, negative output gap in the Irish case meaning that a considerable amount of spare capacity exists in the domestic economy. Indeed if we simulate the system above taking both the investment rate and the rate of TFP growth as being at their current rates, then the output gap at the end of 2015 is approximately minus 2.6 per cent.

However, such an assumption in the case of TFP growth is somewhat problematic. Consider the graph of Irish productivity rates below along with the

<sup>15</sup> Byrne D. and K. McQuinn (2014). 'Irish Economic Performance 1987-2013: A Growth Accounting Assessment.', *QEC Research Note*, Winter.

<sup>16</sup> McQuinn K. and K. Whelan (2008). 'Prospects for growth in the Euro Area', *CESifo Economic Studies*, Vol. 54(4), pp.642-680, 2008.

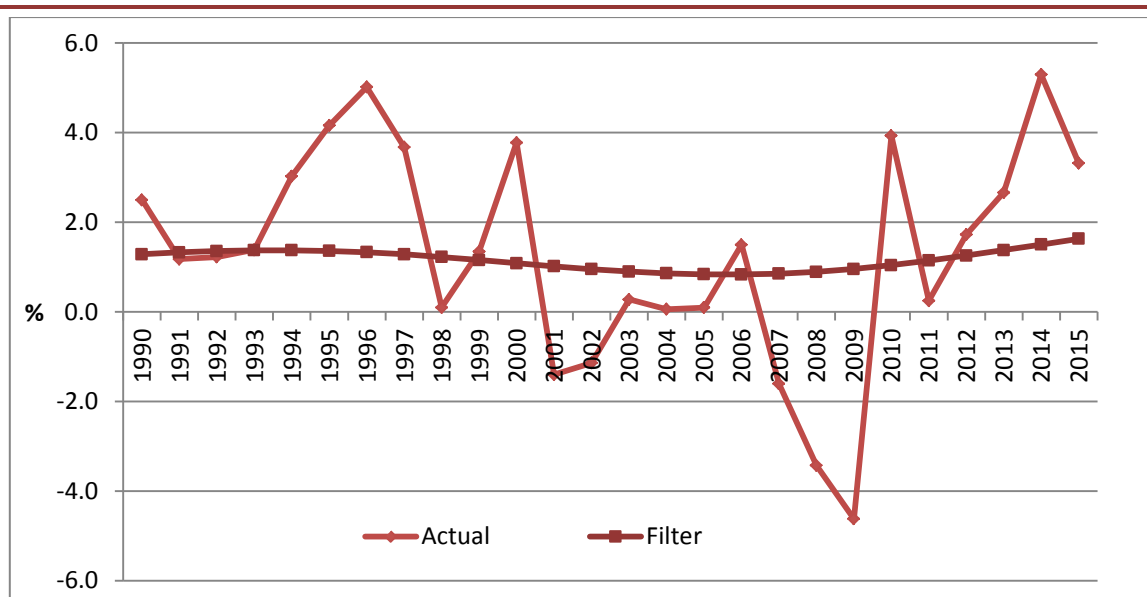
<sup>17</sup> Honohan P. and B. Walsh (2002). 'Catching up with the leaders: the Irish hare', *Brookings Papers on Economic Activity*, No. 1, pp.1-57.

<sup>18</sup> Note in calculating potential output estimates, we use data up to 2016 where the data for 2015 and 2016 are the latest *QEC* forecasts.

filtered value.<sup>19</sup> The filtered value is typically taken to represent the long-run or steady-state trend for the variable in question. The filtered estimate suggests that in 2015 the long-run estimate of Irish TFP growth is approximately 1.6 per cent.

As noted by McQuinn and Whelan (2015)<sup>20</sup> most European economies and indeed the United States have experienced a consistent decline in both labour and total factor productivity rates since the 1990s. The Irish economy also appears to have registered a relatively stagnant rate of productivity growth over the same period. However since 2010, a clear increase in TFP is apparent. The crucial issue, therefore, in assessing potential output growth, is whether this recent increase in productivity should be treated as a temporary issue or more reflective of an underlying structural improvement in productivity in the Irish economy. For a number of reasons we believe a more accurate approximation of the underlying rate of TFP growth in Irish economy at the present time is given by its filtered rate of 1.6 per cent. This results in a (negative) output gap of -0.9 per cent.

**FIGURE 7** Actual and Filtered TFP Growth Rates (%) for the Irish Economy: 1990-2015



Source: QEC estimates.

Given the significant fall-off in economic activity after 2007/2008, and the collapse in the housing market in particular,<sup>21</sup> there has been some suggestion of an investment deficit in the Irish economy at present. This would suggest that the

<sup>19</sup> The filtered value is given by a Hodrick-Prescott filter with lambda, the smoothing parameter = 100.

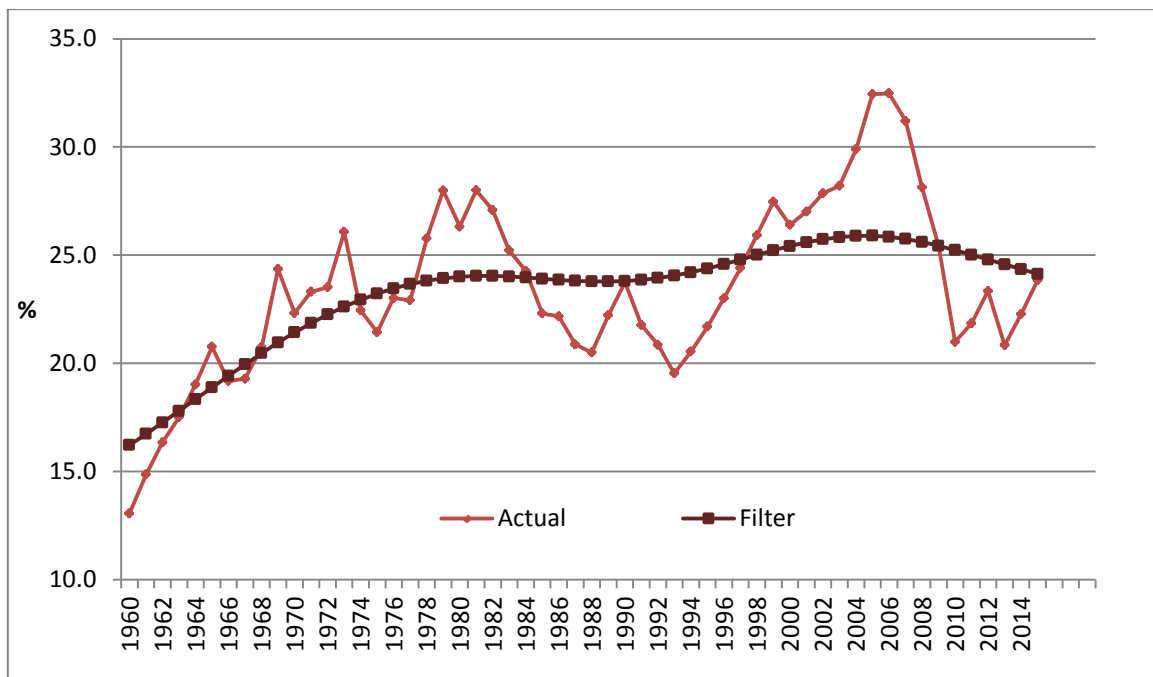
<sup>20</sup> McQuinn K. and K. Whelan (2015). 'Europe's Long-Term Growth Prospects: With and Without Structural Reforms', ESRI Working Paper No. 501, May.

<sup>21</sup> See the Autumn *Commentary* 2015 for a comparison of Irish residential investment rates with other leading European countries.

investment rate is currently somewhat below its long-run rate. In Figure 8 we plot both the investment rate and its filtered estimate over the long run (from 1961 to 2015), where investment is taken as a percentage of GNP.

From the graph it can be seen that the actual and filtered investment rate in 2015 are almost identical, reflecting the steep recovery in investment over the last couple of years. Over the period 1960-2015 the median investment rate is 23 per cent with the actual 2015 estimate 23.8 per cent. Therefore, whilst there are shortages in certain types of investment in the domestic economy, overall, the present investment rate would appear to be in line with its long-run steady state rate.

**FIGURE 8** Actual and Filtered Investment Rate for the Irish Economy: 1961-2015



Source: QEC data and estimates.

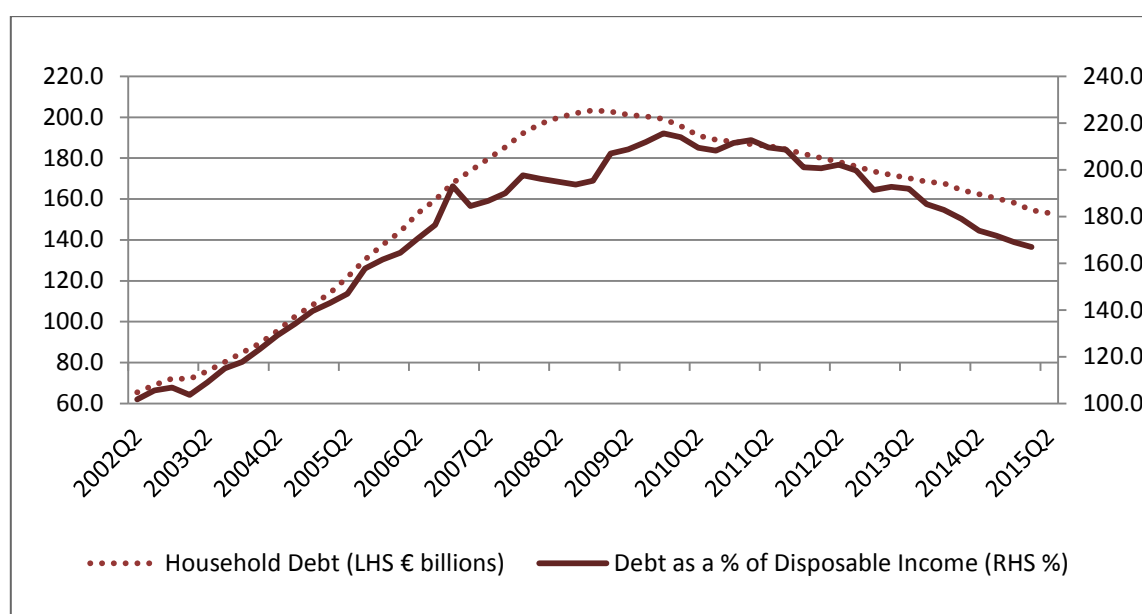
### Monetary and Financial Conditions

The most recent financial statistics release from the Central Bank reveals a modest improvement in household circumstances. Figure 9 shows both the total level of household debt in the economy and the ratio of debt to income. It is clear that there has been a continuing decline in the level of debt since its peak in 2008. The current level marks the lowest level reached since Q1 2006. Although this is a positive development it is worth noting that this is still relatively high compared to other countries. In fact, in the EU, only Denmark and Holland have higher debt-to-income ratios.

Household net worth<sup>22</sup> rose to reach €600.1 billion or €129,454 per capita during Q2 2015. This represents growth of 0.6 per cent over the previous quarter. This is largely due to increases in housing asset values as well as declines in household liabilities. Overall household net worth has increased by 36 per cent since its lowest level of €441.2 billion in Q2 2012.

Household debt continued to decline in Q2 2015, falling to €153.2 billion or €33,056 per capita. Overall the level of debt has decreased by 24.8 per cent since its peak of €203.7 billion at Q3 2008, which leads to a significant improvement in household debt sustainability in Q2 2015. More specifically the ratio of debt to disposable income fell by 4.3 percentage points during the quarter.

**FIGURE 9** Irish Household Debt 2003-2015



Source: Central Bank of Ireland.

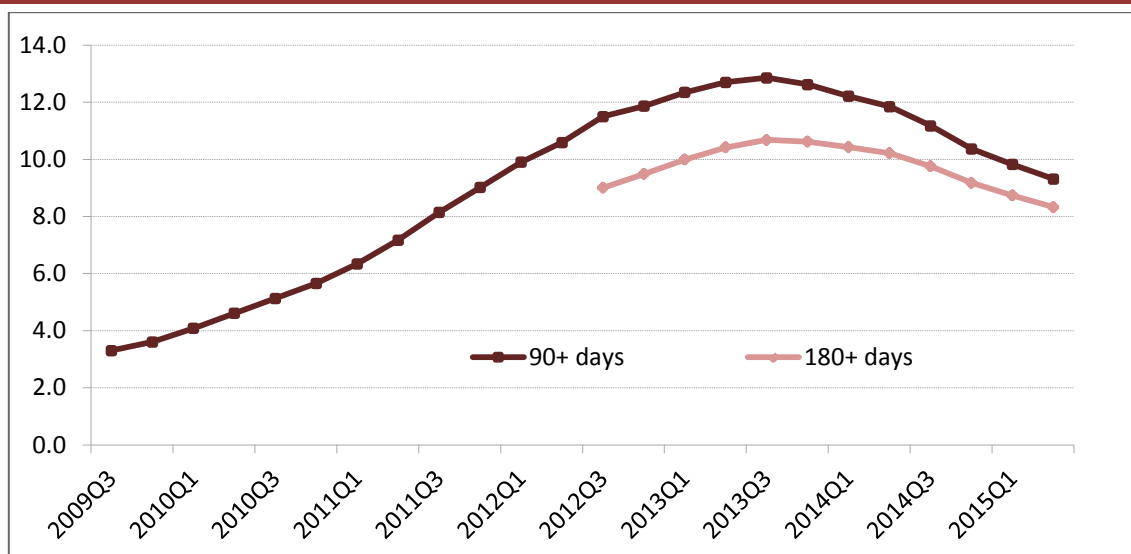
The number of mortgage accounts in arrears of over 90 days increased significantly in recent years, from 3.3 per cent of all outstanding mortgages on principal dwelling (PDH) properties at the end of Q3 2009 to a peak of 12.9 per cent by the end of Q3 2013. Figure 10 shows the number of mortgages in arrears over 90 days and 180 days as a percentage of outstanding PDH mortgages.

There is now a clear downward trend emerging as the number of accounts in arrears over 90 days continues to decline in Q3 2015. The number of accounts in arrears over 90 days at the end of June was 65,584 or 8.7 per cent of outstanding

<sup>22</sup> Household net worth is calculated as the sum of household housing and financial assets minus their liabilities. The Central Bank of Ireland estimate of housing assets is based on the size and value of housing stock. Data on the value of housing are obtained from the CSO's 'Residential Property Price Index' (RPPI).

PDH mortgages. This represents a quarterly fall of 6.7 per cent and is the seventh consecutive quarter of decline. As noted in the *Labour Market* section, the decline in the unemployment rate and the improvement generally in labour market conditions are likely to be the main reasons for the improvement in the arrears rate.<sup>23</sup> However, the number of arrears over 180 days has remained relatively stable at around 8.5 per cent over the past four years. The total number of buy-to-let (BTL) mortgages in arrears of 90 days and over at the end of Q2 2015 was 19 per cent; this represented a marginal decline from the peak of 22 per cent registered in Q3 2014.

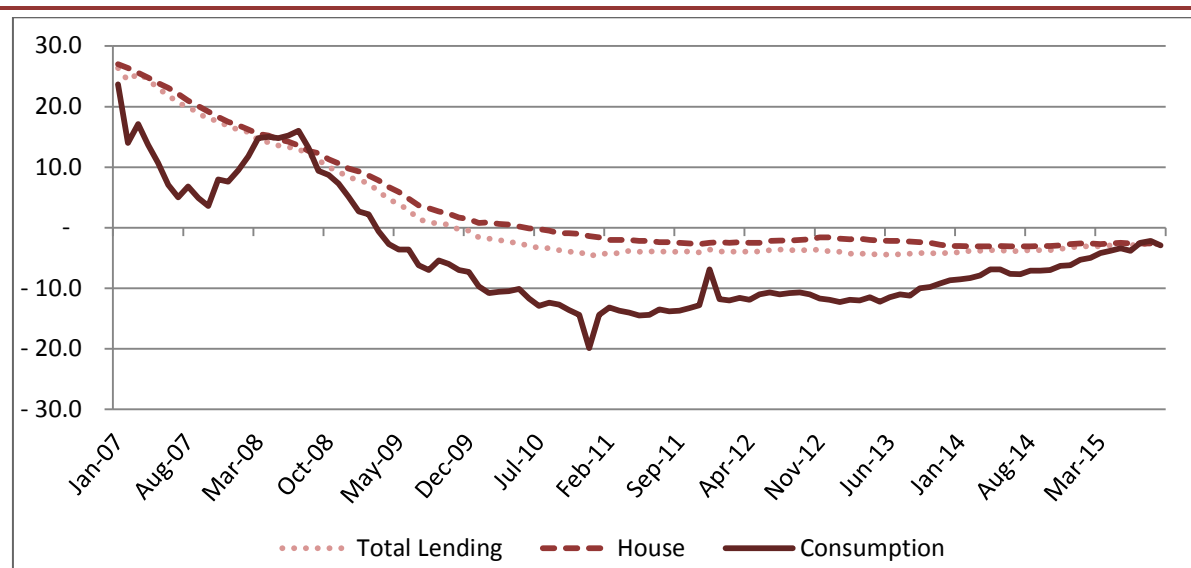
**FIGURE 10** Select Mortgage Arrears Rates (%): Q3 2009-Q2 2015



Source: Central Bank of Ireland.

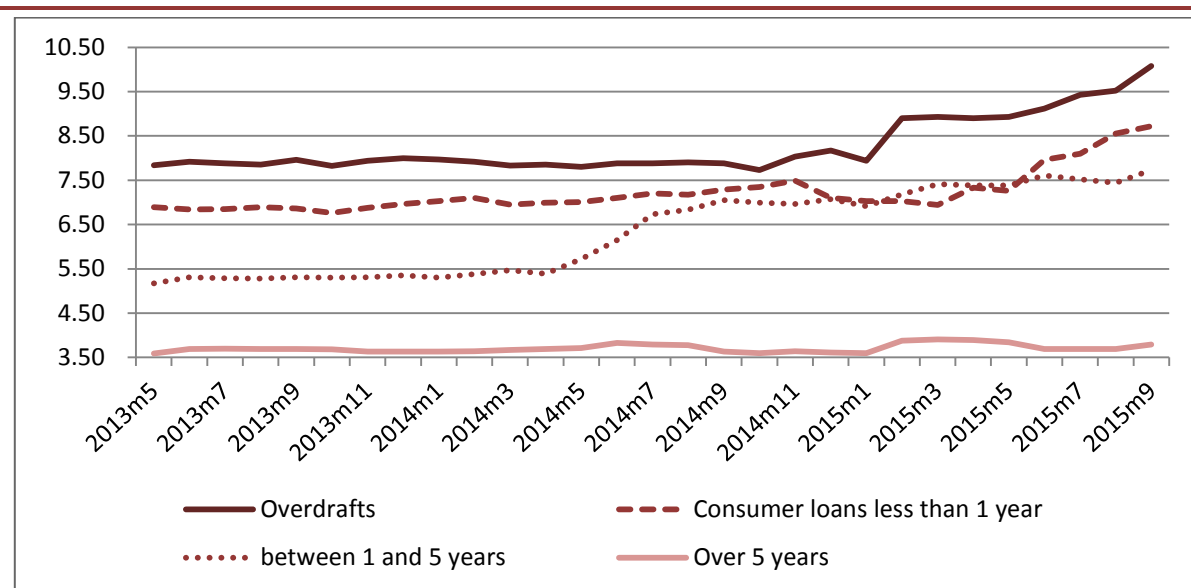
Most recent Central Bank data show that the growth rate of credit extended to households remains negative. This change in credit levels has remained negative since late 2008 and reflects the significant deleveraging being undertaken by Irish households in the aftermath of the credit boom and subsequent bust. From Figure 11 we can see a precipitous decline in lending for consumption purposes from 2008 onward. Although households continue to pay down their debt levels, in the last year the rate of decline has decreased significantly. Clearly the changes within this figure signify that some households are borrowing to fund the increased consumption observed in 2015. This trend correlates with the pick-up in consumer sentiment reflected in the KBC/ESRI Consumer Sentiment Index. As we expect consumption to continue to increase in 2016, it is highly likely that changes in credit for consumption purposes will register positive growth next year for the first time since early 2009.

<sup>23</sup> See Mc Carthy, Y. (2014). 'Disentangling the mortgage arrears crisis: The role of the labour market, income volatility and housing equity' Research Technical Papers, 02/RT/14, Central Bank of Ireland.

**FIGURE 11** Growth in Lending to Irish Households

Source: Central Bank of Ireland.

It is interesting to observe that the cost of finance to households has drifted upwards since the start of 2015. In Figure 12 interest rates on overdraft facilities and consumer loans are plotted from 2013 onwards. With the exception of loans for greater than five years, all rates have steadily increased during the course of the present year. As noted in McQuinn and Morley (2015)<sup>24</sup> in the case of mortgage interest rates, this occurs at a time when the ECB policy rate has been at a record low for some time.

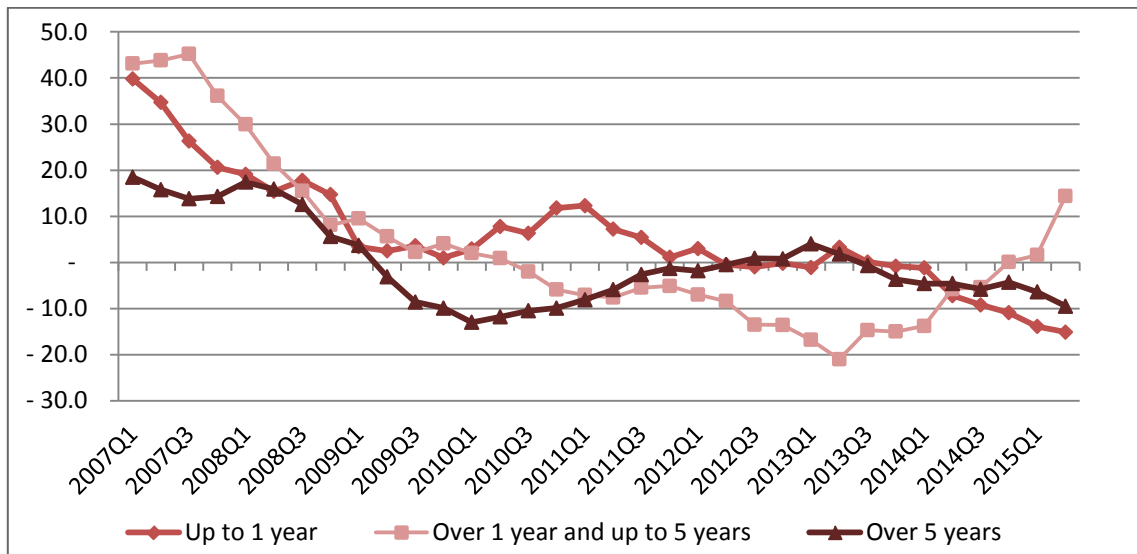
**FIGURE 12** Interest Rates (%) on Loans to Irish Households

Source: Central Bank of Ireland.

<sup>24</sup> McQuinn K. and C. Morley (2015). 'Standard variable rate (SVR) pass-through in the Irish mortgage market: An updated assessment', QEC Research Note, June.

Net lending to Irish non-financial corporations (NFCs) fell in September by 6.2 per cent. From Figure 13 it appears both longer- and short-term NFC lending has been declining since Q3 2013. This fall in longer-term credit is of some concern as it indicates a declining investment focus in the NFC sector. On the other hand, loans for medium-term durations (between one and five years), have recently showed strong positive growth, increasing by 12.9 per cent over September 2014.

**FIGURE 13** Year-on-Year Growth Rate (%) of Lending to Irish Resident Non-Financial Corporations: Q1 2007-Q2 2015



Source: Central Bank of Ireland.

Given the importance of small and medium enterprises in Ireland,<sup>25</sup> it is useful to look at recent trends in credit extended to them. Although deleveraging continues, there have been increases in year-over-year growth rates in credit extended to certain sectors. In particular, two of the largest percentage increases occurred in the information and communication sector while growth was also observed in other real estate activities. Credit extended to small and medium enterprises (SMEs) is expected to improve and become more broad based as SMEs further pay down debt and as the current economic environment provides favourable conditions for banks to increase profitability and increase credit availability.

In terms of funding of the sovereign, the overall picture in 2015 continues to improve. A total of €18 billion worth of loans was re-financed between Q4 2014 and Q2 2015. It is estimated that the total interest cost savings could exceed €1.5 billion over five years. In 2015, the NTMA issued its first ever 30-year bond which raised €4 billion; the yield on the bond was 2.088 per cent. The yield on the €1

<sup>25</sup> See Lawless, M., C. O’Toole and D. Lambert (2014). *Financing SMEs in Recovery: Evidence for Irish Policy Options*, ESRI Research Series.

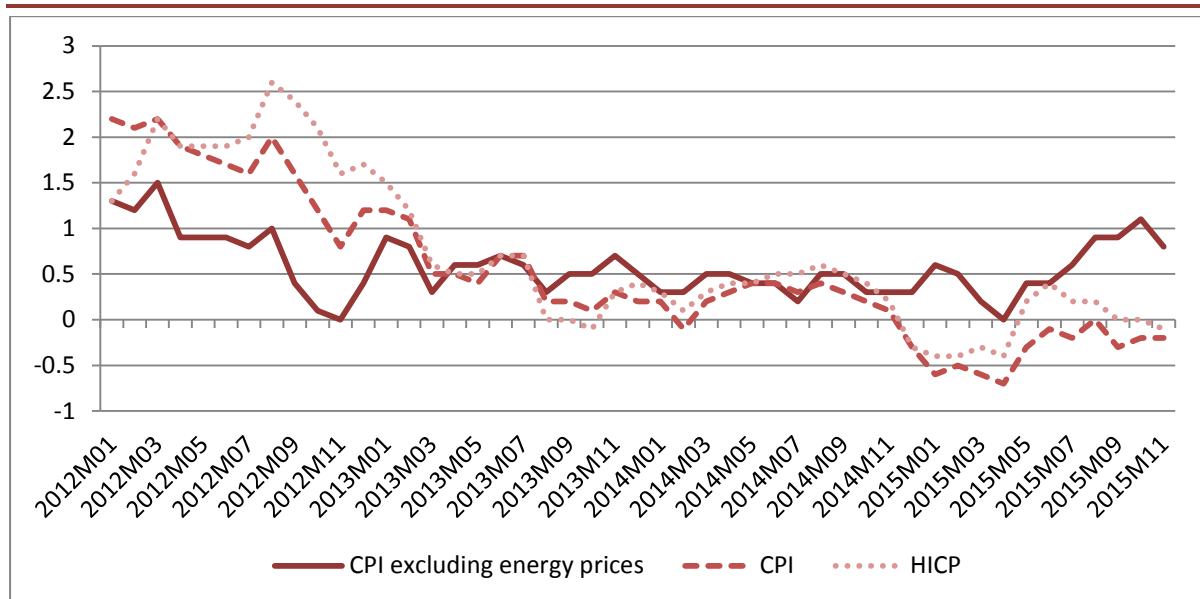
billion 2045 bond issued in March dropped to 1.31 per cent. Seven-year bonds were also sold in May with two 15-year bonds issued in September. As of November, €13 billion of sovereign funding has been issued so far this year, while the Exchequer had €15 billion of cash and other liquid assets at the end of September 2015.

### Prices and Earnings

The monthly change in the Consumer Price Index (CPI) in November was -0.3 per cent. This compares to a growth rate of -0.2 per cent in October. The most significant factors that contributed to the decrease included a fall in transport prices of -1.6 per cent and a reduction in restaurants and hotels prices of -0.6 per cent.

More importantly the latest CPI release from the CSO shows that annual growth in average prices is -0.2 per cent in November. This is the same as the growth rate observed in October. Given the strength of underlying economic activity, the deflation reflects the importance of external international factors such as falling energy prices. Figure 14 shows the annual growth rate in CPI with and without energy prices; excluding energy products results in an annual inflation rate of 0.8 per cent, therefore the collapse in oil prices (Figure 15) earlier in the year is still exerting a significant drag on annual inflation. As a net importer of oil, the ongoing low price is acting as a significant stimulant to economic activity where businesses and consumers are the beneficiaries of lower than expected fuel costs.

FIGURE 14 Inflation Rates Annual % Change 2012 M01-2015 M11

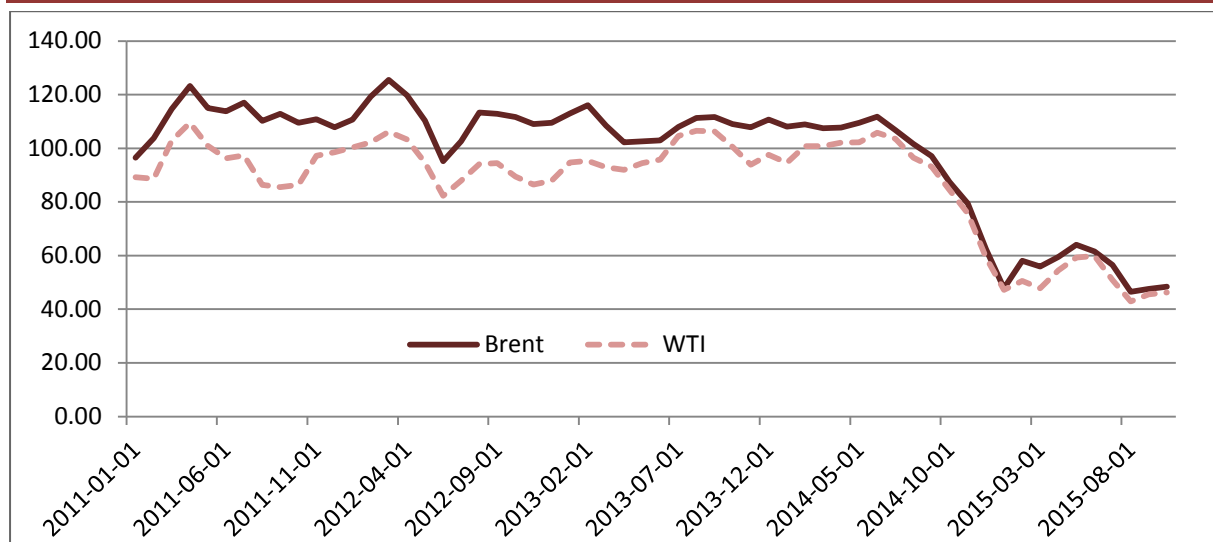


Sources: Central Statistics Office and European Central Bank.



Some of the notable annual changes in the components of the CPI include decreases in transport of -5.3 per cent, clothing and footwear of -3.6 per cent and food and non-alcoholic beverages of -1.3 per cent. There were also positive growth rates observed in components such as education of 3.8 per cent, miscellaneous goods and services of 2.3 per cent and restaurants and hotels of 1.4 per cent.

**FIGURE 15** Oil Price US\$ per Barrel



Source: Federal Reserve of St. Louis.

A detailed breakdown of the percentage contribution to the annual fall in inflation reveals that transport, food and non-alcoholic beverages and clothing and footwear had the most significant effect, accounting for -0.71, -0.14 and -0.15 per cent respectively. It would appear that overall average prices in the service sector are growing with an increase of 2.4 per cent year-on-year while average prices for goods fell by 3.6 per cent.

The Harmonised Index of Consumer Prices (HICP), which allows for cross country comparisons of inflation within the EU, reveals that average annual prices are down 0.1 per cent from a year earlier. According to the HICP, some of the most notable changes in the year include increases in housing, water, electricity, gas and other fuels of 4.9 per cent, education of 3.8 per cent and restaurants and hotels of 1.4 per cent. Similar to the CPI, there were significant decreases in transport of 5.7 per cent and clothing and footwear of 3.4 per cent.

Preliminary estimates for earnings growth in Q3 2015 suggest an annual increase in Average Hourly Earnings of 2.1 per cent, or from €21.02 to €21.46. This compares to an annual increase of 1.4 per cent for the previous quarter. The results suggest a broad-based increase with ten of the 13 sectors seeing growth

in Average Hourly Earnings. Of these, the largest increase was recorded in the administrative and support services sector, rising 10.6 per cent. The largest fall was recorded in the human health and social work sector, decreasing 0.7 per cent.

Broadly similar earnings growth was observed in small, medium and large companies. In particular, annual Average Hourly Earnings in companies with less than 50 employees increased by 2.3 per cent while companies with employees between 50 and 250 grew by 2 per cent and companies with more than 250 employees experienced the largest growth at 2.6 per cent.

Earnings results by sector were mixed with private sector growth in annual Average Hourly Earnings of 2.8 per cent while the public sector experienced albeit marginal but negative growth of -0.2 per cent. The latter result could reflect an increase of employment in the public service at lower wage levels resulting in reduced overall Average Hourly Earnings.

Our inflation forecasts for 2015 and 2016 are presented in Table 1. We expect annual inflation as measured by the CPI to fall marginally by 0.1 per cent in 2015. We then expect inflation to rise to 1 per cent in 2016 as the ECB continues monetary easing to support Euro Area inflation, and as domestic activity – and in particular greater levels of consumption – increase aggregate demand. On the basis of increased labour demand and some tightening in the labour market, we expect average growth in earnings to reach 2 per cent in 2015 and to grow by a further 2.3 per cent in 2016. As well as growth in earnings, the expected deflation means that households will experience an increase in real disposable income.

**TABLE 1** Inflation Measures

	2013	2014	2015	2016
	Annual Change			
	%	%	%	%
CPI	0.5	0.2	-0.1	1.0
Personal Consumption Deflator	1.7	1.7	1.0	1.5
HICP	0.5	0.3	0.1	1.2

Sources: Central Statistics Office and ESRI forecasts.

## Demand

### *Household Sector Consumption*

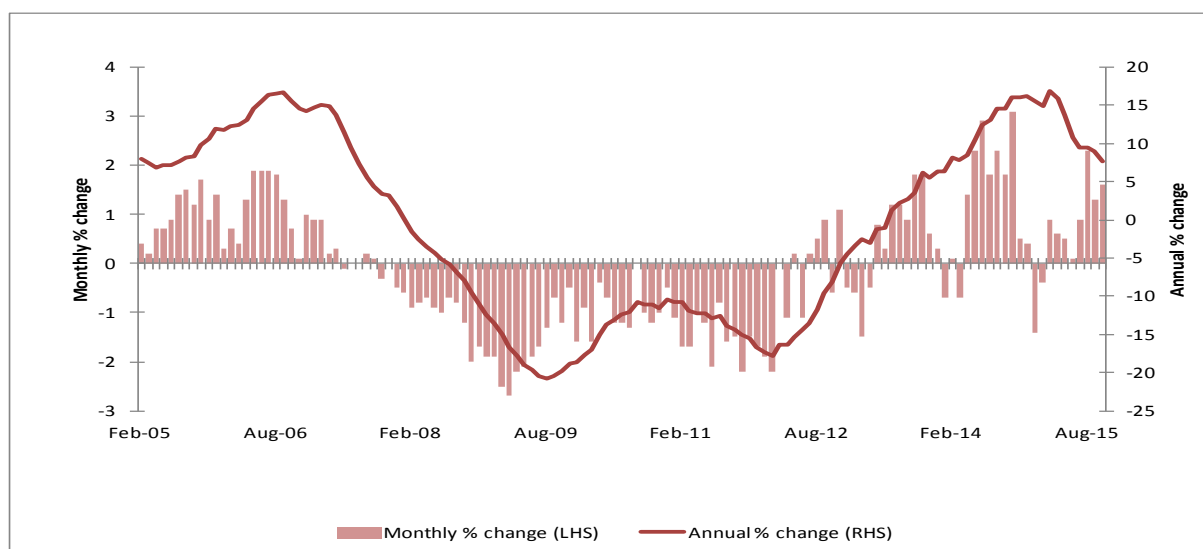
Quarterly National Accounts data for Quarter 3 show that growth in personal consumption increased in the third quarter, up by 3.6 per cent on the same period in 2014. The retail sales index has been strong throughout much of 2015,

with the volume of sales in July being the highest since July 2008. Exchequer Returns, VAT receipts and the continuing improvement in the labour market, coupled with rising consumer sentiment suggest that the growth in personal consumption will be higher this year than had been previously anticipated. Thus, we are now forecasting that growth in the volume of personal consumption will be 3.6 per cent this year, with value growth of 4.1 per cent. This implies a personal consumption deflator of 0.51 per cent, indicating that inflationary pressures in the economy remain low.

Many of the same factors are likely to underpin personal consumption growth in 2016. Interest rates are likely to remain low and some stimulus can be expected as the taxation changes announced in Budget 2016 come into force. As shown in the *Monetary and Financial Conditions* section, household debt levels remain high and deleveraging will have to continue. However, the data also show that the contraction in lending for consumption purposes has reduced substantially. Thus, we are forecasting that growth in personal consumption in 2016 will be broadly in line with this year. With the expected deflator on personal consumption increasing to 1 per cent, the value of personal consumption growth in 2016 is forecast to be 4.4 per cent.

#### *Property Market Developments*

The CSO Residential Property Price Index shows that prices rose nationally by 1.6 per cent in the month of October, up by 7.6 per cent on the same month last year. The Index shows that price growth in Dublin has slowed over the course of the year, up by 1 per cent in the month and by 4.5 per cent when compared with October 2014. For the first four months of the year Dublin property prices grew by over 20 per cent year-on-year in each month. In contrast, prices outside Dublin were up by 2.1 per cent in the month and by 10.7 per cent annually.

**FIGURE 16** Growth in Residential Property Prices, Monthly and Annual Percentage Change

Source: Central Statistics Office.

Data from the Private Residential Tenancies Board (PRTB) show that the growth in private rents has continued with national rents increasing by 8.6 per cent in the year to the third quarter of 2015. Dublin rents increased by 8.7 per cent while outside Dublin rents rose by 8.5 per cent in the year. Given the strong growth rates shown by private rents over the past couple of years a series of measures aimed at stabilising rents have been announced.<sup>26</sup> The main measure announced is the extension of the period for rent reviews from 12 to 24 months.

Other measures announced include a longer notice period of new rent, the provision of comparable rents in the area, and notification of rent increases to the PRTB. Measures are also being introduced to improve legal protection for tenants and to increase tenants' awareness of their rights.

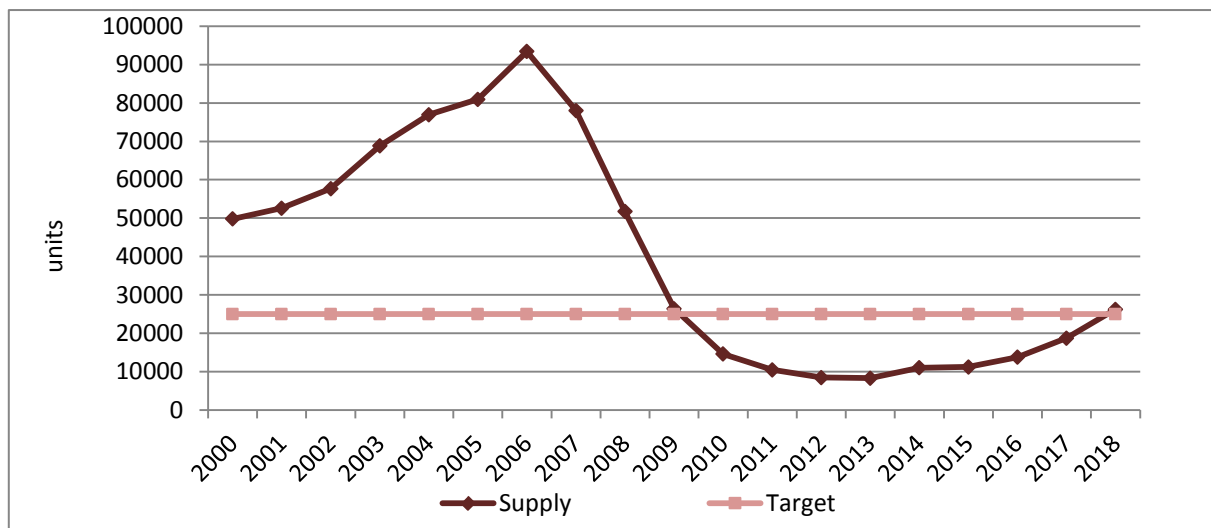
A number of factors may be influencing the residential market at present. The introduction of the macro-prudential rules could be impacting on demand levels, particularly in urban areas. It may also reflect the impact of house price growth outstripping any growth in incomes resulting in a negative impact on affordability. Asking prices on daft.ie show strong price growth in the commuter counties at present, indicating that demand may have shifted to some locations with better availability and affordability. In particular, the down payment requirement under the new macro-prudential regulations is likely to have adversely impacted on affordability amongst first-time buyers in Dublin especially.

<sup>26</sup> Department of Environment, Community and Local Government (2015). 'Stabilising Rents, Boosting Supply', November.

To get an idea of future housing supply levels we build on existing research on the housing market; Byrne et al. (2014)<sup>27</sup> estimate a structural level of housing demand, where they assume that this structural level is a function of the number of independent households in the State. The number of households is a product of population estimates and headship rates, all of which are derived from micro-level data sources. At present, Byrne et al. (2014) estimate that, based on this approach, 25,000 housing units per annum are required in the Irish market. In a recent application Addison-Smyth and McQuinn (2015)<sup>28</sup> use this structural level of housing demand as an indicator of fundamental supply in the market arguing that, in the long run, this structural level of demand is supplied to the market.

We now examine the relationship between this long-run level of supply and actual supply through a standard error correction model; i.e. we assume that the actual level of supply is related to the long-run level, and where a divergence occurs, that the actual level converges back to the long-run level over time. Forecasts of the actual supply level can then be obtained using forecasts of the independent households from Byrne et al. (2014). The results can be seen in Figure 17 where both the actual and future level of supply and the 25,000 unit ‘target’ are plotted.

**FIGURE 17** Actual and Future Levels of Housing Supply: 2000-2018



Source: QEC estimates.

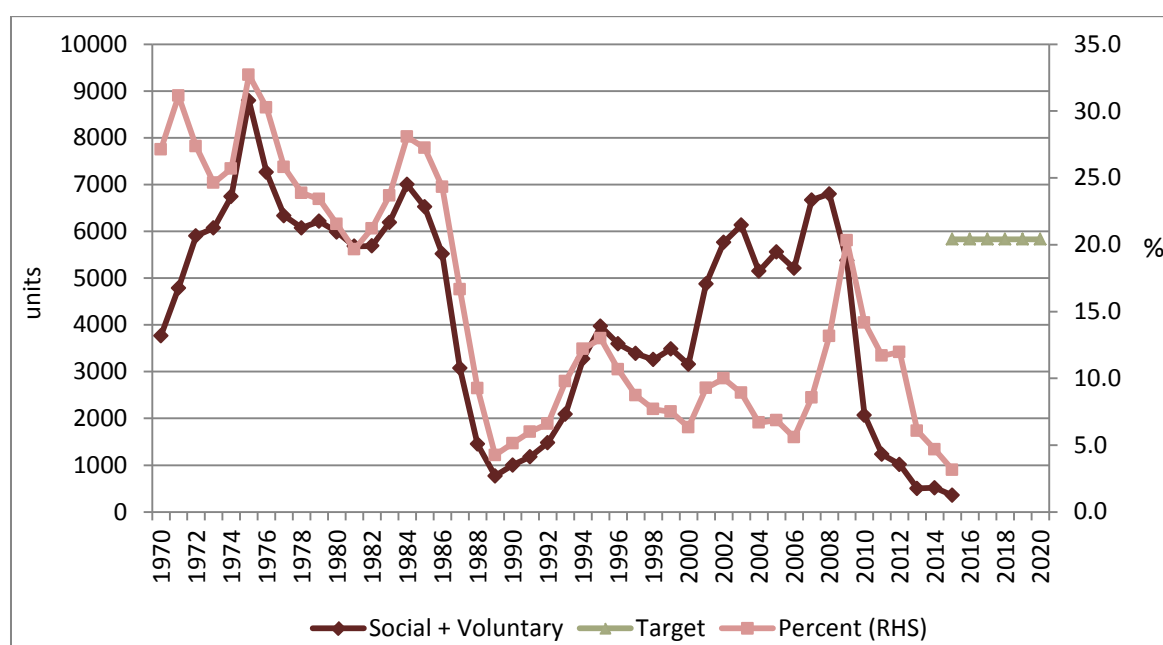
<sup>27</sup> Byrne, D. D. Duffy and J. FitzGerald (2014). Household Formation and Tenure Choice, *Quarterly Economic Commentary Research Note*, Summer.

<sup>28</sup> Addison-Smyth D. and K. McQuinn (2015). ‘Assessing the Sustainable Nature of Housing-Related Taxation Receipts: The Case of Ireland’, ESRI Working Paper No. 503.

Results from the exercise suggest that, if the historical relationship between the long-run fundamental price and the change in actual price holds into the future, then it will be 2018 at the earliest before the underlying demand in the market is met.

Given the shortages of supply in the Irish housing market and the ongoing policy debate concerning this issue, it is interesting to examine the provision of social housing through time. In Figure 18 we plot the total number of both local authority and voluntary non-profit housing provided in the Irish State since 1970. This is complemented with the percentage of the total number of houses constructed due to social housing over the same period.<sup>29</sup>

**FIGURE 18** Local Authority and Voluntary Non-Profit Houses: 1970-2015



Source: Department of the Environment, Community and Local Government and QEC estimates.

Also included are the targets specified in the Government's Social Housing Strategy 2020 (2014). It is clear that there has been a significant decline in the provision of social and voluntary housing since 2009 with just over 5,500 units built since then.<sup>30</sup> This is true both in the case of the actual units built and the percentage of the total number of housing units accounted for by social housing. Interestingly, at times during the 1970s and 1980s, social housing accounted for nearly one-third of the total stock of housing built in the economy for a given year.

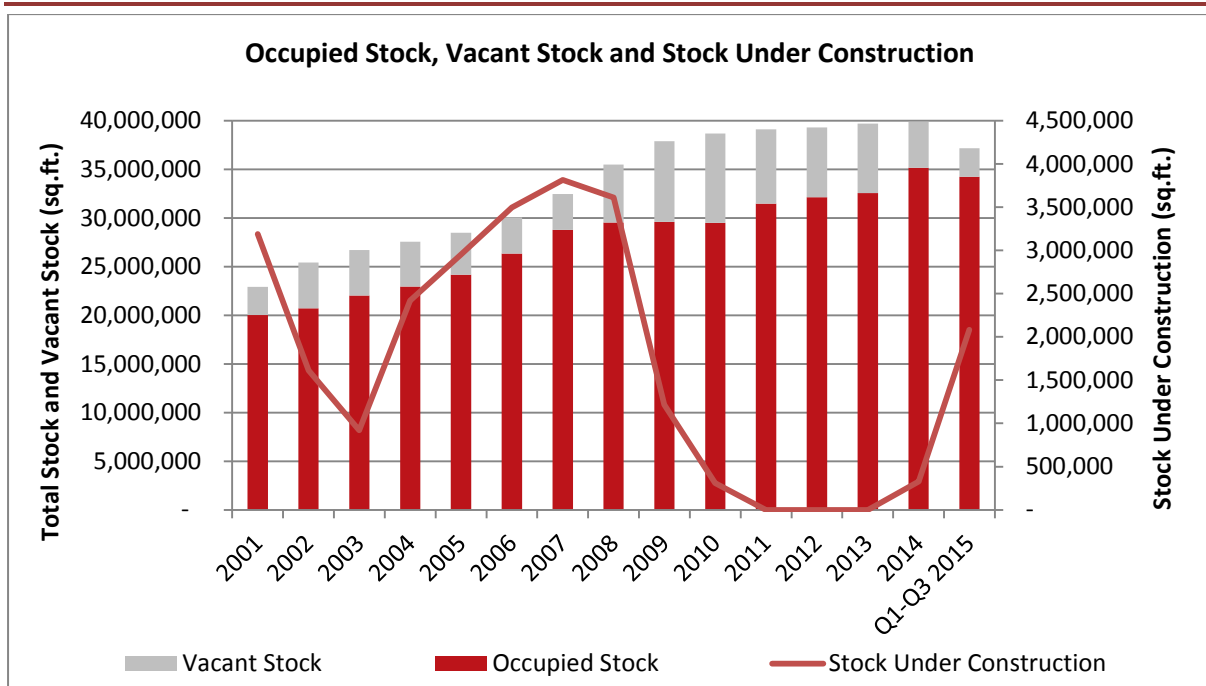
<sup>29</sup> Note: Care should be exercised in comparing data for this series between pre-2009 and post-2010. Up to 2010, completions relating to long term voids and demountables were included as new build completions.

<sup>30</sup> The Government commits to the provision of 35,000 social housing units over the six-year period 2015-2020 and the provision of 18,000 units over the period 2015-2018.

Furthermore, the targets outlined in the Government’s official response to the social housing issue indicate that over 5,800 units will have to be built per annum over the six-year period 2015-2020. Given the relatively low level of social housing units constructed in 2015, this suggests that this target is already under pressure.

Having peaked at close to 24 per cent in 2010, the vacancy rate for office property in the Dublin market is now estimated to be below 8 per cent. With no construction taking place for a number of years as a result of the financial crisis, activity levels have picked up and it is estimated that there is currently 2.1 million square feet of office space under construction in the Dublin market.<sup>31</sup> However, it is unlikely that substantial new office space will be supplied before 2017, with concerns that this could limit expansion of existing firms or the ability to attract new FDI.<sup>32</sup>

**FIGURE 19** Dublin Office Market Statistics



Source: Jones Lang LaSalle.

<sup>31</sup> Jones Lang LaSalle, Dublin Office Market report Q3 2015.

<sup>32</sup> Duffy, D. and H. Dwyer (2015). 'FDI and the availability of Dublin Office Space' *Quarterly Economic Commentary Research Note*, Autumn.

## Supply

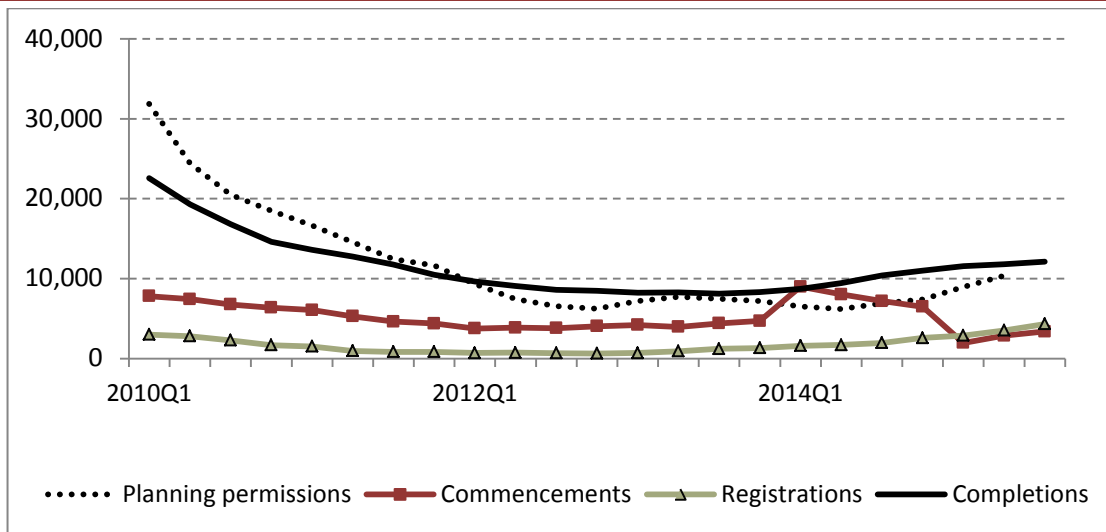
### *Investment*

The third quarter National Accounts show that gross domestic fixed capital formation, investment, grew by over 35 per cent compared to the third quarter of 2014. However, this is due to the purchases of patents, and underlying growth is not as strong as suggested by the headline numbers. As highlighted in previous *Commentaries* investment in building and construction has grown strongly in 2015. Indicators suggest that the level of house completions in 2015 will be only marginally higher than that achieved in 2014. Based on completions data and the CSO Index of Building and Construction, the volume of new residential investment is forecast to grow by over 14 per cent this year. However, as we have previously pointed out, this growth rate is from a very low base and so the increase in the level of completions will be moderate. We expect that, following completions of 11,016 last year, completions will reach 12,500 in 2015.

With demand for accommodation continuing to be strong, the need to boost housing supply remains important. A range of measures has been announced including a targeted development contribution rebate; the use of the Strategic Investment Fund to support housing-related enabling infrastructure in priority development areas; new planning guidelines on apartment standards; and the introduction of new legislative provisions for Strategic Development Zone (SDZ) planning schemes. In addition, NAMA is targeting the funding of the delivery of 20,000 residential units before the end of 2020. While these measures will provide some boost to residential construction, access to and the cost of funding remain a hurdle to development. However, both commencement notice and new house registration data suggest there will be some increase in activity in 2016 and on that basis we are forecasting that house completion will average approximately 13,100 in 2016. Most other forms of investment in building and construction seem set to continue their strong growth in 2016 reflecting low interest rates, low office space vacancy rates and economic growth. Thus, investment in building and construction is forecast to increase by 12.3 per cent in volume and by 13.7 per cent in value.



**FIGURE 20** Housing Market Indicators



Sources: Central Statistics Office and the Department of Environment, Community and Local Government.

The volume of investment in machinery and equipment is forecast to increase this year by over 37 per cent, reflecting the acquisition of intellectual property rights. Assuming that a continuation of purchases of patents combined with low interest rates and continued economic growth are likely to encourage both expansion and re-equipment, volume growth of just over 19 per cent in 2016 is forecast. If these forecasts prove to be correct, total investment will grow by 27.2 per cent in volume this year and by 28.5 per cent in value. In 2016 overall investment growth of 19.2 per cent in real terms is forecast, with the value of investment increasing by 22.3 per cent. As noted in the output section, the strong increases in investment in 2014 and 2015 results in the investment rate (as a percentage of GNP) in 2015 being back up to its historical average.<sup>33</sup>

*Labour Market*

The Quarterly National Household Survey (QNHS) for Q3 2015 published by the CSO reveals relatively robust improvements in the labour market. There was yet another decrease in the seasonally-adjusted unemployment rate, falling from 9.6 per cent in Q2 to 9.1 per cent in Q3. This marks an improvement of two percentage points over Q3 2014 and is the twelfth consecutive quarter where the rate has fallen. The significant fall over the year consisted of decreases in both male and female levels of unemployment.

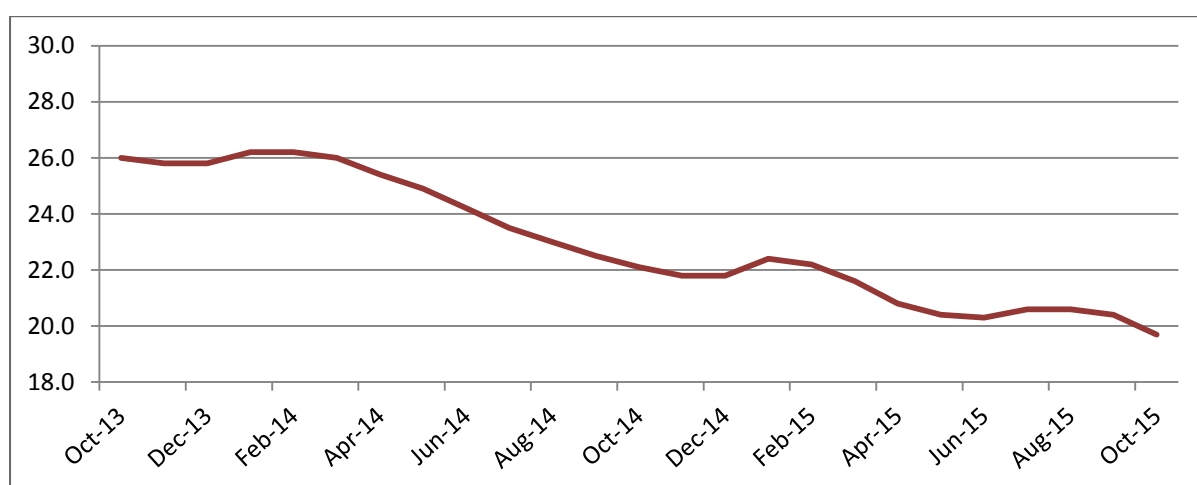
The level of male unemployment fell by 23,000 or 15.3 per cent while the level for females fell by 19,500 or 20.5 per cent over the year to Q3 2015. The number of persons classified as long-term unemployed decreased by 29,400 or 21.1 per cent over the year to Q3 2015. The long-term unemployment rate is now 5 per

<sup>33</sup> Over the period 1960-2015.

cent compared to 6.4 per cent in Q3 2014. Short-term unemployment also decreased, falling by 14,900 or 14.5 per cent.

Breaking down the age composition of the unemployment rate shows that youth (15-24 year-old) unemployment has continued its downward trend. Figure 21 shows the evolution of the seasonally-adjusted youth unemployment rate since 2013 and it currently stands at 19.7 per cent in October. This is still relatively high compared to historic levels and suggests there is further room for the rate to fall moving into 2016.

**FIGURE 21** Youth Unemployment Rate



Source: Central Statistics Office.

The relatively new monthly unemployment release from the CSO, which has officially replaced the standardised unemployment rate, shows unemployment in November of 8.9 per cent (Figure 22) compared to 10.4 per cent in November 2014. This decline in the unemployment rate is particularly important in an Irish context where, as noted by Kelly and McQuinn (2014),<sup>34</sup> unemployment is highly significant as far as movements in variables such as house prices and mortgage arrears is concerned. Therefore, in addition to the usual macroeconomic benefits, an improvement in the labour market also has positive implications for key Irish financial stability indicators.

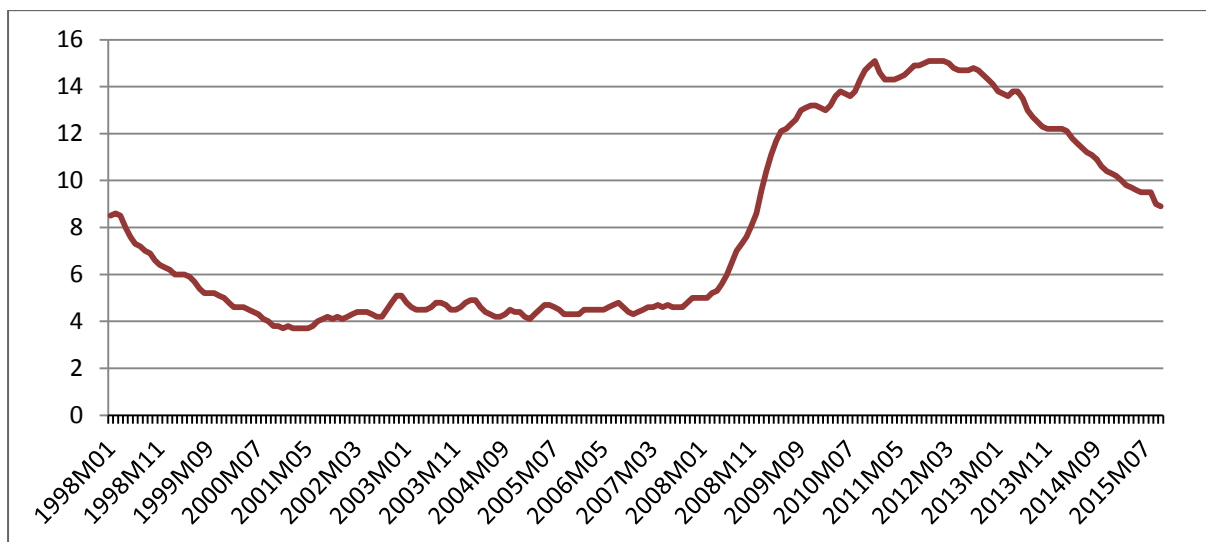
Employment growth was once again positive in Q3 with an annual increase of 2.9 per cent, representing an increase of 56,000. This compares to an annual increase of 3.0 per cent last quarter and an increase of 1.4 per cent in the year to Q3 2014. A breakdown of the figures reveals that employment increased in 12 of the 14

<sup>34</sup> Kelly R. and K. McQuinn (2014). 'On the hook for impaired bank lending: Do sovereign-bank inter-linkages affect the net cost of a fiscal stimulus?' *International Journal of Central Banking*, Vol. 10(2), pp.95-128.

sectors in the economy, suggesting a broad, economy-wide improvement. Among the sectors, the largest growth was observed in the construction sector of 13.3 per cent or 14,900 and the industry sector of 5.7 per cent or 13,500. The largest rate of decline occurred in the financial, insurance and real estate activities sector, falling 3.2 per cent or 3,300. As well as being broad-based, the increase in employment is exclusively driven by growth in full-time jobs.

CSO data show that public sector employment also increased in the year to Q3 2015 by 1.2 per cent from 371,800 to 376,300. A further breakdown of sectors within the public sector reveals that health saw the largest increase in the year to Q3 2015, rising by 2.4 per cent while defence saw the largest decrease, falling 1.0 per cent.

**FIGURE 22** Unemployment Rate



Source: Central Statistics Office.

Growth in annual employment over the past year has been reasonably well dispersed geographically. The most recent figures suggest that employment increased in all regions bar the West. It is, however important to note that the base levels and growth rates vary greatly between the regions as Table 2 shows.

As mentioned in the *Autumn Commentary*, the number of persons in the labour force is affected by changes in the size of the working-age population. This is known as the demographic effect and it continues to exert negative pressure on the labour force. In Q3 2015 this effect contributed to a decline of 3,700 in the overall change in the labour force. This negative demographic effect is exclusively concentrated in the 20-24 and 25-34 age groups. This highlights the importance of not only encouraging young people to enter the labour market but also of attracting back young emigrants. The Youth Guarantee programme implemented

by the government is an attempt to reduce youth unemployment rates and the risk of long-term youth unemployment. The problem is not without issues, however, as an upcoming report<sup>35</sup> highlights. The report finds that there are resource limitations associated with the implementation of the Youth Guarantee. There are also concerns with the lack of availability of quality employment offers and the effectiveness of the education and training offers available to Youth Guarantee participants.

Previous *Commentaries* noted that the participation rate had been decreasing towards the end of 2014. For the first three quarters of 2015 the rate has increased from 59.4 in Q1 to 60.5 in Q3. If this positive development continues we can expect the level of employment to increase above two million in early 2016, a level not seen since 2008.

**TABLE 2** Annual % Change in Employment by Region

Employment (000's)	Q3 2014	Q3 2015	Annual % Change
Border	190.7	195.4	2.5
Midland	112.8	119.2	5.7
West	181.9	180.2	-0.9
Dublin	576.5	605.6	5.0
Mid-East	229.6	231.2	0.7
Mid-West	155.6	157.4	1.2
South-East	202.6	207.4	2.4
South-West	277.2	286.5	3.4

Source: Central Statistics Office.

In terms of international comparisons our employment rate of 63.1 per cent is still slightly lower than the employment rate in the EU28 of 65.5 per cent. The highest level of unemployment in the EU28 in Q2 2015 was recorded in Greece and Spain, of 24.6 and 22.4 per cent respectively while the lowest rate of 4.7 per cent was recorded in Germany. The seasonally-adjusted unemployment rate for the month of October saw Ireland's rate at 8.9 per cent while the EU28 rate was 9.3 per cent.

In the *Autumn Commentary*, Ireland's recent economic performance was examined in the context of the downturn experienced post-2007/2008. In particular, much of the initial wave of the recovery was attributed to an increase in competitiveness resulting in export-led growth. In Figure 23 we plot Irish unit

<sup>35</sup> Mc Guinness, S. and A. Whelan (2015), 'Implementation of the 2013 Recommendation on establishing a Youth Guarantee', Unpublished report for the European Commission.

labour costs since 2000 to highlight the significant reduction in competitiveness prior to 2007 and the significant improvement since then.

**FIGURE 23** Irish Unit Labour Costs: 2000-2015



Source: European Central Bank Statistical Warehouse.  
 Note: Data are unit labour cost based on persons and are seasonally adjusted.

The deterioration in competitiveness from about 2003 onwards is clearly apparent with labour costs peaking at the end of 2008. Thereafter, wage costs fell considerably with the index in Q2 2015 now back to 2003 levels. Within the total fall in wages there are substantial compositional effects with the fall-off in employment in the construction sector post-2008 likely to have had a significant impact on overall costs.

Broadly in line with our forecasts from the previous *Commentary* as economic conditions have remained strong, we expect the average annual unemployment rate to reach 9.3 per cent by the end of 2015 and 7.9 per cent by 2016. We also forecast employment growth to remain robust in 2015 and reach the two million mark early in 2016.

**Public Finances**

The Exchequer Returns show that 2015 has been a very good year for the public finances. Returns to November illustrate that in the first 11 months of the year, tax revenue was 10 per cent higher than the same period in 2014, at €41.97 billion. This is 7.5 per cent higher than had been anticipated at the start of the year and is driven by much higher than anticipated receipts from corporation tax,

which had increased by 52 per cent year-on-year. Total expenditure<sup>36</sup> was marginally lower than profile by the end of November with higher than anticipated current expenditure being offset by lower capital expenditure and lower national debt interest.

Given the strength of growth in the economy reflected in the public finances over the course of the year, we have revised upwards our expectations for tax revenue. As highlighted above this is primarily the result of much higher corporation tax receipts. The White Paper on Receipts and Expenditure indicated that growth in expenditure in 2015 was likely to be higher by approximately €1.5 billion. However, in spite of some expenditure items being brought forward and over-runs on other expenditure items, the Exchequer Returns to the end of November indicate that the over-run for the year will be much smaller in scale. Based on these flows, it now seems likely that the general government deficit will be €2.3 billion in 2015, equivalent to -1.1 per cent of GDP. This reflects in part the high level of corporation tax receipts this year.

With economic and employment growth set to continue next year, it seems reasonable to expect that we will see a further substantial reduction in the deficit. Having accounted for 11 per cent of total tax revenue in 2014, corporation tax represented 15 per cent of revenue in 2015. Analysis by the Revenue Commissioners suggests that the increase reflects improved trading conditions associated with increased sales of internationally traded products. The Revenue Commissioners also expect that much of the higher corporation tax receipts will re-occur in 2016. However, annual changes in corporation tax receipts have tended to be volatile in nature and so some caution should be exercised with regard to receipts from this tax head in 2016. Taking account of our growth forecasts and assuming that the level of corporation tax receipts is not a temporary boost, the deficit is projected to decline to €1.2 billion, just over -0.5 per cent of GDP.

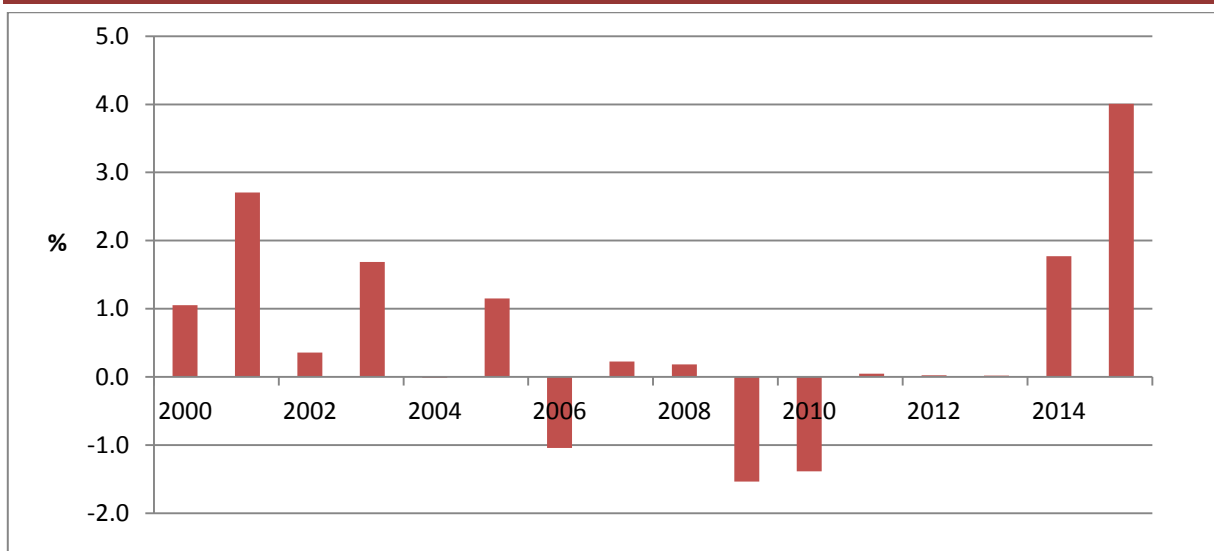
An integral component of the evaluation of medium-term fiscal policy is the multi-annual budgetary projection released by the Department of Finance each year. These projections of planned expenditure in different Government departments can, ex-post, be compared with the actual outturns for the particular year. For example, when the SPU is released initially (May of 2015), any overall assessment of the fiscal stance outlined is based on the forecasts of Government expenditure from end 2014. While there is any number of reasons why disparities can arise in the accuracy of such forecasts, particularly in volatile economic conditions, it is to be hoped that the forecast accuracy can be

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<sup>36</sup> Excluding transactions with no general government impact.

minimised in general and improved through time. In Figure 24 below, the one year ahead forecast error for gross Government current expenditure is plotted from 2000 onwards. One year ahead forecast relates to the forecast at the end of year  $t$  for expenditure in  $t+1$ .

**FIGURE 24** Gross Current Expenditure Deviation from Forecast: 2000-2015



Source: Reproduced by kind permission of the Irish Fiscal Advisory Council.

What is clear from the graph is the degree to which actual Government expenditure has deviated from the forecast level in 2014 and 2015. In 2015 the error at 4 per cent is particularly large. This contrasts sharply with the manner in which actual Government expenditure was in line with forecasts over the period 2011-2013. Analysis of the gross voted expenditure data suggests that overruns in the Department of Health are one of the main reasons for the deviation in 2015.

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## General Assessment

With an annual growth rate of 6.7 per cent, the Irish economy is set for a remarkable performance in 2015; this is the highest year-on-year growth in GDP since 2005. Overall, the growth performance for the present year shows a change in the composition from external trade to an increasing contribution from domestic sources; investment and consumption. While high levels of household debt and other financial crisis legacy issues continue to impact on many in the Irish economy, consumption has increased significantly among certain cohorts of the Irish population. The Nowcasting model indicates that growth was fairly evenly spread throughout the year with Q2 and Q3 experiencing particularly strong quarter-on-quarter growth rates.

Our expectation is that GNP will grow by 5.2 per cent in 2015. In 2014 GNP grew by almost 7 per cent contrasting with the 5.2 per cent increase in GDP for the same period. The rather large discrepancy between the two measures of output for this year and last is mainly due to the profit repatriation policies of some multinational firms (see FitzGerald, 2015<sup>37</sup> for more on this). This highlights the well-documented volatility in key Irish macroeconomic variables attributable to the relatively large presence of these firms. The recent takeover by Pfizer of Allergan will make Ireland home to the world's largest pharmaceutical company. While it is unclear whether there will be substantial taxation revenue benefits from having such an entity located in this jurisdiction, the potential impact on the volatility of key economic indicators should not be ignored.

While the previous *Commentary* noted that the economy was still in recovery phase, the cumulative effects of the strong performances in 2014, 2015 and expected outcome in 2016 should see the Irish economy returning to its potential level of output. To that effect, in the Output section of the present *Commentary*, we examine the recent Irish economic performance in light of longer-term trends in key economic variables. While unemployment rates currently at over 9 per cent indicate that the economy is still somewhat below its full capacity, the overall assessment of potential output is somewhat nuanced by the exceptionally strong rates of productivity growth observed in the Irish economy since 2011. Both labour productivity and total factor productivity in the Irish case have been growing at significant rates and consequently underpinning much of the post-2011 recovery. In that regard, the trends in these productivity rates are at

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<sup>37</sup> For more on this see FitzGerald J. (2015). 'Problems Interpreting National Accounts in a Globalised Economy – Ireland'. Special article *Quarterly Economic Commentary*, Summer.



variance with the decline observed more generally across most European and North American economies.

Over time it is reasonable to assume, however, that as greater levels of both labour and capital are employed in the economy, these strong increases in productivity will moderate back to longer-run trends. Therefore, given this likelihood and other factors in the economy, we believe that the Irish output gap, as at the end of 2015, is approximately minus one per cent. The output gap, particularly given developments in the European fiscal surveillance architecture and the budgetary rule, is of increasing importance as it ultimately determines the degree of fiscal space which exists for domestic policymakers.

In May of this year the Government released the Stability Programme Update (SPU) and signalled that the forthcoming budget would see an overall expansionary package of approximately €1.5 billion split between taxation measures and expenditure. In the Autumn *Commentary* we signalled that, given the apparent strength of the recovery in 2015, a neutral fiscal stance was the most appropriate position to take at this point. However, the pro-cyclical nature of the budgetary stance was compounded by the publication of the White Paper on Receipts and Expenditure. This indicated that voted Government expenditure (essentially day-to-day Government expenditure) was about €1.3 billion more than had been outlined in the SPU, thereby indicating that a stimulus of almost €2.8 billion was actually in effect for the Irish economy, reinforcing the pro-cyclical nature of the original package. It appears that most of the greater than expected expenditure occurred in the health area where current and capital expenditure in the year to October were significantly greater than forecast at the onset of 2015. This lack of fiscal discipline in health expenditure undermines the budgetary process and the spirit of the SPU which seeks to provide a medium-term fiscal plan compliant with the European Semester. The OECD, for example, in its latest economic survey of Ireland,<sup>38</sup> has highlighted, as a key recommendation, improved efficiency in health spending in ensuring future fiscal sustainability. This is not to suggest that the health area should not be in receipt of significant expenditure, merely to underline the volatility of the actual expenditure when compared with the initial projection.

In a Special Article Callan, Colgan, Logue, Savage and Walsh provide the customary analysis of the distributive impact of the budget. Using the ESRI tax-benefit 'SWITCH' model, the analysis suggests that Budget 2016 delivers similar income to the lowest-income quintile as a wage-indexed budget. For other income quintiles, Budget 2016 raises incomes by between half and three-quarters

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<sup>38</sup> Available online at [www.oecd.org/eco/surveys/Ireland-2015-overview.pdf](http://www.oecd.org/eco/surveys/Ireland-2015-overview.pdf).

of 1 per cent above the level that a neutral budget would provide. The small scale of this overall impact contrasts with perceptions of Budget 2016 as a major ‘giveaway’. This is because, with wage growth of close to two and a half per cent, the cost of a neutral budget – keeping average tax rates constant and welfare payments growing in line with wages – is itself substantial. Note the analysis includes the impact of the increase in the national minimum wage on the incomes of low-wage workers, but does not capture the potential impact on employers or owners of businesses employing these low-wage workers.

In a Special Article, Morley, Duffy and McQuinn conduct a review of housing supply policies in Ireland and internationally. This analysis, which comes as a timely contribution to the ongoing debate about supply-side issues in the Irish housing market, critically appraises different governmental approaches observed across countries used to tackle the issue of housing supply. Amongst the different aspects of government policy which potentially impact on housing supply, three measures are highlighted (i) planning regulations, (ii) taxation and (iii) infrastructural costs. International evidence identifies lower supply elasticity in countries with strict land-use and planning regulations, in particular in countries where it takes longer to acquire a building permit. Land taxes that increase in line with house/land prices are also shown to act as an incentive to sell/use underdeveloped or vacant land in periods of increased demand, while Government grants to subsidise stalled developments may provide some assistance in alleviating supply-side pressures. However, evidence from the UK suggests such grants can be difficult to implement effectively and the success of such schemes is notoriously difficult to quantify.

As far as housing matters are concerned, the recent debate on rent certainty was disappointing in that it is somewhat tangential to the major issue confronting the Irish property market; namely the lack of a significant housing supply response. While the rental measures outlined in November may provide some comfort to those experiencing sharp increases in the cost of accommodation, most importantly, the measures will not increase the provision of housing in the market. Recent research (Duffy et al., 2015<sup>39</sup>), along with estimates in the *Commentary*, suggests that it may take another three years before the level of housing supply in the Irish economy can meet the underlying structural demand for housing which currently exists.

In the Property Market Developments section of the *Commentary*, the historical provision of social housing in the Irish market is detailed and recent trends are

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<sup>39</sup> D. Duffy, D. Foley and K. McQuinn (2015). ‘Cross-country residential investment rates and the implications for supply response in Ireland’, Paper to the joint EU Commission / ESRI Seminar: Housing Ireland’s Recovery: Policy perspectives, Dublin, November.

then compared with social housing targets outlined in Social Housing Policy 2020 (2014). It is clear that these targets will be difficult to meet, in particular the commitment to provide 18,000 units over the period 2015-2018. Given the difficulties confronting the supply side of the Irish market (summarised recently in Barrett et al., 2015),<sup>40</sup> it is increasingly evident that one way for increased social housing to be provided is for the Government to engage, as previously happened, in an active policy of local authority housing provision. For example, over the period 2001 to 2009, between local authority and voluntary non-profit housing, over 51,000 units were provided in the Irish market. This compares with a *total* of 5,689 units from these sources since then.

We revise upwards marginally our outlook for the Irish economy in 2016; we now expect growth of 4.8 per cent in output with both consumption and investment expected to grow significantly. While export demand is also likely to be a key driver of growth next year, there are a number of risks for the traded sector of the Irish economy in the short to medium term.

One potential risk is the slowdown envisaged in 2016 in global trade (see OECD, 2015).<sup>41</sup> This is mainly centred amongst emerging economies where weaker commodity prices and lower potential output growth have caused recessions in countries such as Brazil and Russia. The other major concern in this regard is China. Some commentators (e.g. Buiter, 2015)<sup>42</sup> are now forecasting a hard landing for the Chinese economy in 2016. Were China to enter recession in 2016, it is entirely feasible that other emerging markets along with Russia and Brazil would also experience a downturn. All of these cases mainly represent secondary difficulties for the Irish economy in that they will only have a domestic impact through our major trading partners such as the United States, the United Kingdom and Europe. However any decline in overall world trade will ultimately hurt the export prospects of the Irish economy.

Another key trade related issue which may arise in 2016 is the likelihood of a UK referendum on EU membership. The potential for a UK exit from the EU (Brexit), which is the subject of a recent ESRI report (Barrett et al., 2015), poses a variety of difficulties for the Irish economy on a number of fronts. Estimates from the literature suggest that Brexit would significantly reduce bilateral trade flows by up to 20 per cent between Ireland and the UK. This impact would differ significantly across sectors and products. For merchandise trade in particular, trade is very concentrated in a few product types, which implies that increased

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<sup>40</sup> Barrett, A., D. Duffy and K. McQuinn (2015). 'Tax Breaks and the Residential Property Market', report by the Economic and Social Research Institute submitted to the Department of Finance, September.

<sup>41</sup> OECD Economic Outlook (2015). Available online at: [www.oecd.org/eco/outlook/economicoutlook.htm](http://www.oecd.org/eco/outlook/economicoutlook.htm).

<sup>42</sup> Buiter W. (2015). 'Is China Leading the World into Recession?', *Global Economic View*, Citibank. Available online at: <http://willembuiter.com/China2015.pdf>.

trade barriers for the most important products would have a particularly significant impact on total trade volumes. The sectors where the impacts are likely to be the most severe include Agriculture, Food and Beverages and Basic Metals.

# Detailed Forecast Tables

**FORECAST TABLE A1**

## Exports of Goods and Services

	2013	% change in 2014		2014	% change in 2015		2015	% change in 2016		2016
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	98.7	14.8	16.1	113.3	24.7	15.5	141.3	12.3	8.0	158.7
Tourism	3.4	8.5	6.6	3.7	6.5	6.0	3.9	4.2	3.2	4.1
Other Services	89.3	9.8	7.8	98.1	16.0	10.5	113.8	12.6	7.3	128.2
Exports Of Goods and Services	191.4	12.3	12.1	215.0	20.5	13.1	258.9	12.3	7.6	290.8
FISM Adjustment	0.0			0.0			0.0			0.0
Adjusted Exports	191.4	12.3	12.1	215.0	20.5	13.1	259.0	12.3	7.6	290.9

**Forecast Table A2**

## Investment

	2013	% change in 2014		2014	% change in 2015		2015	% change in 2016		2016
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Housing	3.2	20.0	13.5	3.8	13.1	5.7	4.3	21.6	18.4	5.2
Other Building	7.2	11.2	6.2	8.0	10.6	6.2	8.8	15.4	10.4	10.2
Transfer Costs	0.5	48.9	35.7	0.7	10.4	15.0	0.8	26.0	20.0	1.0
Building and Construction	10.8	15.5	9.7	12.5	11.4	6.6	13.9	18.0	13.4	16.4
Machinery and Equipment	20.8	15.1	16.7	24.0	37.4	37.3	33.0	24.2	21.4	40.9
Total Investment	31.7	15.3	14.3	36.5	28.5	27.2	46.9	22.3	19.2	57.4

**FORECAST TABLE A3** Personal Income

	2013	% change in 2014		2014	% change in 2015		2015	% change in 2016		2016
	€ bn	%	€ bn	€ bn	%	€ bn	€ bn	%	€ bn	€ bn
Agriculture, etc	3.2	6.4	0.2	3.4	1.0	0.0	3.4	2.5	0.1	3.5
Non-Agricultural Wages	67.7	3.5	2.4	70.0	4.9	3.4	73.5	5.0	3.7	77.1
Other Non-Agricultural Income	16.4	18.9	3.1	19.5	38.4	7.5	26.9	19.3	5.2	32.1
Total Income Received	87.2	6.5	5.6	92.9	11.8	10.9	103.8	8.6	8.9	112.8
Current Transfers	24.1	-1.4	-0.3	23.7	-1.0	-0.2	23.5	-1.3	-0.3	23.2
Gross Personal Income	111.3	4.8	5.3	116.6	9.2	10.7	127.3	6.8	8.6	135.9
Direct Personal Taxes	25.4	7.7	1.9	27.3	6.0	1.6	28.9	4.6	1.3	30.3
Personal Disposable Income	85.9	3.9	3.4	89.3	10.1	9.1	98.3	7.4	7.3	105.6
Consumption	85.7	3.8	3.2	89.0	4.1	3.7	92.6	4.4	4.1	96.7
Personal Savings	0.2		0.1	0.3		5.4	5.7		3.2	8.9
Savings Ratio	0.2			0.4			5.8			8.4
Average Personal Tax Rate	22.5			23.3			22.6			22.2

**FORECAST TABLE A4** Imports of Goods and Services

	2013	% change in 2014		2014	% change in 2015		2015	% change in 2016		2016
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	63.6	11.4	11.3	70.9	10.2	7.5	78.1	9.7	7.4	85.6
Tourism	4.7	-2.3	-2.7	4.6	5.1	2.0	4.8	4.9	1.8	5.0
Other Services	88.4	18.5	18.1	104.8	25.7	22.0	131.7	15.4	12.0	151.9
Imports of Goods and Services	156.8	15.0	0.0	180.3	19.1	0.0	214.6	13.0	0.0	242.6
FISM Adjustment	0.0			0.0			-0.2			-0.2
Adjusted Imports	156.8	15.0	14.7	180.3	18.9	15.7	214.4	13.0	10.1	242.4

**FORECAST TABLE A5** Balance of Payments

	2013	2014	2015	2016
	€ bn	€ bn	€ bn	€ bn
Exports of Goods and Services	191.4	215.0	258.9	290.8
Imports of Goods and Services	156.8	180.3	214.6	242.6
Net Factor Payments	-27.4	-26.2	-31.0	-32.0
Net Transfers	-2.9	-2.7	-2.7	-2.7
Balance on Current Account	4.3	6.0	10.8	13.8
As a % of GNP	2.8	3.7	5.9	6.9

**FORECAST TABLE A6** Employment and Unemployment, Annual Average

	2013	2014	2015	2016
	000s	000s	000s	000s
Agriculture	106.8	109.0	111.1	111.8
Industry	342.5	348.4	375.7	382.0
Of which: Construction	102.0	109.4	124.9	125.0
Services	1,430.9	1,453.3	1,475.4	1,524.2
Total at Work	1,880.2	1,913.7	1,967.4	2,018.0
Unemployed	282.4	243.2	199.5	173.0
Labour Force	2,163.4	2,156.9	2,166.9	2,191.0
Unemployment Rate, %	13.0	11.3	9.3	7.9



# Appendix



## Nowcasting Appendix

Throughout 2015 we have provided quarterly updates for GDP estimates based on the Nowcasting<sup>43</sup> model. Table 1 shows the Nowcast and forecast of GDP in the final two quarters of 2015.

**TABLE 1** Current Backcast and Nowcast of Irish Quarter-on-Quarter GDP Growth Rates

Period	Nature of Estimate	GDP Estimate %	95% Confidence Interval	
Q3 2015	Backcast	1.36		
Q4 2015	Nowcast	1.54	0.12	2.96

Source: Own estimates.

Through 2015, the Nowcasting has consistently suggested a growth rate of at least 6.5 per cent per annum for GDP. This matches the latest data from the CSO for Quarter 3, which indicates that GDP growth in Ireland for 2015 will be 7 per cent with the economy growing by 1.4 per cent between Q2 and Q3 this year. The Nowcast estimates provided in Table 1 suggest that growth will be slightly stronger in the final quarter of the year. Therefore, for the year as a whole, the Nowcasting suggests a growth rate of just over 6.8 per cent

As we noted in the *Autumn Commentary* the Nowcasting model to date has provided quite an accurate assessment of Irish output levels. Given the variances being observed in Irish economic performance over the past period of time, having an approach which provides a timely and accurate assessment of the underlying state of the economy is of particular benefit in generating the overall forecast of the economy in the *Commentary*.

<sup>43</sup> A detailed discussion of the Nowcasting model can be found in Byrne, D., K. McQuinn and C. Morley (2014). 'Nowcasting and the Need for Timely Estimates of Movements in Irish Output, *Research Note*, 2014/3/1, *ESRI Quarterly Economic Commentary*.



# Special Articles



# Distributional Impact of Tax, Welfare and Public Service Pay Policies: Budget 2016 and Budgets 2009-2016

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Tim Callan, Brian Colgan, Caitríona Logue, Michael Savage, John R. Walsh<sup>1</sup>

## Abstract

This article analyses the distributive impact of Budget 2016 using SWITCH, the ESRI tax-benefit model. The model analyses budgetary impacts on the nationally representative sample of households provided by the CSO's Survey on Income and Living Conditions. The impact of budgetary policy is measured against a distributionally-neutral budget, indexed in line with expected wage growth of just over 2.3 per cent in 2016. A similar analysis is also conducted on the distributive impact of budgetary policy over the eight years from 2009 to 2016.

Compared with a wage-indexed benchmark, we find that Budget 2016 led to a modest increase – just under 0.7 per cent – in aggregate household disposable income (i.e. incomes including welfare payments and net of income tax, USC and PRSI). For the 20 per cent of households with the lowest incomes, on average Budget 2016 will have a similar impact to a neutral, wage-indexed budget. For most other income groups, changes in Budget 2016 will lead to gains of close to 0.5 per cent up to 1 per cent, as compared with a neutral or wage-indexed budget.

By contrast, budgets over the 2009 to 2016 period have given rise to substantial income losses at all income levels, as budget deficits were reduced. These may be termed 'policy-induced losses' to distinguish them from falls in income arising from unemployment, lower wages or falling self-employment incomes. For most income groups, these losses were between 7½ per cent and just over 10 per cent. The greatest policy-induced losses were for the top income group, at just over 14 per cent, and the lowest income group, at 12¾ per cent.

Analysis at family unit level reveals that policy-induced losses ranged between 9 and 11 per cent for most family types from the combined effects of Budgets 2009

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<sup>1</sup> We thank CSO for access to SILC data on which the SWITCH tax-benefit model is based. We are grateful to Sean Lyons and Anne Pentecost for estimates of the distributional impact of indirect taxes. We thank anonymous referees for comments; any remaining errors or obscurities are the responsibility of the authors.

to 2016. The greatest proportionate losses, close to 20 per cent, were for single unemployed people without children – mainly those affected by cuts in payment rates for the young unemployed. The lowest losses were for those in receipt of old age pensions, as pension payment rates were increased by Budgets 2009 and 2016.

## Introduction

In this article we examine the distributional impact of the main tax and welfare measures in Budget 2016, together with the increase in the National Minimum Wage and the expansion of the scheme providing free pre-school places. We also consider the combined impact of budgetary policies since Budget 2009, which marked the start of Ireland's fiscal adjustment in response to the economic crisis.

The analysis uses SWITCH, the ESRI tax-benefit model,<sup>2</sup> to ensure that we obtain a nationally representative picture based on SILC (Survey of Income and Living Conditions), the CSO's main survey of household income. The scale, depth and diversity of this survey allows it to provide an overall picture of the impact of the budget on Irish households, which cannot be gained from selected example cases. The areas covered by SWITCH, including income tax, PRSI, USC, property tax, welfare benefits and public service remuneration, account for the bulk of the impact of budgetary policy changes on households' cash incomes in recent years. Last year the model was also extended to take account of water charges and the water conservation grant. There are, however, some taxes (e.g. indirect taxes, which affect the purchasing power of cash incomes) which cannot at present be integrated fully within the modelling framework; for a number of these we extend the analysis using other evidence.<sup>3</sup>

We do not, in general, attempt to measure the impact of cuts in public services on households at different income levels.<sup>4</sup> While this is an important area, there is no agreed standard methodology for the attribution of benefits from public spending to households. Thus, there is no agreed international approach which can simply be applied to Ireland. In recent years the UK Treasury (HM Treasury,

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<sup>2</sup> See Callan et al. (2013a) for a full description of the model.

<sup>3</sup> The methods referred to deal with the introduction of a carbon tax and a later increase in its rate; changes to VAT; increases in the Deposit Interest Retention Tax (DIRT); restrictions on pension tax reliefs for high income earners; restrictions on tax relief for medical insurance premia; and increases in Capital Gains Tax (CGT). For further details see Callan et al. (2013b).

<sup>4</sup> The inclusion of a valuation for the pre-school place provided under the Early Childhood Care and Education (ECCE) scheme is an exception. This arose from the fact that ECCE partially replaced a cash payment (Early Childcare Supplement).



2014) has begun to publish analyses which seek to distribute the value of public spending across the household income distribution. O’Dea and Preston (2012) raise some questions about the assumptions made and propose some alternative methods, but these methods have yet to be implemented.

The results we obtain relate to the ‘cash’ or ‘first round’ effects of policy changes, before any adjustments in individual behaviour such as changes in employment status or hours of work. This is by far the most common approach internationally (for example, this is the approach taken by the UK’s Institute for Fiscal Studies in its post-budget assessment, and by the Brookings/Urban Institute’s Tax Policy Center in the US in assessing new policy proposals). In other work (e.g. Savage et al., 2015a) we have examined the impact of tax and welfare changes on financial incentives to work such as marginal tax rates and replacement rates. The extent and nature of response to these financial incentives has also been examined in Layte and Callan (2001) and in Callan et al. (2009). The findings of such research need also to be taken into account when policy is trying to balance the sometimes conflicting objectives of equity and efficiency.

In this article, our focus is on impacts of budgetary policy at different income levels. Elsewhere (Savage et al., 2015b) we examine the overall evolution of the distribution of income and of risks of poverty. In future work we will update this using the results of the most recent Survey on Income and Living Conditions (CSO, 2015), which shows broad stability in income distribution developments between 2013 and 2014.

### **Measuring the Distributional Impact of Policy**

What has been the overall impact of Budget 2016 at different income levels and on different family types? How has the sequence of budgets since October 2008 affected households at different income levels? Analysis based on a large-scale nationally representative sample of households is essential in answering such questions. Calculations for selected example households, such as a one-earner couple with two children, cannot give an accurate picture of the impact of the budget for the population as a whole. This requires calculations for large numbers of real households in a nationally representative sample. The ESRI tax-benefit model (SWITCH) allows us to do this: it estimates the impact of direct tax and welfare changes using anonymised data from the CSO’s SILC.

The impact of policy change must be measured against an alternative specifying what would happen if the policy change did not take place (a ‘counterfactual’ policy). In the construction of budgets, the practice in Ireland has been to construct an ‘opening budget’ against which changes are measured. For tax and

welfare Ireland's conventional opening budget simply freezes tax rates, credits and welfare payments at their existing levels, whereas the UK and the US have adopted differing forms of indexation with respect to prices and/or wages (see Appendix 1 for further details). While the frozen benchmark is useful in accounting terms, it would be highly misleading in an analysis of distributional impact.<sup>5</sup> In normal times, with nominal wages, prices and real wages all showing positive growth, implementing the conventional opening budget would lead to real income *losses* for those dependent on welfare, while further up the income distribution incomes would *rise* (Callan et al. (2001), Bargain and Callan (2008)).<sup>6</sup> Furthermore, using the opening budget as a basis to measure policy impact would mean that measured policy impact would depend on government's definition of this default policy – something which varies across countries, and can change over time.

The alternative used here is a policy which indexes both tax and welfare parameters with respect to the expected growth or decline in wages. This ensures that average tax rates are held constant (i.e. no fiscal drag); and leads to approximately equal growth (or decline) in income across different income groups (Callan et al., 2001). It should be clear that this is designed to provide a 'distributionally neutral' benchmark, and is not intended as a policy recommendation. There are many reasons why it may be desirable to depart from this benchmark; but having a distributionally neutral benchmark, independent of the default position chosen by government, is essential in examining the distributional impact of policy changes.

We use forecasts of wage growth (or decline) to implement this approach on a prospective basis. Results examining the impact of Budget 2016 are based on forecast wage growth of 2.35 per cent – an average of the forecast wage growth from the current *Quarterly Economic Commentary* (Winter 2015; 2.3 per cent) and the Central Bank's *Quarterly Bulletin* (Central Bank of Ireland, 2015; 2.4 per cent). Similarly, for income growth between 2008 and 2016 we combine these forecast figures with the results on wage growth from the CSO's Earnings, Hours and Employment Costs Survey for the available years (2009 to 2014). Periods of falling wages during the recession mean that growth for the whole period (2009 to 2016) comes to 1.7 per cent, less than the growth in 2016.

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<sup>5</sup> For a more detailed exposition, see Callan et al. (2001).

<sup>6</sup> When wages are falling, the conventional benchmark would give rise to income gains for welfare recipients and income losses for those in employment.

Results shown are at the household level unless otherwise specified and are based on household disposable income (after taxes and benefits), adjusted for household size and composition, i.e. income per adult equivalent or 'equivalised income'.<sup>7</sup>

## Budget 2016

A wide range of taxation and welfare measures are directly included in our model-based analysis, including:

- The reduction of the rates of USC, the increase of the USC exemption limit, and the increase of the 3 per cent USC threshold to €18,668;
- The €5 per month increase in the standardised child benefit payment to €140;
- A Christmas bonus of 75 per cent of the weekly payment for people in receipt of long-term social welfare payments, as against a 25 per cent bonus in December 2014;
- The introduction of the new Earned Income Credit of €550 for self-employed persons not qualifying for the PAYE Credit;
- The introduction of a new tapered PRSI credit;
- Increases in the Home Carer's income threshold, in Family Income Supplement income thresholds, and Fuel Allowance;
- Increases in the personal rates and increases for qualified adults of the State Pension, and related payments, including carers and widow(er)s payments;
- The restoration of the Respite Care Grant (renamed the Carer's Support Grant) to €1,700;
- Changes to the Jobseeker's Transitional payment means-test.

Our analysis also includes an estimate of the impact of the increase in the National Minimum Wage (from €8.65 per hour to €9.15 per hour) on the incomes of low wage workers.<sup>8</sup> It should be noted that while the increase in income for such workers is taken into account, there is no mechanism at present for

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<sup>7</sup> This adjusts income to take account of household size. The scale used is the same as that used by the CSO in national statistics relating to poverty and income distribution in Ireland, i.e. 1 for the first adult, 0.66 for subsequent adults and 0.33 for children aged 14 or under.

<sup>8</sup> In principle, the counterfactual minimum wage used here could also be indexed in line with wage growth. However, at present, our calculations are based on an increase of 50 cents per hour; with wage indexation this figure would be 30 cents per hour. As the impacts of the 50 cent per hour increase are already small, this will make little difference to the overall results.

estimating the potential impact on employers or owners of businesses which will have to pay higher wages.<sup>9</sup>

Estimates of the impact of the extension of the Early Childhood Care and Education (ECCE) Scheme are also included. While this does not represent a cash payment, we attribute a value to parents based on the cost of provision of the service. While this is a commonly used valuation approach, it is far from being perfect – for a discussion of the difficulties and some alternative approaches, see O’Dea and Preston (2012). A similar approach could be adopted to the extension of free GP care to children, and the development of a framework which would allow such an approach is underway.

Changes to public sector pay in 2016 take quite a complex form. There are increases of 2.5 per cent for those on annualised salaries up to €24,000, with a smaller increase of 1 per cent for those on salaries above that level and up to €31,000. There are also reductions in the Pension Related Deduction (PRD) which apply more generally, and imply a fixed or flat-rate element to the effective pay increase for most employees. In deciding how best to treat such changes in the analysis, we need to recall that if the overall budget were to be indexed in line with private sector wage growth, then public sector pay changes would also be increased in line with the broad developments in private sector pay.

During the recession, public sector pay was reduced sharply relative to private sector pay,<sup>10</sup> and with a design which was intended to obtain particular distributional consequences. It was for this reason that it was included in our analysis of the policy response to the recession. The changes for 2016 are designed around an overall envelope in which public sector pay is likely to rise by no more than the forecast rise in overall earnings of just above 2 per cent. This would suggest that such pay increases belong more in the wage-indexed budget than as a special budgetary measure. For this reason, in our main analysis, we do not take account of the specific public sector pay measures for 2016. It could be argued, however, that the particular structure of public sector pay changes, with a focus on a flat rate element through the PRD, and on special increases at low pay rates has a distributional objective. As a result, the distributional consequences of these pay changes should be examined. Appendix 2, therefore, illustrates the sensitivity of the results to the inclusion or exclusion of public sector pay changes from the analysis.

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<sup>9</sup> Appendix 2 allows examination of results with and without the National Minimum Wage increase.

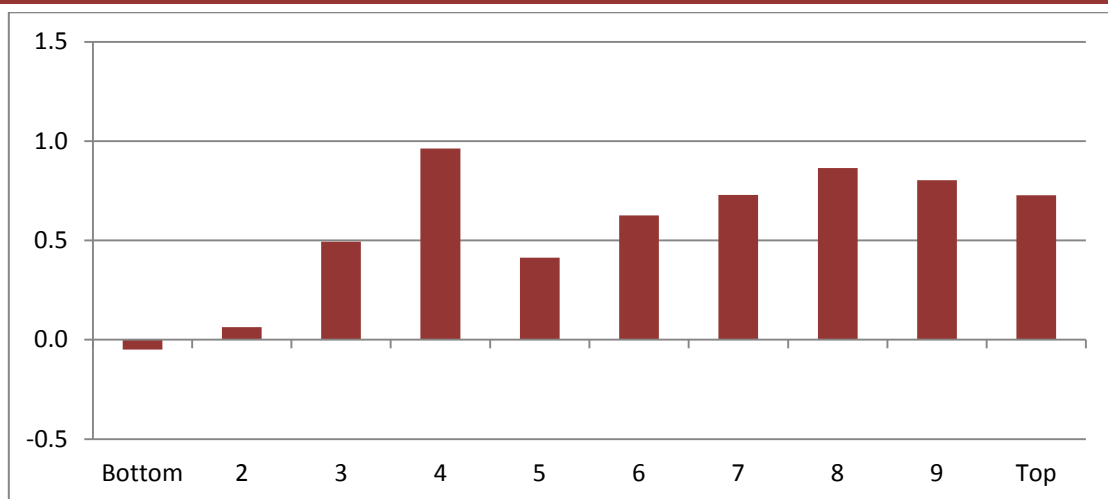
<sup>10</sup> Public sector pay had risen relative to private sector pay in previous years, as identified by Kelly et al. (2009).

Some changes are too complex to be included in the model at this stage. Chief among these are:

- Changes to excise duties on cigarettes and the rate of motor tax;
- The Back to Work Family Dividend, whereby long-term unemployed people may retain the child-related portion of their welfare payment; in full for one year, and 50 per cent for a second year;
- The Housing Assistance Payment, and additional resources allocated to the Rental Accommodation Scheme (RAS);
- The increase in the Capital Acquisitions Tax threshold;
- The introduction of Paternity Benefit.

Overall, the SWITCH model provides excellent coverage of the main policy changes in Budget 2016: the items included in the SWITCH analysis account for some €865 million of the tax and social insurance changes in the budget, representing over 90 per cent of the cost of all tax changes in Budget 2016. On the welfare side, SWITCH coverage is close to €400 million or almost 100 per cent of the cost of the welfare changes. Of those items not covered, some will have a positive impact on lower income groups (e.g. the Back to Work Family Dividend), but others will have an unfavourable impact (e.g. excise duties on tobacco).

**FIGURE 1** Impact of Budget 2016 – Percentage Change in Disposable Income by Income Decile Relative to Wage-Indexed Budget



*Source:* Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2015 and including changes to USC, income tax and welfare measures specified in the text, along with the impact of changes in the National Minimum Wage and expansion of the Early Childhood Care and Education scheme, valued at the cost of provision. Each income group contains one-tenth of all households, ranked from lowest to highest incomes. Budgetary impacts are assessed relative to a neutral budget with tax bands, tax credits and welfare payments increased in line with expected wage growth of 2.35 per cent.

Figure 1 shows the impact of Budget 2016, relative to a neutral, wage-indexed budget, across ten equally sized income groups (deciles) ranked from the lowest to the highest incomes, after adjustment for household size.<sup>11</sup> Budget 2016, compared with a neutral budget, indexing tax credits and welfare payments in line with expected wage growth of 2.35 per cent, has little impact on the incomes of the two deciles with lowest incomes. Looked at another way, Budget 2016 delivers similar income to the lowest income quintile as a wage-indexed budget: a substantial part of this came through the Christmas bonus rather than an increase in weekly payment rates. For other income deciles, Budget 2016 raises the incomes by between half and one per cent above the level a neutral budget would provide. The small scale of this overall impact contrasts with perceptions of Budget 2016 as a major ‘giveaway’. This is because, with wage growth of close to 2½ per cent, the cost of a neutrality – keeping average tax rates constant, and welfare payments growing in line with wages – is itself substantial. While the reduction in USC has attracted most attention, the freezing of income tax credits and bands in the face of rising incomes will, through ‘fiscal drag’, lead to a higher average income tax rate, offsetting a part of the USC reduction.

In order to understand the impact of changes in the national minimum wage (NMW), one must take account of the rather limited overlap between low pay and household poverty. This is a feature common to many countries, and has been confirmed in the Irish context by a number of studies.<sup>12</sup> Most households in poverty do not contain an employee; and of those which do, most do not contain a minimum wage employee.<sup>13</sup> Instead, low paid employees are found in a range of household situations: some are adult children living in households where the earnings of parents ensure that the household is not in poverty, others are second earners, and the earnings of primary and secondary earners are sufficient to bring the household above the poverty line. Employees in poor households are more often earning wage rates above the minimum, but fall below the poverty line because of the number of people depending on that income, or part-time working at a wage above the minimum. This is the group which is targeted by measures such as the Family Income Supplement and the Back to Work Family Dividend.

Given these structural features, it is not surprising that the social impact assessment of Budget 2016 (Department of Social Protection, 2015) finds that the

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<sup>11</sup> For details of the method used to adjust incomes for household size and composition, see footnote 7.

<sup>12</sup> For example, the initial study by Nolan (1993), and later studies related to the introduction of the minimum wage. A similar pattern can be found in the work of Collins (2015).

<sup>13</sup> Conversely, results in Collins (2015) indicate that 92 per cent of minimum wage employees are not in households at risk of poverty households (i.e. with incomes below 60 per cent of median household income per adult equivalent).

increase in the National Minimum Wage leads to only a small increase in the average income of the bottom quintile of households. Higher increases are found for quintiles 2, 3 and 4, with again a more limited impact on the top quintile. These patterns merit further investigation in the context of ongoing debate about the setting and structuring of the National Minimum Wage.

One other feature of Budget 2016 has attracted less attention, but is important from the point of view of structural reform, is the postponement of revaluations of residential properties for property tax purposes for a period of three years; this could lead to significant difficulties in the future. The IMF (2015) states that ‘maintaining timely property revaluations for revenue purposes would cement sustainability of the revenue base.’ This is because property taxes work best when there is regular updating of the valuation base. When valuations become outdated, disparities often emerge which bring the tax into disrepute – this was one of the factors which led to the demise of household rates. Pressure to defer revaluation is common: England has deferred revaluation for its Council Tax for more than 20 years. In this context, the decision to freeze property tax until 2019 is a serious concern.

### **Budgets 2009-2016**

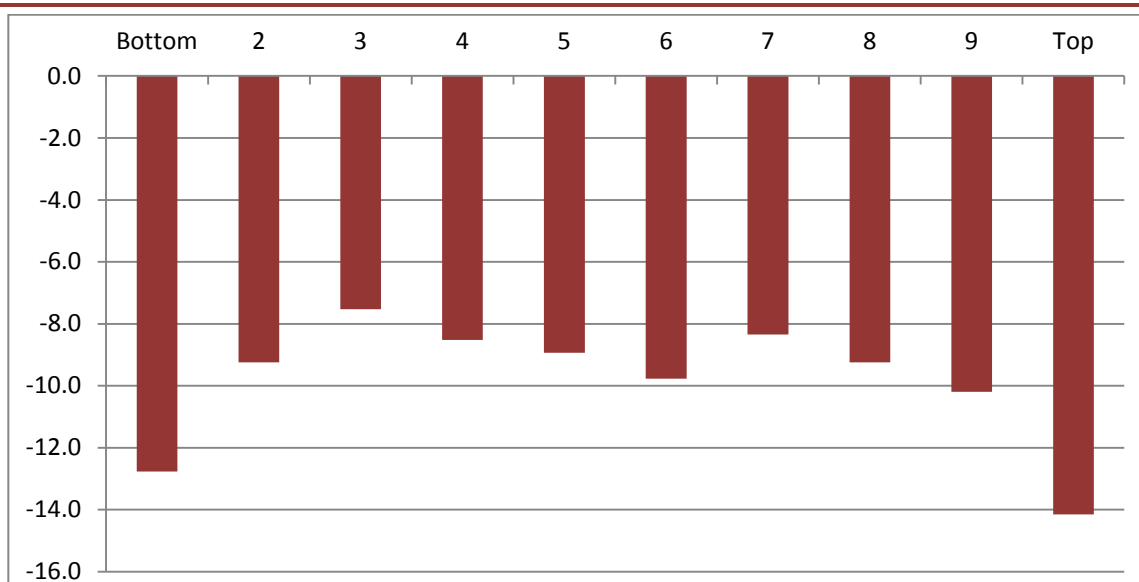
We now turn to the cumulative impact of the longer-run adjustment in budgetary policy, from the initial Budget 2009 (October 2008) up to and including Budget 2016. How have the changes implemented since the onset of the recession affected those at differing income levels? This analysis includes budgetary policy changes over an eight-year period, along with such measures as reductions in public sector pay and the introduction of water charges. Specifically, the policy changes analysed include all of those specified earlier for Budget 2016, along with:

- the main changes to income tax, including cuts to income tax credits and the width of the standard rate band;
- the introduction of Universal Social Charge and subsequent revisions;
- elimination of the PRSI ceiling;
- the net changes in welfare payment rates over the period, with pension payment rates retaining the increase awarded in October 2008, and working-age payments ultimately reduced below their 2008 levels;
- net reductions in Child Benefit payment rates, with cuts in earlier years only partly offset by increases in 2015 and 2016;
- reductions in Jobseeker’s Allowance for the young unemployed;
- the impact of the public sector pension levy (Pension Related Deduction, PRD);

- explicit cuts in public service pay in 2010 and in 2013;
- reductions in public service pensions;
- the introduction of the Local Property Tax;
- abolition of the Christmas Bonus in 2009, and its partial restoration in 2015 and 2016;
- cutbacks in certain elements of the Household Benefits Package;
- the impact of water charges, net of the water conservation grant.<sup>14</sup>

We augment the standard SWITCH model with estimates from other sources<sup>15</sup> of the distributional impact of a number of other policy changes.

**FIGURE 2** Impact of Budgetary Policy 2009-2016 – Percentage Change in Disposable Income by Income Decile



*Source:* Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2015 incorporating the main changes in direct tax, welfare and public service pay/pensions, the introduction of water charges and a water conservation payment, an increased National Minimum Wage and expansion of ECCE; augmented by results on carbon tax and VAT, DIRT, specific Budget 2014 restrictions of tax reliefs for pension contributions and medical insurance premia, and Capital Gains Tax as described in Callan et al. (2013b).

The overall scale of the impact of austerity policies is determined by macro-level decisions regarding the size of tax increases and the extent of the reduction in

<sup>14</sup> The rationale for this approach is given in Keane et al. (2014): 'While water charges are not technically a "budgetary measure" it is our view that they need to be taken into account when considering the impact of Budget 2015. Up to now, water services have been financed predominantly from taxation. The introduction of user charges for water can be seen as replacing some of the tax financing. From the point of view of an individual household, it will see a net benefit if its tax bill falls by more than the new water charge, and a net cost if the water charge is greater than a tax reduction.'

<sup>15</sup> See footnote 3. Details of the methods can be found in Callan et al. (2013b).



welfare payments and public service pay. The distribution of these income losses over income groups depends on the detail of budgetary decisions regarding tax structures, welfare payment rates and decisions on the structure of public service pay cuts. Figure 2 summarises how the adjustment is spread over income groups (deciles) ranked from poorest to richest, taking into account these detailed tax, welfare and public service pay decisions.

The highest losses were for the top decile, which is estimated as having lost 14¼ per cent of its income due to the policy changes examined here. The bottom decile is estimated as having policy-induced losses of 12¾ per cent. The lowest losses (7½ per cent) are for the third decile, which includes a higher than average representation of pensioner households. Losses for other deciles are in a relatively narrow range, between 8.3 and 10.2 per cent.

The comments we made on the pattern which emerged last year, for the 2009-2015 period, remain apposite: the results for Budgets 2009 to 2015 cannot be characterised in terms of simple patterns of progressivity or regressivity. Over a substantial range the pattern is broadly proportional, but this does not extend to whole income distribution. The greatest policy-induced losses have been at the top of the income distribution, and the next greatest losses at the bottom. Only the third decile had a significantly lower loss (under 8 per cent) than others.

### **Impact by Family Type**

The preceding analyses have examined the impact of the current budget, Budget 2016, and the impact of all budgets 2009-2016 across the income distribution. Here we examine how different family types have been affected by budgetary policy changes. The analysis is conducted at the level of what is termed a 'tax unit', i.e. an individual or couple, together with dependent children, if any. Young adults including third-level students are treated as independent tax units.<sup>16</sup>

Table 1 shows gains of 1.3 per cent for two-earner couples with children; 1 per cent for employed lone parents; and 0.8 to 0.9 per cent for single employees without children (about one in three of all tax units), two-earner couples without children, and single earner couples with children. There are smaller gains for one-earner couples without children (0.4 per cent). Retired persons (both singles and couples) and non-earning lone parents would obtain under Budget 2016 a similar outcome to that under a wage-indexed budget. Some categories, however, fare less well than under a wage-indexed budget, notably single unemployed persons

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<sup>16</sup> For this analysis, only the core modelled elements can be taken into account; it is not possible to cover the additional elements such as VAT changes, DIRT etc. in this analysis.

without children, unemployed couples, and tax units not elsewhere classified (a category which includes those with a disability).

**TABLE 1** Impact of Budgetary Policy 2009-2016 – Percentage Change in Disposable Income by Family Type

	Budget 2016	Budgets 2009-2016	Proportion of Families
	% change	% change	%
Single Retired Tax Unit	0.1	-4.7	11
Retired Couple	0.0	-5.7	8
Single Employed without Children	0.8	-6.9	34
All Other Tax Units	-1.0	-8.6	9
Single Earner Couple without Children	0.4	-9.5	5
Employed Lone Parent	1.0	-9.8	5
Dual Earner Couple without Children	0.9	-9.8	9
Dual Earner Couple with Children	1.3	-10.1	9
Single Earner Couple with Children	0.8	-10.7	9
Non-Earning Lone Parent	0.0	-10.7	1
Unemployed Couple	-0.5	-11.2	1
Single Unemployed without Children	-1.4	-22.3	3

*Source:* Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2015 incorporating for 2016 the main changes in direct tax, welfare, public service pay/pensions, water charges, the National Minimum Wage and the Early Childhood Care and Education (ECCE) Scheme.

In respect of Budgets 2009-2016, losses are larger and more widespread and there are no gains. Single unemployed people without children have experienced by far the largest losses (more than 22 per cent): this reflects the cuts to jobseeker payments for the young unemployed in particular. Most family types saw losses of between 8 and 11 per cent. The contributing factors to the losses vary by income level. At the lowest income levels, reductions in welfare payment rates, property tax and water charges play significant roles. At the highest income levels, major contributory factors are income-related taxes (income tax and USC) and cuts in public sector pay. The lowest losses, of between 5 and 6 per cent, were experienced by retired tax units, both single and couples. This reflects the protection afforded to pension payments throughout crisis budgets.

## Conclusion

Our analysis provides a nationally representative picture of the impact of the main tax and welfare changes in Budget 2016, taking into account the increase in the National Minimum Wage and the value (at cost of provision) of additional pre-schooling. The analysis is undertaken relative to a distributionally neutral budget, implemented via indexation of tax and welfare parameters in line with expected wage growth.

Compared with a wage-indexed benchmark, we find that Budget 2016 led to a modest increase – just under 0.7 per cent – in aggregate household disposable income (i.e. incomes including welfare payments and net of income tax, USC and PRSI). For the 20 per cent of households with the lowest incomes, on average Budget 2016 will have a similar impact to a neutral, wage-indexed budget. For most other income groups, changes in Budget 2016 will lead to gains of close to 0.5 per cent up to 1 per cent, as compared with a neutral or wage-indexed budget.

By contrast, budgets over the 2009 to 2016 period have given rise to substantial income losses at all income levels, as budget deficits were reduced. These may be termed ‘policy-induced losses’ to distinguish them from falls in income arising from unemployment, lower wages or falling self-employment incomes. For most income groups, these losses were between 7½ per cent and just over 10 per cent. The greatest policy-induced losses were for the top income group, at just over 14 per cent, and the lowest income group, at 12¾ per cent.

Analysis at family unit level reveals that the greatest losses imposed by Budgets 2009 to 2016 were for single unemployed people, while the lowest losses were for pensioners. This reflects the substantial cuts in welfare payment rates for the young unemployed in particular, and the fact that pension payment rates, unlike working-age payment rates, were increased by Budgets 2009 and 2016.

## Appendix 1 On the Need for a Distributionally Neutral Benchmark

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We noted that budgetary conventions governing the adjustment (or non-adjustment) of tax and benefit parameters can vary across countries and over time. Experiences in the UK, the US and Ireland illustrate this point. Each of these countries experienced high inflation during the 1970s. At that point, the default option for each country was that basic income tax parameters remained unchanged ('frozen') in nominal terms unless explicitly changed. During this time, failures to adjust nominal values of income tax parameters in line with earnings growth led to increases in average tax rates as higher incomes moved more income into brackets taxed at higher rates – a phenomenon known as 'fiscal drag' or 'bracket creep'.

### UK Experience

In the UK, the system was amended by the 1977 Finance Act which made uprating of income tax allowances in line with the Retail Prices Index the new default option.<sup>17</sup> Currently Pope et al. (2015) note that:

*Most bands and allowances are increased at the start (in April) of every tax year in line with statutory indexation provisions, unless Parliament intervenes. These increases are announced at the time of the annual Budget and are in line with the percentage increase in the consumer price index (CPI) in the year to the previous September. The additional-rate limit and the £100,000 threshold at which the personal allowance starts to be withdrawn are frozen in nominal terms each year unless Parliament intervenes.*

On the benefit side, Hood and Oakley (2014) summarise the situation as follows:

*Benefits and tax credits are usually uprated at the start of every financial year in line with prices. From 2011-2012, almost all benefits, tax credits and public service pensions have been indexed to the consumer prices index (CPI).... An important exception to the CPI-uprating of benefits is the 'triple-lock' guarantee for the state pension: since 2012-2013, it has been increased by the highest of earnings growth, CPI price inflation and 2.5 per cent. Thus, for 2014-2015, the state pension increased by CPI inflation (2.7 per cent) – the highest of these benchmarks.*

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<sup>17</sup> 'An Act of Parliament is required in order to increase income tax allowances by less than the increase in RPI, which means that the default option is that they be uprated in line with RPI.' Alt et al., 2012.

*By default, pension credit rates are uprated in line with earnings growth, but in recent years they have seen the same cash increase as the basic state pension, which has been more generous than earnings indexation.*

*The majority of benefits and tax credits for working-age people are to be increased by 1 per cent for three years from 2013-2014 (disability benefits and the disability elements of other benefits and tax credits such as child tax credit are excluded).*

Thus, UK experience includes the use of both price indexation and earnings indexation, and in more recent years a ‘triple lock’ involving the minimum of price inflation, earnings growth and a pre-specified fixed minimum rate. This mechanism would involve a ‘ratchet effect’ whereby pensions would rise faster than both prices and earnings in the medium to long run. This has been strongly criticised by Johnson (2015) who notes that:

*At some point it will prove to be prohibitively expensive; the Office for Budget Responsibility estimates that it will add well over one per cent of national income to pension spending by the middle of this century relative to the cost of earnings indexation. It also adds a bizarre degree of randomness into the future level of state pensions which will depend not on overall increases in prices or earnings but on the timing of those rises.*

The UK experience shows how the default policy has changed substantially over the years, with systems containing the following elements in operation at different times:

- No automatic indexation, and all changes being regarded as discretionary;
- Widespread indexation of taxes and benefits to the Retail Price Index;
- Differential indexation of pension-related benefits and credits and working-age payments, with pension-related benefits linked to earnings or to the minimum of earnings, prices and a fixed minimum rate of increase;
- A shift from the use of the Retail Price Index to the Consumer Price Index.

### **US Experience**

In the US, the Economic Recovery Tax Act of 1981 (ERTA81), introduced indexation of individual income tax parameters which became effective in 1985 (Bargain et al., 2014). Most US states also adopt some form of indexation. The Bureau of Labor Statistics ([www.bls.gov/dolfaq/bls\\_ques1.htm](http://www.bls.gov/dolfaq/bls_ques1.htm)) notes that the Consumer Price Index is used to provide automatic adjustments of payments to

almost 50 million Social Security beneficiaries and 20 million food stamp recipients.

### **Ireland**

There has been little by way of explicit and automatic indexation of the Irish income tax system along the lines seen in the UK and the US. Adjustment of the money value of most tax and welfare parameters has remained a matter for discretionary decisions within each budget. For a period, there was provision in the capital gains tax system for indexation of the costs of acquisition of capital assets, when calculating capital gains; these indexation provisions have, however, been abolished. One other area where the opening budget allowed for some adjustment of a nominal parameter was with respect to the former income ceiling on PRSI contributions. This tended to rise broadly in line with earnings, but as the limit has been abolished, this is no longer a feature.

Official analyses of the distributional impact of Irish budgets have focused on impacts measured against a scenario in which tax and welfare parameters are frozen in nominal terms. The recent Social Impact Assessment of Budget 2015 (Department of Social Protection, 2015) continues in this tradition, now using the SWITCH model to implement this framework.

### **Implications**

Money-valued tax and welfare parameters may, by default, remain unchanged or be adjusted in line with a measure of price inflation or wage growth. Government choices on this issue vary across countries and over time. If the impact of policy is measured relative to the default policy chosen by government the outcomes are sensitive to government's choice of the default policy. A standard which is independent of such government choices is desirable. The 'distributionally neutral' benchmark described in the text provides a measure of policy impact which is independent of government's choice of default policy, and has a number of desirable features. It is macroeconomically neutral – average tax rates are constant from year to year – and it is distributionally neutral – average incomes rise by the same proportion at different income levels, so that income shares remain constant.

## Appendix 2 Sensitivity of Results to Alternative Treatments of Minimum Wage and Public Sector Pay Changes

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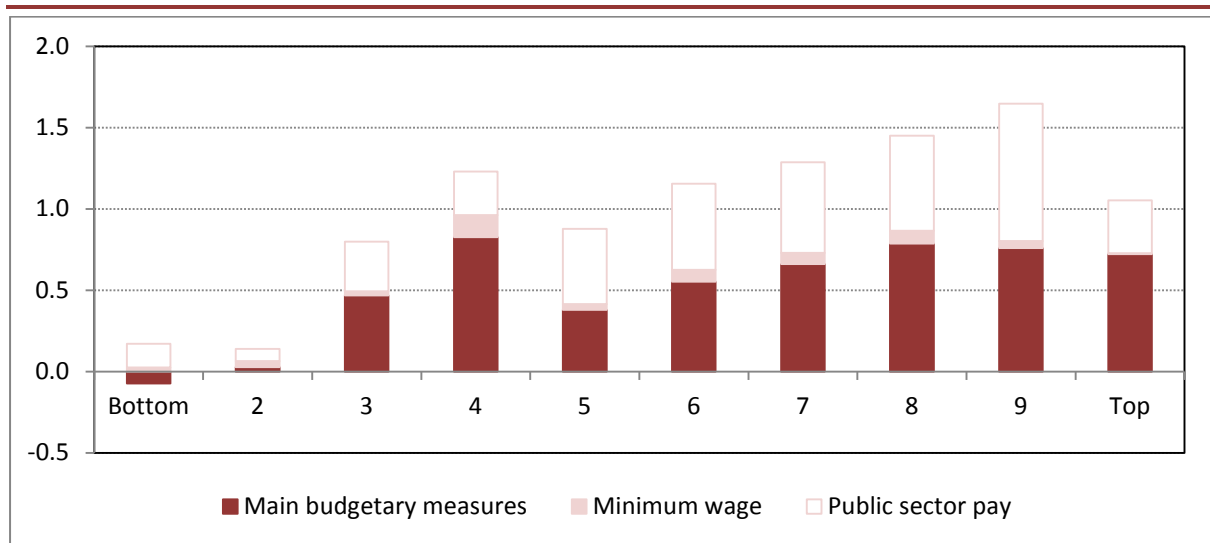
In our preferred approach, we regarded the 2016 public sector pay adjustments as approximately equal to private sector wage growth, and therefore forming part of the baseline wage-indexed budget rather than a discretionary or special measure. It could be argued, however, that the nature of the public sector wage adjustments – close to a flat rate money amount from PRD, and explicit percentage increases only for the lowest pay scales – means that they should be examined as a distinct policy measure. In Figure A.1, we examine how these public sector pay changes would alter the picture provided earlier in Figure 1.

Similarly, our preferred approach included the impact of an increase in the National Minimum Wage; while some would argue that as this is paid for by employers, it should not be included on a par with tax and welfare adjustments. Figure A.1 again helps to identify the impact of including or excluding the National Minimum Wage change in the modelling approach.

Figure A.1 shows that the impact of the 50 cent increase in the hourly National Minimum Wage is quite limited in scale. As a result, analysis excluding the NMW impact would make little difference to the conclusions in the main text. It is noticeable that the NMW leads to small impacts spread quite widely across the household income distribution – the reasons for this are discussed in the main text.

Figure A.1 shows that the public sector wage changes have a somewhat greater impact. However, these changes tend to lead to a greater divergence between income growth for middle and most upper income groups and the quintile of households with lowest incomes. The explicit shaping of public sector wage changes towards lower incomes is reflected in the limitation of such gains in the top decile, but does not result in a greater gain for those in the bottom quintile of the household income distribution.

**FIGURE A.1** Impact of Budget 2016 – Percentage Change in Disposable Income by Income Decile Relative to Wage-Indexed Budget: Sensitivity Analysis to Alternative Treatments of Changes in the National Minimum Wage and Public Sector Pay



*Source:* Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2015 and including changes to USC, income tax and welfare measures specified in the text, along with the impact of changes in the National Minimum Wage and expansion of the Early Childhood Care and Education scheme, valued at the cost of provision. Each income group contains one-tenth of all households, ranked from lowest to highest incomes. Budgetary impacts are assessed relative to a neutral budget with tax bands, tax credits and welfare payments increased in line with expected wage growth of 2.35 per cent.



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# A Review of Housing Supply Policies

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Ciara Morley, David Duffy and Kieran McQuinn<sup>1</sup>

## Introduction

The significant variation in house prices observed across many OECD countries has attracted much attention and resulted in a greater level of understanding of the demand side of housing markets. The international literature on house prices has, in light of the many housing booms and busts observed, increased substantially. However, less attention has been devoted to understanding the supply side of the housing market. Vermeulen and Rouwendal (2007) note that in spite of a growing recognition of the importance of supply conditions for the level and volatility of house prices and the demand for housing, empirical work on housing supply outside the US is still relatively scarce. To some extent this has been due to a lack of appropriate supply-side data. However in recent times this issue has become less of a problem.

Gyourko (2009), amongst others, has highlighted the fact that a thorough understanding of not only demand but also supply is essential for understanding the workings of any market. Recent developments in housing markets internationally have led to a heightened interest in the supply side of housing markets.

It is a stylized fact that the supply response, internationally, to demand-side factors such as income, interest rates, house prices and demographic pressures can vary substantially. There are many potential reasons or ‘frictions’ for the heterogeneity observed in supply. Given the importance of regulatory costs along with building costs as a key determinant of supply responsiveness, certain economies have attempted to overcome supply-side ‘frictions’ through government interventions. As outlined by Barker (2004) these interventions can include economic instruments, such as taxation, which influences choices by altering incentives in the housing market; regulation, which can determine the amount of housing that can be supplied, its location and nature; and finally subsidies, which take the form of the provision of social and affordable housing, which primarily address issues of equity.

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These interventions can and do lead to varying outcomes and so it is important that certain aspects of the housing market are considered before implementing such policies. For example, one needs to determine and understand the causes of under-supply of residential housing in the economy. If it is related to issues of land availability then interventions such as land or property taxes may be most appropriate. In Denmark for example land taxes have been introduced which increase in line with land prices which generally results in land becoming available when most needed. A recent OECD report<sup>2</sup> identified the flip-side to lagging housing supply however. It noted that in countries with relatively flexible supply, housing investment adjusts more rapidly to large changes in demand and this contributes to more cyclical swings in economic growth, as witnessed in recent developments.

While there has been a significant body of research devoted to analysis of Irish house price movements, there has been only a handful of studies examining the supply side of the Irish market. Kenny (1998), for example, in noting that Irish housing supply is very inelastic in the short-run, also re-examines the relatively high cost of supply, the durability of supply, and its heterogeneity. These issues were initially highlighted in a previous study by Quigley (1992). Smith et al. (1988) also examine the extensive involvement of government as a significant cause of inelasticity in the Irish case.

Therefore, it appears especially opportune at this stage of Ireland's economic recovery to assess our current understanding of the supply side of the housing market. In particular, the purpose of this review is to provide insight into the types of cross-country interventions aimed at stimulating housing supply and assess the implications of this for the Irish market. The rest of this paper is laid out as follows; in the next section we review cross-country estimates of housing supply elasticities, this is followed by a review of taxation and incentives, with subsequent sections addressing the role played by infrastructure, access to development finance and planning regulations. A final section offers some concluding comments.

### Supply Elasticity

Across all aspects of the housing supply literature, the issue of supply responsiveness or elasticity is emphasised. Malpezzi and Maclennan (2001) shed

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<sup>2</sup> Andrews, D., A. Caldera Sanchez and A. Johansson (2011). 'Housing and the economy: policies for renovation', *Economic Policy Reforms: Going for Growth*.

light on the fact that most housing models, and most policy analyses, hinge on explicit or implicit estimates of the price elasticity of supply of housing.

In an earlier contribution, Quigley (1979) highlights the real analytical difficulties for modelling supply. Unlike other markets where one observes price per standard unit, in the housing market, housing expenditure is observed. There is however no standard housing quantity since each unit can vary considerably on many quality dimensions. Similarly, it is difficult to ascertain supply based on type, as for example one large house may be re-developed into several smaller apartments. In order to understand the micro foundations of housing supply, Quigley (1979) asserts that several key pieces of information are required such as the quality and quantity of housing services offered by the supplier as well as maintenance and capital improvement decisions, rents, and asset values.

It is therefore important, when introducing regulations and policies dealing with supply, to understand how the market, in terms of housing supply and house prices, responds to demand-side shocks.

It is well documented that the United Kingdom housing market is extremely unresponsive to any changes in price. In terms of elasticities, Barker (2003, 2004) notes that UK house building is only half as responsive as the French, a third as responsive as the US and only a quarter as responsive as German house building. Swank et al. (2003) derived similar estimates in their analysis (see Table 1). Barker (2003, 2004) does, however, observe that international comparisons of supply elasticities need to be treated carefully because of structural differences in the way the house building industry operates.

Ball et al. (2011) comment further on the observation made by Barker (2003, 2004) and claim that differences in supply elasticities occur because of differences in measurement. Numerous models in the literature concentrate on the responsiveness of housing supply to the level of house prices while others concentrate on the response to the change in prices. Uniformly in the literature, the price elasticity of supply with respect to changes is much higher than with respect to levels. They highlight that international estimates can be found that range from approximately zero to infinity, but this is clearly not helpful for policy.

Despite differences in the methodologies used to calculate elasticities there does appear to be an emerging consensus on the main variables that affect housing supply and new construction. These include house prices; construction costs;

credit costs and availability; topology; land use regulation, uncertainty and impact fees.<sup>3</sup>

In relation to boom-bust cycles, Pryce (1999) estimates that the elasticity of supply of housing during booms (0.58) is smaller than during slumps (1.03) in the UK market. He also estimates the supply of land to be more stable over the cycle and marginally greater (0.75) during booms than during slumps (0.71). This means that housebuilders can be more responsive when prices are falling (through cuts in housebuilding levels), than when prices are rising (through increased activity). This is partly because of the long time-lags that are needed to increase the amount of land – the main factor of production.

**TABLE 1** INTERNATIONAL COMPARISON OF PRICE ELASTICITY OF THE SUPPLY OF NEW HOUSING

Country	Supply Elasticity
Germany	2.05
United States	1.40
France	1.09
Denmark	0.66
United Kingdom	0.45
Netherlands	0.30

*Source:* Swank, J., J. Kakes and A. Tieman (2003). 'The housing ladder, taxation, and borrowing constraints'. *Research Memorandum 0209*.

*Note:* Time periods over which the estimates are made are: UK: 1976-1999; Germany: 1976-1999; France: 1981-1998; Netherlands: 1976-1998; Denmark: 1980-1999; US: 1970-1999.

Analysis of the supply side of the market including the elasticity of supply is still relatively limited outside of the US and the UK. However we do know, from OECD estimates,<sup>4</sup> that in both North America and certain Nordic countries the long-run price responsiveness of new housing is quite strong. This compares to continental European countries where the relationship is much weaker. Swank et al. (2003) provide an international comparison of price elasticity of the supply of new housing (see Table 1). While caution is warranted in terms of comparisons it is interesting to note the substantial gap between Germany with elasticity greater than unity and that recorded for Netherlands. Differences in mortgage interest deductions, as highlighted by the authors, may go some way to explaining the different elasticities in the Netherlands and the UK and Denmark.

<sup>3</sup> An impact fee is a fee that is imposed by a local government within the United States on a new or proposed development project to pay for all or a portion of the costs of providing public services to the new development. In Ireland impact fees are equivalent to development fees.

<sup>4</sup> Andrews, D., A. Caldera Sánchez and Å. Johansson (2011). 'Housing and the economy: policies for renovation', OECD *Economic Policy Reforms: Going for Growth*.



## Taxation and Incentives

There have been a number of reports on the tax incentives, such as the Urban-, Town- and Rural-Renewal schemes, introduced in the early nineties to incentivise construction in the Irish Economy. While helpful in contributing to significant economic regeneration, it is generally accepted that many of the incentives introduced in this period were extended to such an extent that any benefit generated was outweighed by the associated costs.

Williams and Boyle (2012) draw on research that confirms that selective tax waivers and other incentives for developers, investors and residents can play a significant role in improving the physical and economic environment in cities. In the analysis of property market failures in Dublin, Williams and Boyle (2012) focus on the role of property tax incentives in urban regeneration and provide an overview of the benefits, costs and impacts of the incentives from an urban development market perspective. The research shows that property-based tax incentives were, in the period 1986-2011, initially successful in achieving physical development objectives. The research also highlights critical issues that arose in the latter years of the period. Most notable is the fact that successive governments failed to terminate interventions once market development activity recovered.

Both Indecon (2005) and Goodbody (2005) review the various policies introduced to stimulate construction in the lead up to the housing boom. Indecon (2005), on behalf of the Department of Finance, performed a major review of tax incentives in place in 2005. The report provides a positive assessment of many of the schemes. For example, in discussing capital allowances for hotels and holiday camps, they noted that

*the existence of the tax incentive (had) improved both the quality and quantity of supply and the levels of investment experiences since 1997 would not have occurred in the absence of the incentive.*

However, they expressed a clear view that many of the schemes were no longer needed by 2005 and that their continuation could have negative consequences and in particular would constitute a deadweight which was becoming evident in the property-related reliefs.

Central to the report's findings were the recommendations that the decision to introduce any new incentives should be informed by a formal assessment of the likely costs and benefits. In conjunction with this, any tax incentive schemes

which are introduced should have a defined lifespan of a maximum of three years and extensions should only be considered after evaluation of the results of a formal cost-benefit appraisal.

Goodbody (2005) on the other hand reviewed area-based schemes as part of a broader review of tax reliefs. With respect to the Urban Renewal Scheme they comment that ‘the scheme has had very positive effects on dereliction’ and also that it has ‘enhanced housing output in the target areas’. Like Indecon (2005), Goodbody (2005) expressed a view that the need for such schemes had passed by 2005.

Goodbody (2005) also note that the tax benefits of the Urban Renewal Scheme had accrued to a relatively small number of high-income earners and so ran counter to policy objectives on income distribution. They also note that the scheme had led to inflation in property prices. This point on the impact of property-related tax reliefs on property prices was taken up by Regling and Watson (2010) who argue that these tax reliefs contributed to the property bubble of the 2000s. They also argue that extension of tax reliefs (property-related and others) added to the erosion of the tax base which was so problematic when the crash of 2008 occurred.

The examination of the various schemes introduced prior to the housing boom indicates that while the schemes appear, for the most part, to have been initially beneficial for the economy, the issues lay in the fact that many schemes were extended several times over without adequate cost-benefit analyses being conducted.

The *Urban Regeneration and Housing Act 2015* was signed into law in Ireland in 2015 and has become widely known as the ‘use it or lose it’ act. The Act has been introduced as part of the Construction 2020 Initiative and focuses primarily on the vacant site levy and revisions to planning development contribution and the social housing provision. Both Property Industry Ireland (PII) and the Society of Chartered Surveys Ireland (SCSI) published reports in 2014/2015, focused on the issues in the Irish planning system which they believe may cause or are currently causing the biggest impediment to housing supply in the country. The vacant site tax is one aspect quite similar to that recommended below, in Hufner and Lundsgaard (2007), to make available unused land.

The report from the SCSI agrees with the vacant site tax in principle but it maintains a level of concern regarding its timing and suitability in the current market. The report notes that it may not always be economically viable to build on sites around the country, particularly in regions outside of urban areas where there may not be a demand for housing.

Sweden has a housing supply problem insofar as developments are not generally located where the greatest demand arises. In order to tackle the challenges in Sweden, Hufner and Lundsgaard (2007) propose a system similar to that introduced in Denmark which deals with the issue of incentives. Barker (2004) details this locally levied land value tax which increases in line with land prices and thus rises as development pressure grows. This provides landowners with a direct financial incentive to release suitable land for development when the market demands it most. Muellbauer (2005) argues that a similar system in the UK would generate efficiency and stabilisation gains for the economy as a whole and improve the functioning of the land use planning system.

Land and property taxation across Europe varies substantially. Policy Exchange (2013) reports, in detail, the taxation choices of the UK and compares it to other OECD countries. It concludes that all countries tax property and land through a mixture of capital gains, inheritance and small annual levies on the value of property. Interestingly, they highlight the fact that a reasonably modest proportional taxation of property has not had the impact previously thought. For example, despite high levels of taxation, countries such as the US, UK and Australia have experienced very volatile housing markets. In recent years the UK has taken steps to encourage supply in the housing market by making low valued properties, new and existing, temporarily exempt from stamp duty. Muellbauer (2005) claims that both stamp duty and capital gains tax are relatively poor forms of property taxation, with new housing in the UK amounting annually to just 1 per cent of housing supply.

The level of revenue raised from property taxes in Germany has been low for several years; property tax share of GDP was 0.9 per cent in 2011. The German system of taxing property varies in terms of the valuation date used to generate the notional value and the actual tax rates. In many cases the values are based on valuations as far back as 1935. This means that rates in these particular areas range from 5-10 per cent compared to rates of 0.26-0.35 per cent in other areas. It is worth noting that the growth in housing supply in Germany has been the result of flexible planning systems and the tight control of the money supply by the Bundesbank and the European Central Bank post-1999.

While comparisons in housing supply are drawn between Ireland, the UK, US and Europe it is worth noting at this stage that market conditions vary considerably across countries. The UK and the US, as well as Ireland, experienced quite rapid growth in credit supply in the late 1990s which fuelled the demand for housing and subsequent housing boom. Credit conditions in many European countries and in particular Germany were much more constrained as outlined above. Additionally demographic aspects vary quite substantially across markets. A younger demographic in countries like Ireland and the UK will result in greater household formation in the coming years and thus a greater need for appropriate levels of housing supply.

A report from the National Economic and Social Council (NESC) in 2004 outlines the experience in the US where extensive use of land value taxation was used in Pittsburgh in particular. The city restructured its property taxes so that land was taxed at approximately five times the rate of structures. It was believed that land value taxes, unlike taxes on labour and business, did not inhibit activity. Research (Oates and Schwab (1997) suggests that such taxes and the approach taken above may act to inflate any property bubbles that may develop. Pittsburgh has since moved to a conventional property tax.

In terms of subsidies available to the market, DiPasquale (1997) concludes that subsidising developers to produce rental housing for moderate-income households tends to displace private construction and as a result generates no increase in the housing stock. The fundamental concern is the extent to which these production programmes increase the size of the rental housing stock or simply displace private new construction. This follows analysis from Murray (1983) which analysed the impact of public housing on housing supply and found that public housing increases the housing stock; three-quarters of public housing units represented additions to the stock while one-quarter displaced private construction.

Williams and Boyle (2012) provide important conclusions in their analysis of the tax incentives introduced in Ireland in the period 1986 to 2011. They recommend that greater care must be taken with regard to the power afforded to vested interests that vigorously advocate for and benefit from interventions remaining in place long after they are required. This falls in line with the recommendations made in the SCSi report of better cost-benefit analysis prior to the introduction, and during the lifetime, of any tax incentive.

### Infrastructure and Access to Development Finance

Although Mayer and Somerville (2000b) determine that development fees have a relatively small impact on new construction they do find that regulations which lengthen the development process can have significant effects. It is therefore important that governments make appropriate and deliberate decisions when choosing what regulations and levies should be introduced to increase housing supply.

A recent report from the SCSi (2015) concluded that despite reductions across the four local authorities, development contributions are still a major obstacle to development. It notes that compared to the SCSi Construction Tender Price Index, which is currently approximately one-third lower than at the peak, development contributions have yet to fall by the same amount. Similar to the UK experience the requirement to fund infrastructure in advance of the development being completed is considered one of the main reasons for the delay in new housing coming on the market. The UK have introduced a number of schemes to help finance almost finished developments.

In the UK the Department for Community and Local Government (DCLG) and the Homes and Communities Agency, for example, have introduced a £525 million Builders' Finance Fund to help reignite and boost housing developments of between 15 and 250 units. One of the main objectives of this plan is to help finish stalled but viable sites as well as accelerating fundamentally viable housing schemes. The Fund was introduced in early 2014 and is due to deliver approximately 13,000 new homes in total.

On a greater scale a £1 billion Large Site Infrastructure Fund has been introduced to bring forward larger scale housing projects. This involves a program of support over a six-year period designed to address barriers and help accelerate and unlock housing developments of at least 1,500 housing units that have slowed down or stalled completely. In total it is envisioned that upwards of 200,000 new homes will become available over the six-year period due to this fund.

Another policy innovation introduced in the UK, the Revolving Infrastructure Fund (RIF), acts as a funding mechanism for infrastructure in advance of developments being completed. This is an issue in many countries with local authorities in Germany and Sweden (Hüfner and Lundsgaard (2007) for example slow to sanction land release for owner occupation, due to the large infrastructure costs associated with such expansions. The RIF in the UK aims to increase housing growth by delivering on the infrastructure required to unlock potential

developments. The fund comprises two elements, an investment phase which provides cash to pay for the key items of physical infrastructure and a repayment phase with receipts coming back to the RIF. Once the RIF has generated sufficient receipts it is then able to reinvest in other projects and so is neither a grant nor a subsidy.

In spite of the financial support the UK government is offering through loans and guarantees in excess of £10 billion, housing supply is still seriously lagging behind what is required. Measures included in the government strategy 'Laying the Foundations', such as the New Homes Bonus and the stimulus packages, which were augmented in the Budget for 2014, have so far had little impact on new housing supply.

In 2013 the National Audit Office completed a report on the New Homes Bonus, assessing whether the DCLG was meeting its objectives of incentivising local authorities to encourage the development of more homes. In general the report concluded that the estimates provided by the DCLG were 'unreliable'. In the report they note that the Department estimated that the Bonus would increase housing supply by 8 to 13 per cent over its first ten years, equivalent to around 140,000 additional homes. However significant technical issues with the DCLG methodology were noted by the National Audit Office which, it is anticipated, will further hamper housing supply in the UK market.

In Ireland, the recent Construction 2020 report (2015) from the Department of Finance touched on the difficulties encountered by smaller construction firms in raising finance. One of the key findings of an initial report which assessed the availability of senior debt financing was that up to 65 per cent of development costs (on viable projects) are provided by banks. The issue then arises of how firms, in particular smaller firms, finance the remaining 35 per cent of the cost required. Construction 2020 highlights the fact that firms may not be large enough or sophisticated enough to attract investment from larger private equity investors.

In an attempt to boost such viable projects, the NAMA Residential Funding Programme 2016-2020 was established with the objective of delivering 20,000 housing units in total by the end of 2020. While specific details are not currently widely available it is anticipated that €4.5 billion will be allocated to the programme. The NTMA also established the Ireland Strategic Investment Fund (ISIF) which will see €7.4 billion invested across industry sectors, regions and asset classes. A proportion of this funding will be allocated to financing

infrastructure which may go some way to making commercially marginal sites viable for development.

From a US point of view, impact fees, similar to development contributions in Ireland, are defined as local charges imposed on developers to finance the provision of infrastructure. The results from Burge and Ihlanfeldt (2006), based on a unique panel of impact fees and home completions for Florida counties, strongly contradict conventional wisdom regarding the negative effects of impact fees on housing construction. They find, for example, that the introduction of impact fees actually increases the number of completions of all sizes of homes within inner suburban areas and medium-sized and large homes within outer suburban areas. In providing some explanation for this result they hypothesise that in addition to increasing the total fees that the developer must pay, impact fees also act to increase the demand for housing, reduce project approval costs and increase the percentage of projects that receive approval from local authorities.

This study follows previous work that has found somewhat contradictory results. Bruekner (1997) for example notes that, compared to other ways of financing infrastructure, while impact fees reduce the amount of residential development, the predicted effect on land values are ambiguous. On the empirical side, Skidmore and Peddle (1998) amongst others find that residential development in many areas of the US fell substantially after the imposition of such impact fees. While the literature remains inconclusive with regard to the effect of impact fees, McFarlane (1999) points out that the way the fee is structured, for example whether it is on land, on housing, or on the value of the developed land, matters for these predicted effects.

### **Planning Regulations**

Much comment recently has focussed on the need to undergo reform of building regulations in order to increase supply. Certain aspects of building standards and regulatory requirements have received much more attention than others and it is possible that some reform to these particular aspects, discussed in more detail below, will provide some level of stimulation to the housing supply issue in Ireland.

The Department of Environment, Community and Local Government Housing Policy Statement (2011) sets out as the overall strategic objective for the housing sector ‘to enable all households access good quality housing appropriate to household circumstances and in their particular community of choice’.

Government regulation and policy interventions will aim to ensure that the housing market makes an appropriate contribution to wider economic performance.

More recently, in May 2014, strategy regarding the construction sector has been set out in the Construction 2020 initiative. The strategy aims to address issues affecting the construction and housing markets including:

- A strategic approach to the provision of housing;
- Continued improvement of the planning process;
- The availability of financing for viable and worthwhile projects;
- Tools to monitor and regulate the sector; and
- Ensuring a fit for purpose sector.

A recent Spotlight (2014) report provides a comprehensive overview of many areas of the planning system in Ireland and how some aspects may hinder supply within the market. As well as issues regarding the staffing levels at An Bord Pleanála, which Spotlight (2014) claims is impacting the speed at which applications could be dealt with, the report also addresses the lack of planning compliance regulation which is having a direct impact on housing supply. Currently there is no statutory timeframe for the planning authority to make a decision on compliance submissions made by an applicant. The report goes on to state that ‘this can lead to a delay in the progression of developments, lack of clarity for developers, and in some cases non-compliant developments’. The provision of a statutory timeline in the Planning Regulations regarding compliance may help to prevent extended delays in the commencement of developments.

A second strand of the *Urban Regeneration and Housing Act, 2015* focuses on Part V of the *Planning and Development Act, 2000* (commonly known as ‘Part V’). Under this new Housing Act, developers will now be required to reserve up to 10 per cent of a housing development – on developments of nine or more houses – for social housing. This compares to a requirement of 20 per cent in the previous 2000 Act. It is anticipated that this reform will boost housing development and ease the existing housing shortage. The SCSi believes that this expectation is somewhat simplistic. Their 2015 report highlights the many issues, such as development contribution, infrastructure requirements and access to funding, which the SCSi believe, collectively, are restricting supply. Reform to Part V alone will do little to kick-start construction of residential housing.



The Spotlight (2014) report provides some insight into the inefficiencies of Part V in recent years. It notes that in the period from 2002 to 2011, Part V has delivered 19,245 social housing units. At 4.8 per cent of all housing units delivered in this period, it is far below the anticipated 15 per cent set out in the Planning and Development Act 2000. While the report indicates that Part V has provided a net benefit to the Exchequer a further report from PII (2014) suggests that very little revenue will be generated from the tax in the coming years due to the fact that new developments are likely to be much smaller in comparison to those completed in the recent past.

The 2004 report from the NESC provides an overview of the guidelines set out by the All Party Oireachtas Committee on the Constitutions (APOCC) which suggests that mechanisms should be put in place to control the price of development land coming to the market. Active land management, primarily used to develop social housing, has been a long tradition in Sweden. This Swedish system of land intervention is associated with a distinctive pattern of housing provision with the non-profit sector (public and private) responsible for over 50 per cent of new completions. When comparing the housing market in high-growth regions of Sweden, Britain and France, NESC (2004) found that Sweden has the highest level of productive efficiency and the lowest level of uncertainty for builders. Similarly in the Netherlands there was a long practice, for many decades, of local authorities dominating the development of land for new construction of social housing.

The housing issues that have arisen in Sweden in the past number of years have been linked to the fact that the current supply of private housing is not located where demand requires. One challenge therefore, as outlined by Hufner and Lundsgaard (2007), is to better match supply with demand. An adequate supply response to growing demand is further hampered by a planning system that lacks incentives and a construction sector with one of the highest costs in Europe due to weak competition. The issue of cumbersome planning regulations and few incentives for municipalities to issue more land has also been noted as a problem in the Swedish market.

In addition, Konkurrensverket (2006) outlines the numerous problems with the planning process in Sweden in some detail. It is noted that municipalities play an essential role in the building process. Prior to granting a building license, a municipality must set up a general plan (designating residential, commercial and industrial areas) and a detailed plan (defining the type of building). The process of

developing or changing a detailed plan can be long and tedious. In addition, appealing against detailed building plans can take up to three and a half years and thus makes a swift supply response to changes in demand quite difficult (McKinsey, 2006). Similarly, there is a severe lack of supply in economically developed regions of the US which is further constrained by the amount of land on which housebuilding is permitted and the time it takes – usually years – for developments to be processed through local planning (Policy Exchange (2013).

Sen (1986) noted that the approval process for land conversion and subdivision can take two to seven years and is fraught with uncertainty. In most states, from 15 to 20 separate government departments were involved in the approval of plans and specifications, adding another two to five years to project completion. A simple test of how well the housing market works in the aggregate is whether increases in effective demand are translated into increases in supply of housing or increase in the price of housing.

The vast majority of the literature on land-use regulation concludes that land regulations act to restrict the supply of housing and new construction. Much of the literature in this area however is focused on the United States. Ihlanfeldt (2007) for example, looks at the effects of restrictiveness on more than a hundred Florida cities and finds that greater regulation raises house prices while Glaeser and Gyourko (2005) find that, in unregulated cities, house prices are close to construction costs but in heavily controlled areas prices are well above these costs.

Quigley and Raphael (2005) find that the responsiveness of the housing stock via new construction is weaker in more regulated cities, relative to less regulated cities. Moreover, the difference in responsiveness is greatest for the supply of multi-family housing units, the source of supply that is most frequently the target of regulation. Glaeser et al. (2008) and Goodman and Thibodeau (2008) both find that price bubbles are more prevalent where the price elasticity of supply is low, while Mayer and Somerville (2000b) find that across 44 US metropolitan areas between 1985 and 1996, excessive land-use regulation could lower construction by up to 45 per cent. They also find that planning delays, through land-use and planning regulations are more important to developers than impact fees.

Mayer and Somerville (2000a) characterise regulations as adding explicit costs, uncertainty or delays to the development process and note that theory indicates that regulations such as zoning, growth controls, and development fees affect housing market outcomes both by constraining supply and increasing demand.

Nearly all of the existing empirical work has explored the impact of regulation on house prices with the bulk of the papers finding that increased local regulation leads to higher house prices. To date it appears that the nearly exclusive focus on prices is problematic because difficulties then arise in determining whether higher price increases are due to higher demand or lower supply.

Perhaps surprisingly, Gyourko and Molloy (2014) find that regulation in the US appears to be the single most important influence on the supply of homes while labour and material costs do not appear to serve as a primary constraint on residential development. Looking at house prices and construction costs over the past 30 years they conclude that the growing wedge between the two illustrates that the price of land has been trending upward over time. They also note that research on this topic has been hampered by a lack of direct evidence on regulation. For example, it is exceptionally difficult to collect accurate data on the wide variety of regulation in place, as well as the problems associated when trying to compare the stringency of one type of regulation with another. Empirically, Malpezzi (1996) finds, in a study of 56 metropolitan areas in the US, increasing the level of regulation from its average by one standard deviation is associated with 22 per cent higher house prices and 11 per cent lower levels of construction.

Malpezzi and Mayo (1997) analyse the market in Malaysia and note that relative to the US, the public sector has a considerable presence in the housing market. During the 1980s the public sector was responsible for 20-35 per cent of all new units constructed. They highlight five key interventions which have influenced the housing price level either directly, by increasing construction standards and costs, or indirectly, by increasing developers' risk. Some of these interventions include the increasing role of the public sector in housing production, land use and infrastructures standards, and lengthy housing construction approval procedures.

The Special Low Cost Housing Program (SLCHP) for example was undertaken in 1986 in response to the cyclical downturn in Malaysia's economy and in the construction industry in particular. It had two objectives: to increase the supply of low- and moderate-income housing, and to stimulate the economy through linkage effects. The main supply-side incentives in the programme were reduced infrastructure standards and speedier approval for land conversions and other regulatory matters.

The most serious problem with implementing the SLCHP included lack of demand due to inappropriate pricing, poor choice of location and designs by developers,

and administrative constraints. The desire to reduce costs by choosing location with cheap land prices frequently led to producing houses far from existing employment and services, and which, as a result, sold slowly. The analysis also notes the lengthy process that developers must follow to secure approval of housing projects.

### Conclusion

This examination of the existing international and domestic housing policies highlights a myriad of governmental approaches used to tackle the issue of housing supply and potential lack thereof. It is true that in some circumstances the lag in new residential construction is linked to non-policy constraints such as geographical conditions. However, in many circumstances, as the literature identifies, government policy plays a strong role in housing supply responsiveness.

This paper highlights some of the main aspects of government policy that act to influence housing supply. In particular, three policies emerge that appear to play an important role in acting as a constraint on housing supply. International evidence shows that strict planning regulations can have a greater impact on housing development than infrastructural costs. Andrews et al. (2011), for example, identify lower supply elasticities in countries with strict land-use and planning regulations. This is considered to be especially the case in countries where it takes a relatively long period of time to acquire a building permit.

Substantial infrastructural costs also play an important role in either intensifying or alleviating supply issues. As the recent report from SCSi (2015) established, development contributions are still a major obstacle to development in Ireland despite reductions across the four main local authorities. Evidence from the UK indicates that government grants used to subsidise stalled developments may provide some assistance in alleviating supply-side pressures. However, these schemes can be challenging to implement effectively and the success of such schemes is notoriously difficult to quantify.

Finally, the study also finds that inappropriate taxation can result in serious consequences when it comes to residential construction. Several reports in the mid-2000s investigated the taxation policy mix in Ireland in the lead up to the housing construction boom. Indecon (2005) in particular recommended that the introduction of any new incentives should be informed by a formal assessment of the likely cost-benefit appraisal. Evidence from countries such as Denmark show that the introduction of a land tax that increases in line with house/land prices is

shown to act as an incentive to sell/use underdeveloped or vacant land in periods of increased demand.

There remains much scope, from an Irish point of view in particular, for government policy reform to encourage new housing developments that will meet demand. A recent study from Duffy et al. (2014), based on likely future demographic trends, concludes that 25,000 housing units per annum are required over the next 15 years to meet the underlying demand in the Irish market. As it stands, Ireland is in a similar situation to the UK with completions well under half of what is required annually. Therefore, bridging the gap between the actual and desired housing stock, in an efficient and timely manner, requires a careful and prudent policy mix.

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