Quarterly Economic Commentary

David Duffy
Kieran McQuinn
Ciara Morley
Daniel Foley

Spring 2016

ESRI

THE ESRI

The *Economic Research Institute* was founded in Dublin in 1960, with the assistance of a grant from the Ford Foundation of New York. In 1966 the remit of the Institute was expanded to include social research, resulting in the Institute being renamed *The Economic and Social Research Institute* (ESRI). In 2010 the Institute entered into a strategic research alliance with Trinity College Dublin, while retaining its status as an independent research institute.

The ESRI is governed by an independent Council which acts as the board of the Institute with responsibility for guaranteeing its independence and integrity. The Institute's research strategy is determined by the Council in association with the Director and staff. The research agenda seeks to contribute to three overarching and interconnected goals, namely, economic growth, social progress and environmental sustainability. The Institute's research is disseminated through international and national peer reviewed journals and books, in reports and books published directly by the Institute itself and in the Institute's working paper series. Researchers are responsible for the accuracy of their research. All ESRI books and reports are peer reviewed and these publications and the ESRI's working papers can be downloaded from the ESRI website at *www.esri.ie*

The Institute's research is funded from a variety of sources including: an annual grant-in-aid from the Irish Government; competitive research grants (both Irish and international); support for agreed programmes from government departments / agencies and commissioned research projects from public sector bodies. Sponsorship of the Institute's activities by Irish business and membership subscriptions provide a minor source of additional income.

Quarterly Economic Commentary

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.

Printed by Grehan Printers.

Quarterly Economic Commentary

David Duffy

Kieran McQuinn

Ciara Morley

Daniel Foley

Spring 2016

The forecasts in this *Commentary* are based on data available by 10 March 2016. Draft completed 11 March 2016.

Special Article

Research Note

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

Authors

The *Commentary* is edited by Kieran McQuinn and David Duffy. Kieran McQuinn is an Associate Research Professor, David Duffy is a Senior Research Officer, and Ciara Morley and Daniel Foley are Research Assistants at the Economic and Social Research Institute (ESRI).

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.

Research Notes are short papers on focused research issues. They are subject to refereeing prior to publication.

Table of Contents

Summary Table

	2013	2014	2015	2016	2017
Output (Real Annual Growth %)					
Private Consumer Expenditure	-0.3	2.0	3.5	3.8	3.5
Public Net Current Expenditure	1.4	4.6	-0.8	1.0	1.0
Investment	-6.6	14.3	28.2	22.5	22.1
Exports	2.5	12.1	13.8	9.3	6.7
Imports	0.0	14.7	16.3	12.5	10.7
Gross Domestic Product (GDP)	1.4	5.2	7.8	4.8	4.1
Gross National Product (GNP)	4.6	6.9	5.7	5.0	4.3
Prices (Annual Growth %)					
Consumer Price Index (CPI)	0.5	0.2	-0.3	1.0	1.0
Growth in Average Hourly Earnings	-0.8	1.6	2.0	2.3	2.3
Labour Market					
Employment Levels (ILO basis (000's))	1,881	1,914	1,964	2,002	2,038
Unemployment Levels (ILO basis (000's))	282	243	204	190	171
Unemployment Rate (as % of Labour Force)	13.1	11.3	9.5	8.7	7.7
Public Finance					
General Government Balance (€ bn)	-10.2	-7.6	-3.4	-2.5	-0.5
General Government Balance (% of GDP)	-5.8	-4.1	-1.6	-1.1	-0.2
General Government Debt (% of GDP)	123.2	109.7	93.9	87.4	82.0
External Trade					
Balance of Payments Current Account (€ bn)	5.6	6.8	9.5	8.8	1.8
Current Account (% of GNP)	3.1	3.6	4.4	3.8	0.7
Demand					
Final Demand	0.9	9.4	11.9	8.7	7.6
Domestic Demand	-1.2	5.7	9.3	7.7	9.0
Domestic Demand (excl. Stocks)	-1.5	5.2	8.6	8.6	9.1

National Accounts 2015

A: Expenditure on Gross National Product

	2014	2015	Change in 2015		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	89.0	92.4	3.8	0.4	3.5
Public Net Current Expenditure	27.2	27.9	2.3	3.1	-0.8
Gross Fixed Capital Formation	36.5	47.2	29.4	0.9	28.2
Exports of Goods and Services	215.0	260.6	21.2	6.5	13.8
Physical Changes in Stocks	1.9	2.7			
Final Demand	**369.6**	**430.7**	**16.6**	**4.1**	**11.9**
less:					
Imports of Goods and Services	180.3	215.7	19.6	2.9	16.3
Statistical Discrepancy	-0.2	-0.2			
GDP at Market Prices	**189.3**	**215.0**	**13.6**	**5.5**	**7.7**
Net Factor Payments	-26.2	-31.7			
GNP at Market Prices	**162.9**	**183.1**	**12.4**	**6.4**	**5.7**

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	73.4	3.3	4.8
Other	68.4	88.8	20.4	29.8
Adjustments: Stock Appreciation	-0.3	-0.3		
Statistical Discrepancy	0.2	0.2		
Net Domestic Product	**141.9**	**165.6**	**23.7**	**16.7**
Net Factor Payments	-26.2	-31.7	-5.5	21.0
National Income	**115.7**	**133.9**	**18.3**	**15.8**
Depreciation	29.3	30.0	0.7	2.3
GNP at Factor Cost	**145.0**	**163.9**	**18.9**	**13.1**
Taxes less Subsidies	17.9	19.2	1.3	7.4
GNP at Market Prices	**162.9**	**183.1**	**20.3**	**12.4**

C: Balance of Payments on Current Account

	2014	2015	Change in 2015
	€ bn	€ bn	€ bn
X – M	34.8	44.9	10.1
F	-26.2	-31.7	-5.5
Net Transfers	-2.7	-2.9	-0.1
Balance on Current Account	**5.9**	**10.4**	**4.5**
as % of GNP	3.6	5.7	2.4

National Accounts 2016

A: Expenditure on Gross National Product

	2015	2016	Change in 2016		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	92.4	96.9	4.8	1.0	3.8
Public Net Current Expenditure	27.9	28.6	2.8	1.8	1.0
Gross Fixed Capital Formation	47.2	59.5	25.9	2.8	22.5
Exports of Goods and Services	260.6	293.2	12.5	3.0	9.3
Physical Changes in Stocks	2.7	1.0			
Final Demand	**430.7**	**479.2**	**11.2**	**2.4**	**8.7**
less:					
Imports of Goods and Services	215.7	249.4	15.6	2.8	12.5
Statistical Discrepancy	-0.2	-0.2			
GDP at Market Prices	**215.0**	**229.8**	**6.9**	**2.0**	**4.7**
Net Factor Payments	-31.7	-33.0			
GNP at Market Prices	**183.1**	**196.5**	**7.3**	**2.2**	**5.0**

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.	73.4	76.7	3.3	4.5
Other	88.8	98.8	10.0	11.3
Adjustments: Stock Appreciation	-0.3	-0.3		
Statistical Discrepancy	0.2	0.2		
Net Domestic Product	**165.6**	**179.0**	**13.4**	**8.1**
Net Factor Payments	-31.7	-33.0	-1.3	4.2
National Income	**133.9**	**146.0**	**12.0**	**9.0**
Depreciation	30.0	30.0	0.0	0.0
GNP at Factor Cost	**163.9**	**176.0**	**12.0**	**7.3**
Taxes less Subsidies	19.2	20.6	1.4	7.1
GNP at Market Prices	**183.1**	**196.5**	**13.4**	**7.3**

C: Balance of Payments on Current Account

	2015	2016	Change in 2016
	€ bn	€ bn	€ bn
X – M	44.9	43.8	-1.1
F	-31.7	-33.0	-1.3
Net Transfers	-2.9	-2.9	0.0
Balance on Current Account	**10.4**	**8.0**	**-2.4**
as % of GNP	5.7	4.1	-1.2

National Accounts 2017

A: Expenditure on Gross National Product

	2016	2017	Change in 2017		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	96.9	101.2	4.5	1.0	3.5
Public Net Current Expenditure	28.6	28.8	0.4	-0.6	1.0
Gross Fixed Capital Formation	59.5	74.6	25.4	2.8	22.1
Exports of Goods and Services	293.2	319.9	9.1	2.3	6.7
Physical Changes in Stocks	1.0	2.0			
Final Demand	**479.2**	**526.5**	**9.9**	**2.1**	**7.6**
less:					
Imports of Goods and Services	249.4	281.9	13.0	2.1	10.7
Statistical Discrepancy	-0.2	-0.2			
GDP at Market Prices	**229.8**	**244.7**	**6.5**	**2.2**	**4.2**
Net Factor Payments	-33.0	-34.2			
GNP at Market Prices	**196.5**	**210.2**	**7.0**	**2.6**	**4.3**

B: Gross National Product by Origin

	2016	2017	Change in 2017	
	€ bn	€ bn	€ bn	%
Agriculture	3.5	3.6	0.1	3.5
Non-Agriculture: Wages, etc.	76.7	79.9	3.2	4.2
Other	98.8	108.8	10.0	10.1
Adjustments: Stock Appreciation	-0.3	-0.3		
Statistical Discrepancy	0.2	0.2		
Net Domestic Product	**179.0**	**192.4**	**13.4**	**7.5**
Net Factor Payments	-33.0	-34.2	-1.2	3.6
National Income	**146.0**	**158.2**	**12.2**	**8.3**
Depreciation	30.0	30.0	0.0	0.0
GNP at Factor Cost	**176.0**	**188.2**	**12.2**	**6.9**
Taxes less Subsidies	20.6	22.1	1.5	7.4
GNP at Market Prices	**196.5**	**210.2**	**13.7**	**7.0**

C: Balance of Payments on Current Account

	2016	2017	Change in 2017
	€ bn	€ bn	€ bn
X – M	43.8	38.1	-5.8
F	-33.0	-34.2	-1.2
Net Transfers	-2.9	-2.9	0.0
Balance on Current Account	**8.0**	**1.0**	**-7.0**
as % of GNP	4.1	0.5	-3.3

The Irish Economy – Forecast Overview and Summary

On foot of the substantial growth performance in 2015, the Irish economy looks set to continue to grow robustly in 2016. The economy as measured by GDP grew by 7.8 per cent in 2015; we expect that it will grow by 4.8 per cent in 2016. GNP, which grew by 5.7 per cent in 2015, is expected to increase by 5 per cent in the current year. Growth in 2016 is set to be heavily influenced by domestic factors with investment and consumption continuing to play a more central role in the overall growth performance of the domestic economy.

Notwithstanding this, developments in international markets will also be crucially important for Ireland's outlook. In Q1 2016 the United Kingdom Government decided on June of this year for the 'Brexit' referendum; the growing ambiguity concerning the outcome of this major decision merely serves to compound some of the international, macroeconomic risks posed to the domestic economy. In that regard the first quarter of 2016 has seen a significant degree of uncertainty concerning a number of issues. Much of this uncertainty was prompted towards the end of 2015 by renewed concern surrounding the large imbalances in the Chinese economy. However, more recently there have been worries about the asset quality of certain leading institutions in the European banking sector and nascent concerns about the growth performance of both the European and US economies in Q1 2016. This has led us to modify our growth forecasts for Irish trade down marginally in 2016; however developments in Q2 2016 will provide a firmer indication of whether these uncertainties are likely to have significant real economy impacts for our main trading partners.

On the domestic front there is some uncertainty as well owing to the rather inconclusive nature of the recent General election. While the task of forming a stable government looks to be particularly challenging, in the short term at least it is unlikely there will be any adverse outcomes for the main economic and financial indicators.

The Nowcasting model (summarised in the Appendix) indicates that, despite the growing uncertainty, the domestic economy still grew by 1.5 per cent between the final quarter of 2015 and the first quarter of the present year.

We also release our first estimate of growth in 2017 for the Irish economy. In the previous *Commentary* we devoted a significant amount of attention to long-run trends amongst key Irish macroeconomic variables; namely in investment, the unemployment rate and the growth rate in total factor productivity. Based on

this we felt that the output gap would close in 2016. At present, we estimate the rate of Irish potential output growth to be approximately 3.5 per cent. Given the strength of growth in the economy at present, we forecast that both GDP and GNP will grow slightly stronger in 2017, by 4 per cent.

In the International Section of the present *Commentary* we draw on earlier research by McQuinn and Whelan (2015)[1] to place the issue of inward migration in the Euro Area in context. Population forecasts for the Euro Area compiled by EuroStat and presented in McQuinn and Whelan (2015) clearly demonstrate that Europe has an ageing population and crucially that this issue is impacting on the growth prospects for the different Member States right now. Importantly, in the absence of significant net inward migration, future European labour supply is likely to contract with clear, adverse implications for economic growth and living standards. While the Irish population is somewhat younger relative to the European average, the domestic economy will be subject to the same trends over time.

Finally, as with previous *Commentaries* and reflecting the joint ESRI-BPFI/NAMA research programme, we present a number of papers on the crucial issue of housing supply. Inter alia, these studies examine the issue of heterogeneity in the regional housing supply rates (Morgenroth, 2016), while Barrett and Kelly (2016) conduct an initial examination of housing tenure and movement among Ireland's older population using The Irish Longitudinal Study on Ageing (TILDA).

Based on these developments in the Irish housing market, we also address the proposed review of the macro-prudential measures introduced last year, which is to be conducted by the Central Bank of Ireland later in the year. As with Duffy and McQuinn (2015)[2] we argue that any review should seek to place the implementation of this new important policy area on a rules basis which, crucially, takes cyclical developments in both the demand and the supply side of the housing market into consideration.

---

1 McQuinn, K. and K. Whelan (2015). 'Europe's Long-Term Growth Prospects: With and Without Structural Reforms', ESRI *Working Paper* No. 501. Available at www.esri.ie/pubs/WP501.pdf.

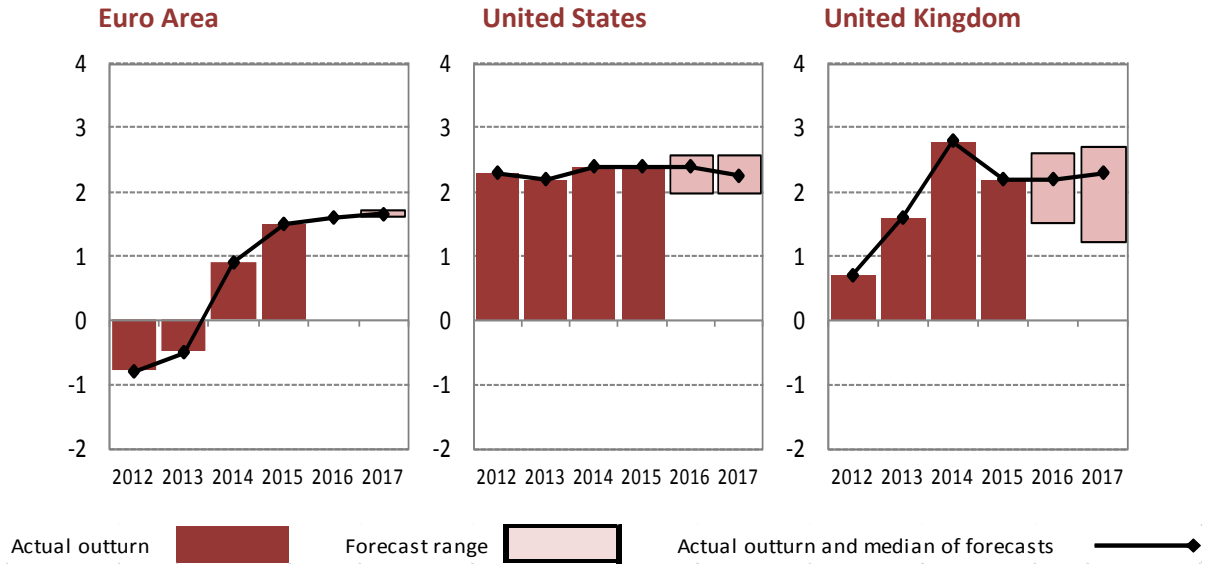
2 Duffy, D. and K. McQuinn (2014). 'Assessment of Proposed Macro-Prudential Policy Measures', Appendix, *Quarterly Economic Commentary*, Winter 2014, ESRI.

The International Economy

The international environment, as noted in the previous *Commentary*, is particularly volatile at the present time with vulnerabilities in China and other emerging economies continuing to reverberate throughout the global economy.

All three of Ireland's main trading partners – the Euro Area, the United States and the United Kingdom – registered positive output growth rates in 2015. In general the outlook for 2016 is also positive for all three economies; Figure 1 shows that in the Euro Area, real GDP is forecast to grow by 1.6 per cent in 2016 and 1.7 per cent in 2017. In the UK, positive growth rates of 1.5 and 1.2 per cent are expected in 2016 and 2017 respectively, although any possible Brexit following the referendum announced for June of this year will likely impact these forecasts. The US is expected to register the strongest growth of the three trading partners with a growth rate of 2 per cent anticipated in each of the next two years. Notwithstanding these outlooks, recent, more timely economic data do suggest a possible weakening in the growth performance of both the US and Europe in Q1 2016.

FIGURE 1 Real GDP Growth (% Change, Year-on-Year)



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

The Euro Area Economy

According to a flash estimate published by Eurostat, seasonally-adjusted GDP rose by 0.3 per cent in both the Euro Area and the European Union during the fourth quarter of 2015, compared with the previous quarter. When compared to

the final quarter of 2014, seasonally-adjusted GDP rose by 1.5 per cent in the Euro Area and by 1.8 per cent in the European Union. Among the Member States for which data are available, Greece and Finland are the only two members to have recorded negative growth in two consecutive quarters. While overall growth in the Euro Area was positive in 2015 it is interesting to note that growth moderated somewhat over the course of the year, from 0.5 per cent quarter-on-quarter growth in Q1 to 0.4 per cent in the second quarter and 0.3 per cent in the third quarter.

In addition to this, recent Nowcast forecasts[3] indicate that although growth appeared to strengthen in 2015, the momentum is now faltering because the Euro Area is affected, with a lag, by the slowdown in the US. The most current estimates for the first quarter of 2016 for the US and the Euro Area have converged and point to a disappointing annualised rate of growth of below 1.5 per cent.

Euro Area inflation was 0.3 per cent in January 2016, up from 0.2 per cent in December 2015 and -0.6 per cent in January 2015. Negative rates were observed in ten Member States. Compared with December 2015, annual inflation fell in 12 Member States, remained stable in two and rose in 14. HICP inflation in 2015 dropped further to zero, down from an already low 0.4 per cent in 2014. The deceleration was, however, solely due to lower energy prices. Consumer price inflation excluding energy actually accelerated during 2015, from 0.4 per cent in January to around 1 per cent at the end of the year. 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.

Given that the outlook for inflation has weakened significantly, the European Central Bank (ECB) recently cut its main interest rate from 0.05 per cent to 0 per cent. This is the first interest rate cut made by the ECB since September 2014. The ECB will also continue with its programme of quantitative easing and has moved to increase its bond-buying programme from €60 billion per month to €80 billion per month. The long-term effects of these strategies should also be taken into account. For example, ECB bond purchases are distorting the market for Eurozone government debt. It is expected that if the ECB's bond-buying continues at its current rate, the ECB and national central banks will own over 25 per cent of the entire Eurozone government bond market by the first half of 2017. As discussed in the Monetary and Financial section, a continuation of a negative or very low

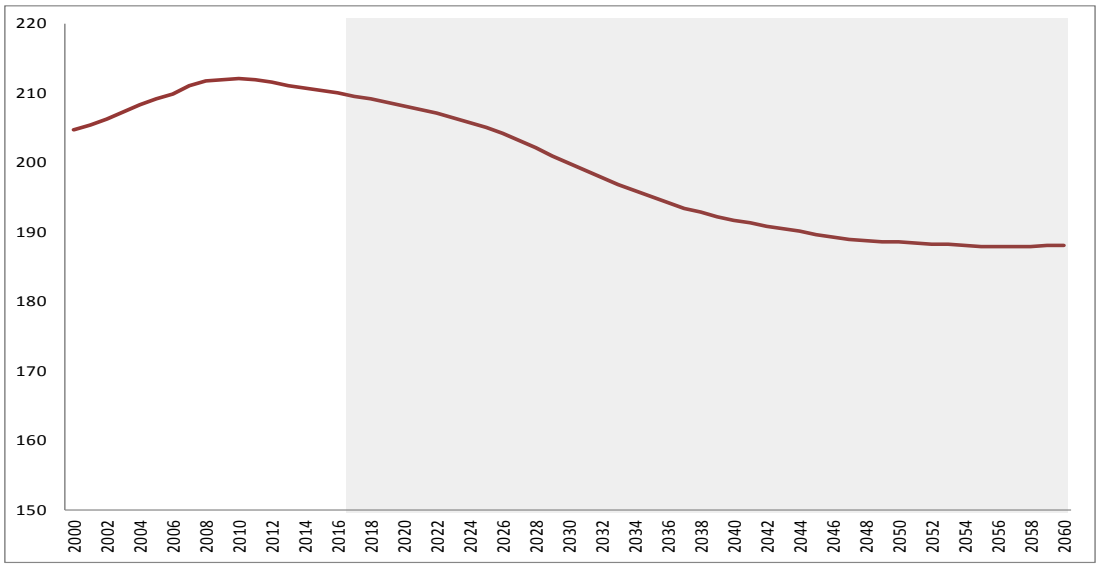
[3] See Caruso, A., T. Hasenzagl, F. Pellegrino and L. Reichlin, (2016). 'The US sneezes and the Eurozone catches a cold: The Eurozone has been infected by the US slowdown'. Available at www.voxeu.org/article/how-eurozone-has-been-infected-us-slowdown.

interest rate environment will also continue to impact the profitability of banks which may in turn have a negative effect on consumers.

Seasonally-adjusted unemployment fell marginally in December 2015, down to 10.4 per cent from 10.5 per cent in November 2015. This is the lowest rate recorded in the Euro Area since September 2011 and compares with a rate of 11.4 per cent in December 2014. Among the Member States, the lowest unemployment rate in December 2015 was recorded in Germany at 4.5 per cent. The highest unemployment rates continue to be observed in Greece (24.5 per cent) and Spain (20.8 per cent). Compared to 12 months ago, the unemployment rate in December 2015 fell in 23 Member States, remained stable in one and increased in four.

The recent significant increase in the inflow of refugees into Europe has prompted some analysis of the impact of this development on certain European countries' economic outlook. For example, a recent Euroframe Report[4] indicates that, in the case of Germany, the labour force has increased by an estimated 70,000 persons in 2015 and is expected to rise by another 240,000 in 2016. It is worth noting however that these figures are relatively small in comparison to a labour force of 42 million people.

FIGURE 2 Total Population in 15 to 64 Age Bracket (Euro Area, millions)

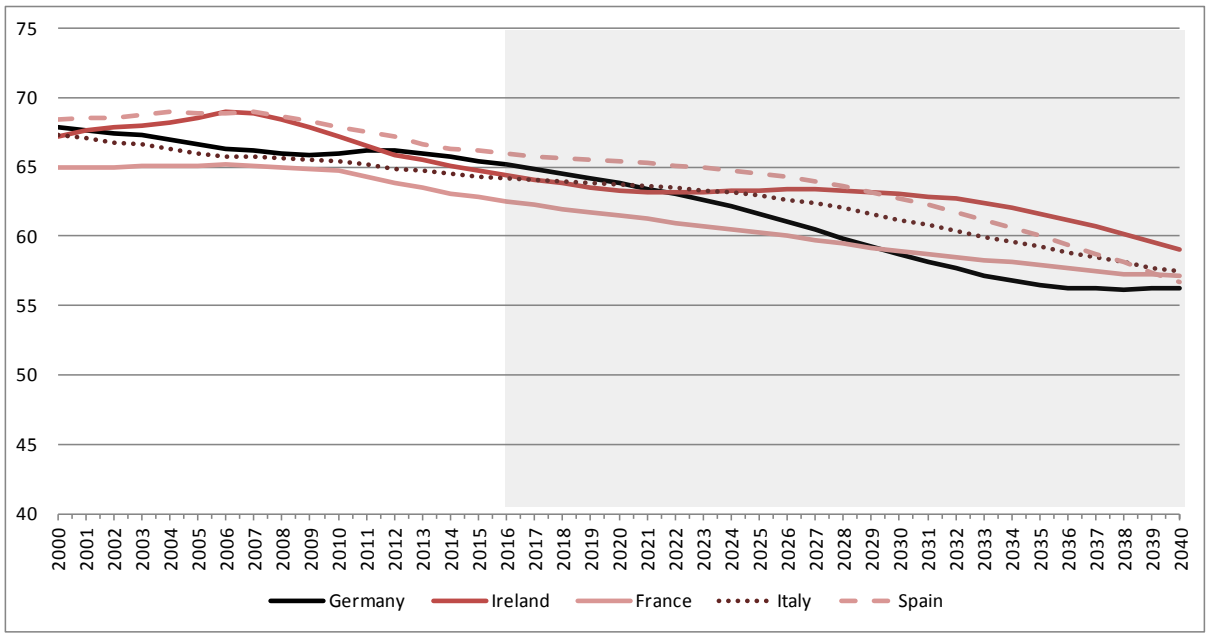


Source: McQuinn, K. and K. Whelan, (2015). 'Europe's Long-Term Growth Prospects: With and Without Structural Reforms', ESRI Working Paper No. 501. Available at www.esri.ie/pubs/WP501.pdf.

4 See www.euroframe.org/files/user_upload/euroframe/docs/2016/EUROFRAME%20Report_2016.pdf.

In addressing the long-run implications of demographic trends on future European living standards, McQuinn and Whelan[5] demonstrate that the ageing of the European population is having adverse implications for Europe's growth prospects right now. This is due to the fact that, according to forecasts from Eurostat, the proportion of people in the key working age category 15-64 has already peaked (in 2010) and is set to decline significantly under a baseline scenario. Figure 2 illustrates future European demographic movements, while Figure 3 shows that the decline in the proportion of people in this age category is mirrored across individual European Member States.

FIGURE 3 Proportion of Total Population in 15 to 64 Age Bracket (%) by Country



Source: McQuinn, K. and K. Whelan, (2015). 'Europe's Long-Term Growth Prospects: With and Without Structural Reforms', ESRI Working Paper No. 501. Available at www.esri.ie/pubs/WP501.pdf.

McQuinn and Whelan estimate[6] that given the resulting implications for labour force growth, output and output per hour will increase by a meagre 0.4 and 0.6 per cent per annum over the period 2014-2043. Crucially, McQuinn and Whelan argue that higher rates of inward migration, while politically difficult, may be necessary if Europe wishes to keep the supply of labour growing and economic growth rates from collapsing.

The US Economy

Real GDP increased at an annual rate of 1 per cent in the final quarter of 2015, according to the second estimate released by the Bureau of Economic Analysis.

5 McQuinn, K. and K. Whelan, (2015). 'Europe's Long-Term Growth Prospects: With and Without Structural Reforms', ESRI Working Paper No. 501. Available at www.esri.ie/pubs/WP501.pdf.

6 Using plausible assumptions about future rates of unemployment and investment.

The economy grew at a rate of 2 per cent in the third quarter and expanded by 2.4 per cent in 2015. First quarter GDP growth estimates are as high as 2.5 per cent, but the risks are tilted to the downside amid slowing world economies, a strong Dollar and a recent global stock market sell-off that has tightened financial market conditions.

Concerns for US growth levels have also come from recent Purchasing Managers' Index (PMI) data from Markit. Markit's PMI survey data for February show a significant risk of the US economy falling into contraction in the first quarter of 2016. The February reading is amongst the weakest since the recession with business activity in services falling for the first time since October 2013, accompanying a marked slowdown to near-stagnation in manufacturing.

On a positive note, data from the US Bureau of Labour Statistics indicated that total non-farm payroll employment rose by 151,000 in January. Both the number of unemployed persons, at 7.8 million, and the unemployment rate, at 4.9 per cent, changed little in January. Over the past 12 months, the number of unemployed persons and the unemployment rate were down by 1.1 million and 0.8 percentage points respectively. Federal Reserve Chair Janet Yellen has said the economy needs to create just under 100,000 jobs a month to keep up with growth in the working age population. The deceleration in employment growth in recent months could further undercut the case for a Federal Reserve interest rate hike in March.

The minutes of the Federal Open Market Committee (FOMC) acknowledged that the labour market had strengthened since its December meeting, even as economic growth slowed in the fourth quarter of 2015. As a result inflation is expected to remain low in the near term, in part because of the further declines in energy prices, and is expected to rise to 2 per cent over the medium term. Given the economic outlook, the FOMC has maintained the target range for the federal funds rate at 0.25 to 0.5 per cent. The stance of monetary policy remains accommodative, thereby supporting further improvement in labour market conditions and a return to 2 per cent inflation.

The UK Economy

Gross Domestic Product in the UK is estimated, by the Office of National Statistics (ONS), to have increased by 0.5 per cent in the final quarter of 2015 compared with growth of 0.4 per cent in Q3 2015. When compared to the final quarter of 2014, GDP was 1.9 per cent higher with an annual increase of 2.2 per cent in 2015 over 2014. In Q4 2015, GDP was estimated to have been 6.6 per cent higher than

the pre-economic downturn peak of Q1 2008. From the peak in Q1 2008 to the trough in Q2 2009, the economy shrank by 6.1 per cent.

Data released by the ONS indicate that 205,000 more people were employed in Q4 2015 compared to the previous quarter, with a total of 31.42 million people now in employment in the UK. The employment rate (the proportion of people aged from 16 to 64 in work) was 74.1 per cent, the highest since comparable records began in 1971. The unemployment rate continues to fall and now stands at 5.1 per cent, 0.6 per cent lower than for a year earlier. Despite the strong employment numbers, the UK continues to suffer from very low labour productivity. UK labour productivity as measured by output per hour grew by 0.5 per cent from the second to the third quarter of 2015. By contrast, output per worker and output per job decreased by 0.2 and 0.1 per cent respectively, as a result of a decrease in average hours in Q3. Latest data from the ONS indicate that output per hour worked in the UK was 18 percentage points below the average for the remaining six members of the G7. This is the widest productivity gap since comparable records began in 1991.

The Consumer Price Index (CPI) rose by 0.3 per cent in the year to January 2016, compared with a 0.2 per cent rise in the year to December 2015. This is the third consecutive month of small increases, with the rate in January 2016 being the same as it was in January 2015. The current inflation rate is still far behind the Bank of England target of 2 per cent.

The governor of the Bank of England, Mark Carney, has indicated that if the UK economy worsens, the Bank of England will be in a position to respond with an interest rate cut or more quantitative easing. In light of subdued global growth, the first interest rate rise is now not expected to happen until 2017 at the very earliest. While Governor Carney has stated that one option open to the UK is to cut the interest rate further towards zero he has emphasised that the Bank of England has no intention of following Japan's lead of introducing negative interest rates.

Additional concerns for the British economy have arisen in light of the Brexit referendum date on 23 June. Sterling, for example, has fallen by nearly 7 per cent against the Dollar over the past three months due to concerns over the UK's EU membership. In late February Sterling fell a full 2 per cent in one day, the biggest one-day decline for the currency since October 2009. Although the weakened Sterling is seen as a sign of stress in the UK economy, it may potentially help the low inflation rate, assuming strong overseas demand for UK goods and services. The possibility of a British exit of the EU is still a major uncertainty in the Euro

Area with a recent YouGov poll of 3,482 people revealing that the 'leave' campaign is one point ahead of the 'remain' with 38 per cent to 37 per cent.[7]

As stated in the Winter *Commentary*, a British exit from the European Union remains one of the most prevalent risks to the Irish economy. A recent study by the ESRI[8] determined the potential economic consequences of a 'Brexit' for Ireland with the evidence suggesting that Ireland's interests are best served by the UK remaining within the EU.

The World Economy

In the first quarter of 2016 the global outlook remains subject to downside risks. The new tensions emerging in China's financial markets at the beginning of this year and the renewed concerns about its domestic growth, matched with the deep recession in Brazil and the prolonged crisis in Russia all have an adverse impact on global growth expectations.

Concerns about the Chinese economy persist into Q1 2016 and show little sign of abating. GDP growth moderated to 6.8 per cent for the final quarter of the year and to 6.9 per cent for 2015. The annual growth rate is the weakest in 25 years, and the quarterly level undershot market expectations, posting its lowest reading since the financial crisis. The tools traditionally utilised by governments to revive growth – infrastructure spending, easy credit and increased exports – appear increasingly ineffective in the case of the Chinese slowdown.

The issues in China have generally extended globally through stock market uncertainty. During the first two weeks of 2016, the Shanghai Composite Index fell 18 per cent. The instability in the Chinese market has been linked to market confusion regarding the direction of the Renminbi exchange rate, following gradual but constant ten-day depreciation against the Dollar that fuelled capital outflows.

These issues have fed into other global economies including Japan and the US where stock market volatility has been particularly high in recent months. Of these markets, banking stocks have been hit particularly hard. Italy's third-biggest lender Monte Dei Paschi di Siena has lost 56 per cent of its share price in the first two months of 2016. Outside the Eurozone, the share price of British bank

7 See https://yougov.co.uk/news/2016/02/24/yougov-view-eu-referendum-polling for more details.

8 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.

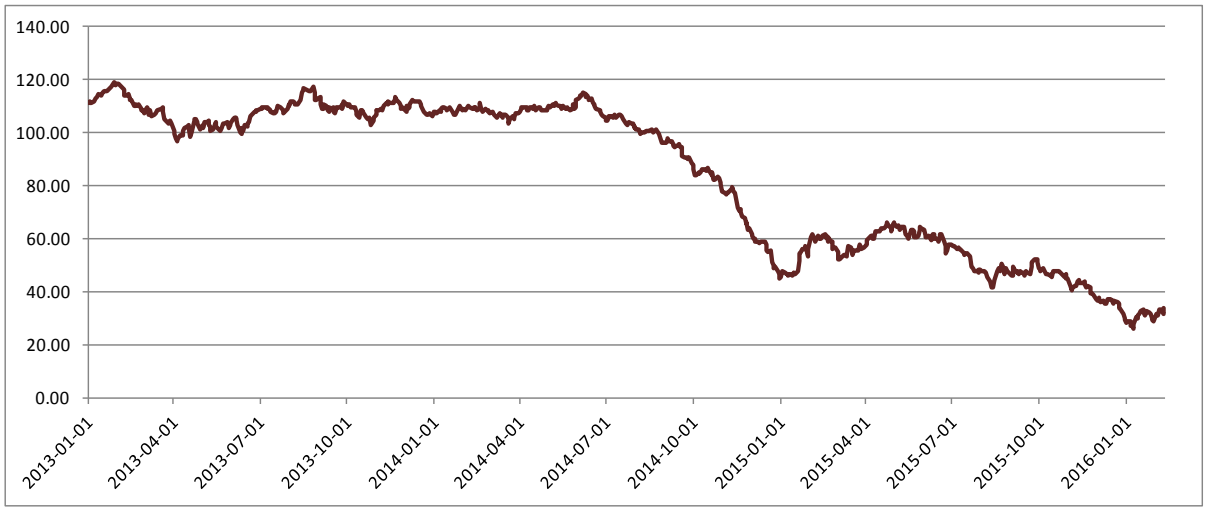
Barclays has fallen by 30 per cent and Switzerland's Credit Suisse by 40 per cent over the same period.

In July 2015, the International Monetary Fund (IMF) World Economic Outlook forecast growth in 2016 of 3.8 per cent. This has since been revised downward in their most recent forecast to 3.4 per cent. Similarly, downward revisions have been made by the World Bank in their Global Economic Perspectives. In January 2015 world growth in 2016 was forecast at 3.3 per cent. Twelve months later and the growth prospects for 2016 now stand at 2.9 per cent. In the Winter *QEC* we sought to quantify the effect on the Irish growth rate of a substantial global shock. Analysis by Bergin et al. (2013),[9] determines that Irish GDP would fall by 0.8 per cent in response to a 1 percentage point fall in world growth. Exports of goods and services would also fall by 3.2 per cent in the first year of 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.

Oil prices remain stubbornly low in the first quarter of 2016. In mid-February prices rose more than 14 per cent in three days following a plan by Saudi Arabia and Russia, endorsed without commitment by Iran, to freeze oil output at January's highs. The Saudi-Russian production freeze plan, also joined by Qatar and Venezuela, is the first such deal in 15 years between the Organization of the Petroleum Exporting Countries (OPEC) and non-OPEC members. It is difficult to say if this move will cause the price of oil to increase by any substantial amount over the coming year as the market is currently over-supplied by roughly two million barrels a day. Since the beginning of 2016 the price of Brent Crude Oil has settled at around US$35 per barrel, falling as low as US$26 in mid-January. In the 12 months to the end of February 2016, the price per barrel has fallen some 44 per cent (see Figure 4).

9 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.

FIGURE 4 Oil Price US$ per Barrel (Brent – Europe; not seasonally adjusted)



Source: Federal Reserve of St. Louis.

The most recent Euroframe report[10] utilises the National Institute of Economic and Social Research's structural global econometric model, NiGEM to analyse the effects on US, Japanese and Euro Area growth rates in response to a temporary/ permanent US$10 per barrel fall in oil prices. Estimates show that a temporary US$10 per barrel oil decline for two years provides a boost for GDP in the three areas. While there is a slight increase in GDP in the first year of the shock, the effect is more than doubled in all three areas before dissipating rapidly after the shock.

In the event of a permanent decline in the oil price, the long-run simulated path of output remains permanently above the baseline, though the effect is lowest in the Euro Area. A permanent oil price decline will provide permanent output effects, which follow a fall in the terms of trade and the real long-term interest rate.

Implications for Irish Exports, Imports and the Balance of Payments

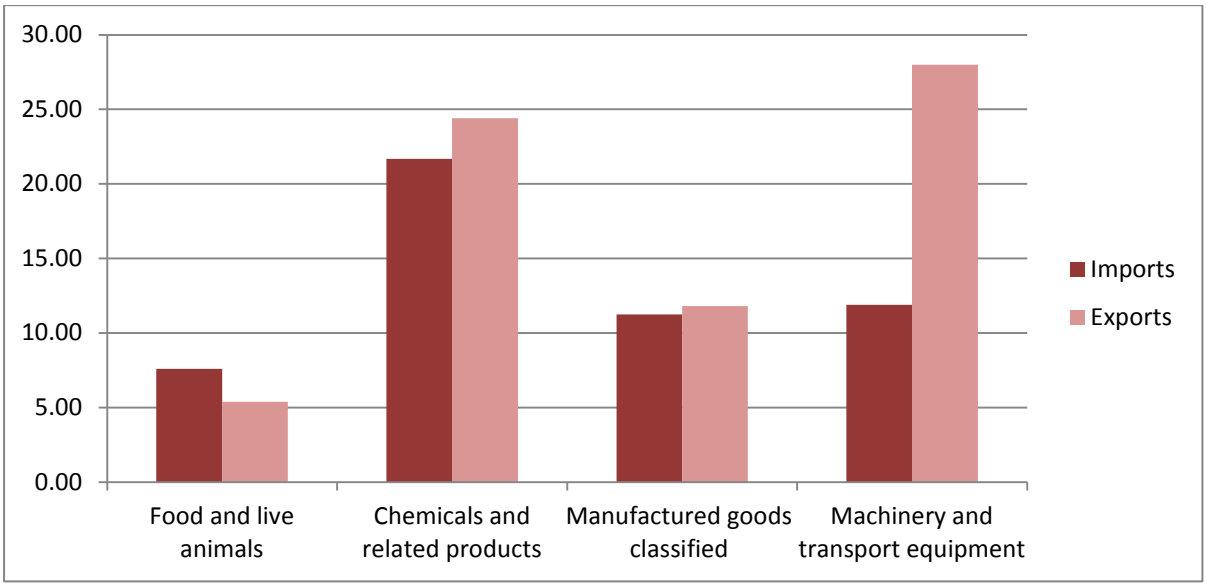
Ireland's trade performance in 2015 has consisted of very strong growth in both imports and exports. Goods exports have grown by almost 20 per cent over the year largely spurred by competiveness gains from a weakening Euro as well as growth in major trading partners such as the UK and the US. Goods import growth was also solid, increasing by 10.1 per cent over the year. This culminated in a record annual trade surplus of just under €4 billion, an increase of 38.6 per cent over the year. Once again the largely multinational pharmaceutical sector played a leading role in the observed growth, with exports of medical and

10 See www.euroframe.org/files/user_upload/euroframe/docs/2016/EUROFRAME%20Report_2016.pdf.

pharmaceutical products increasing by 36 per cent or €7.945 billion over the year, largely as a result of a weakened Euro increasing profitability.

Although much of the growth originated in the pharmaceutical sector, there was a broad range of growth in many of other sectors. Figure 5 shows the growth observed in both imports and exports in some of the main exporting sectors. As we can see, there was robust growth in most of the main sectors. As far as exports are concerned, there was a decrease in growth in two of the main sectors, including crude materials, inedible, except fuels of -1.0 per cent (year-on-year) and minerals, fuels and related materials of -6.1 per cent, partly as a result of depressed oil prices.

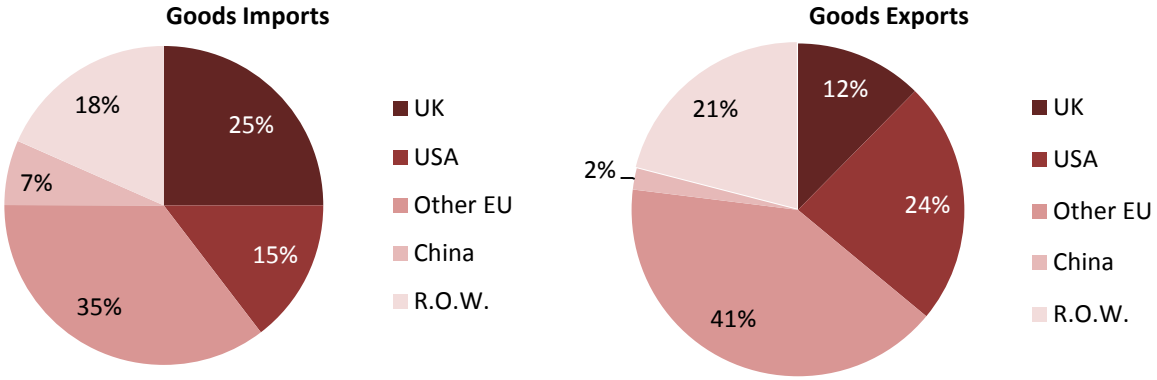
FIGURE 5 Export and Import Growth in Selected Trading Sectors Dec 2014-Dec 2015 (%)



Source: Central Statistics Office.

Figure 6 shows the relative proportion of Ireland's exports and imports in relation to our major trading partners. The UK and the US remain our single biggest trading partners in 2015 and together accounted for approximately 40 per cent of our exports and 36 per cent of our imports. China accounts for approximately 2 per cent of our total goods exports and so a slowdown in China would have minimal direct effects on Ireland's growth. However, as mentioned in previous *Commentaries*, the indirect effect of a global slowdown in growth as a result of weakening growth and demand in China could have a substantial effect on Ireland's growth by way of a slowdown in growth in our major trading partners.

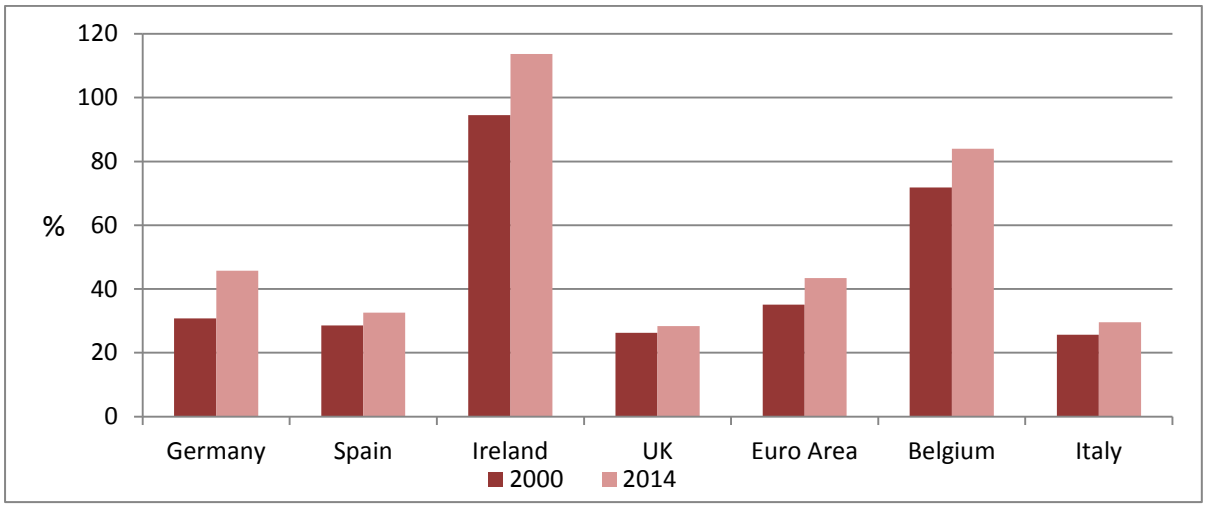
FIGURE 6 Goods Exports and Imports by Geographic Region 2015



Source: Central Statistics Office.

The openness of Ireland's economy means that our trade sector is a vital component for economic growth. This is clear when one compares the evolution of total volume of exports to GDP compared to other selected OECD countries (Figure 7). The volume of exports in Ireland has become larger than our GDP since 2000 and as of 2014 stands at 114 per cent, almost three times the European average. As mentioned above, although there is growth across most sectors of the economy, the majority of the growth in goods exports is concentrated in the chemical and related products commodity group which includes pharmaceutical and medical products. In 2015 this sector accounted for approximately 57 per cent of total goods exports. Having growth skewed towards a relatively small number of sectors certainly presents a source of risk to the economy especially if negative shocks to these sectors were to occur. Ideally, growth would be more evenly distributed so as to diversify some of the risk building up in this area.

FIGURE 7 Comparison of Total Exports to GDP Ratio for Selected Countries



Source: World Bank Data.

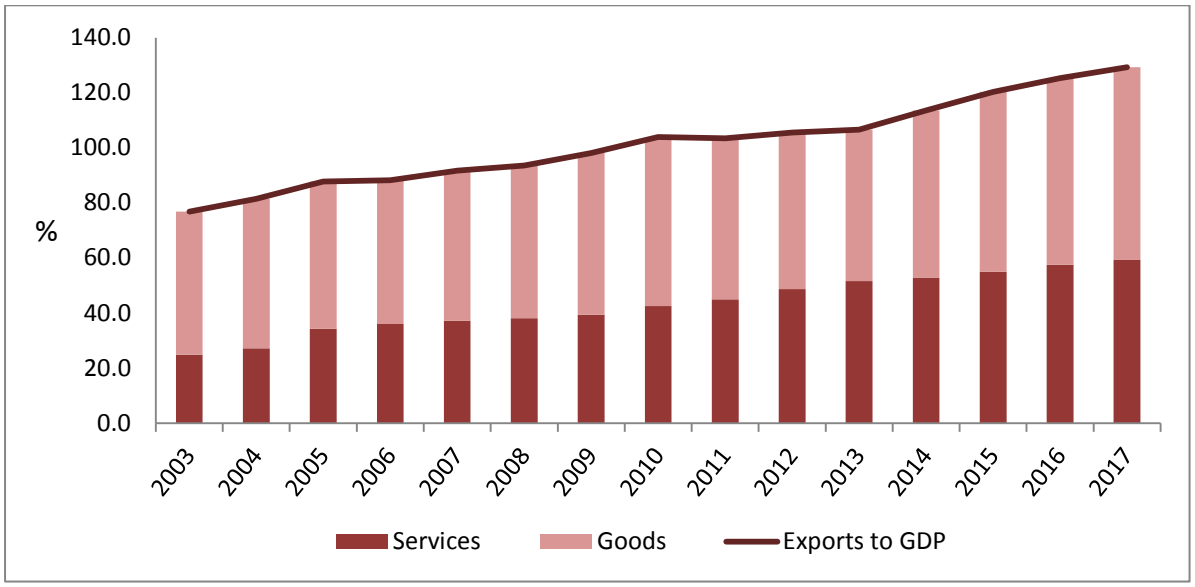
The impact of contract manufacturing on trade statistics has been mentioned in previous *Commentaries*. Recent research[11] quantifies the likely effect that this has on goods exports in the last few years and suggests that in 2014 goods exports grew by 6.1 per cent when an adjustment was made for contract manufacturing, down from 12.1 per cent without the adjustment. Perdue and Huang (2015) also estimate the effect for 2015 and suggest the growth rate of goods exports to be 15 per cent excluding contract manufacturing. Although the effect is still present and distorts the data, there was still quite robust real growth in exports in Ireland in 2015.

If we decompose exports into the contribution from goods and services as in Figure 8, we can see that historically goods made up the vast majority of exports. In 2003 for example, goods exports accounted for approximately 68 per cent of total exports. In recent years we can see that the relative contribution from service exports has increased and as of 2014 was approximately 46 per cent of the total.

Imports are also distorted by the presence of large multinationals in Ireland. In particular, factors such as intellectual property rights and research and development are inflating import levels. These factors also distort the level of investment making the growth rates in these aggregates quite volatile. This may be a significant feature in the National Accounts in 2016 given the pending merger of Pfizer and Allergen. The overall impact on GDP, however, is minimal as the rise in both imports and investment tend to offset each other.

11 Perdue, D. and H. Huang, (2015). 'Irish Exports: The facts, the fiction and the risks'. National Treasury Management Agency (NTMA) report.

FIGURE 8 Decomposition of Export Growth into Goods and Services Exports



Sources: Central Statistics Office Quarterly National Accounts, 2016-2017 ESRI forecasts.

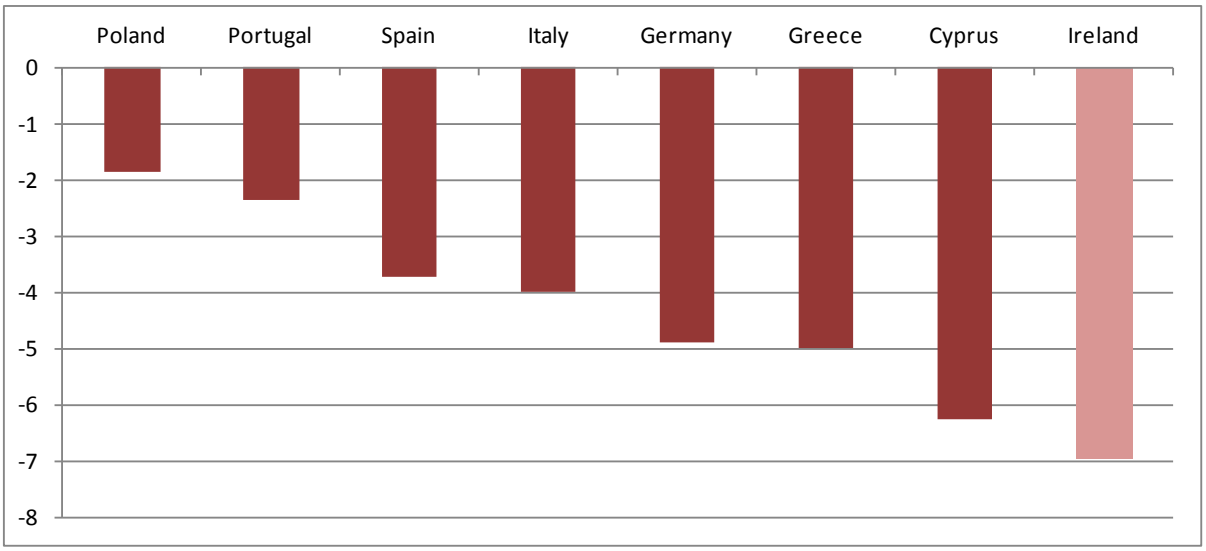
Apart from the possibility of a global slowdown in trade in 2016, the main source of risk for our trade outlook stems from Britain's potential exit from the EU (Brexit). If Brexit were to occur this would certainly worsen the outlook for Ireland's trade in 2017. While there would be negative effects if Brexit were to occur, there are also upside risks as it may lead to an increase in FDI as Ireland captures some of the relocating FDI with our low corporate tax rate and access to the EU market; however the effect of any increase in FDI is expected to be small.

The Balance of Payments release for Q4 2015 shows a current account balance surplus of €2,773 million. The total surplus for 2015 was €9,548 million or 4.4 per cent of GDP, an increase of €2,715 million on 2014. Annual service trade is up substantially in 2015. In particular, service imports grew by 20 per cent in the year to Q4 2015. The largest growth occurred in royalties and licences at 25 per cent and accounted for just under half the growth in overall service imports. Robust growth was also observed in business services of 16 per cent and financial services of 13 per cent.

Total service exports also experienced robust growth across the majority of sectors in the year to Q4 2015. Computer services, which accounted for approximately 48 per cent of total service exports, grew by 17 per cent when compared to Q4 2015. As well as this, financial services and business services exports increased by 25 and 12 per cent respectively. There were also decreases observed in repairs and processing of -21 per cent and communications of -6 per cent. These sectors contribute a relatively small proportion of the total and were more than offset by the strong growth in the other sectors. The result was overall growth in total service exports in the year to Q4 2015 of 15 per cent.

The strengthening of US and UK currencies in 2015 partly reflected the relatively strong economic performance of those economies, which further boosted demand for Irish goods and services. Figure 9 displays the percentage change in the real effective exchange rate from August 2014 to August 2015. It is clear to see that within the Euro Area, Ireland is benefiting most from the weak Euro. Both the Dollar and Sterling appreciated sharply vis-à-vis the Euro in the past 12 months. On average in 2014, one Euro would get US$1.33, this dropped to US$1.10 in 2015. Similarly the Euro/Sterling exchange rate for one Euro fell from £0.81 to £0.73.

FIGURE 9 Annual Change in Real Effective Exchange Rate (%) (August 2014-August 2015)



Sources: World Bank staff calculations based on Datastream and IMF International Finance Statistics data.
Note: Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.

Growth in exports is set to continue in 2016, driven mainly by favourable external factors such as the weak Euro and modest growth in our major trading partners feeding into strong demand for our exports. As well as this, recent high frequency trade indicators also suggest growth in goods and services traded is set to continue to remain positive moving into 2016. However, in light of the global trade uncertainty and expected lower emerging market demand, we forecast growth in exports to moderate somewhat at 8.9 per cent in 2016, growing a further 6.7 per cent in 2017. Given the recent increase in employment and growth in the domestic economy, we also expect import growth to continue into 2016, albeit at a somewhat more moderate rate than 2015, at 11.9 per cent and a further 10.4 per cent in 2017.

The Domestic Economy

Output

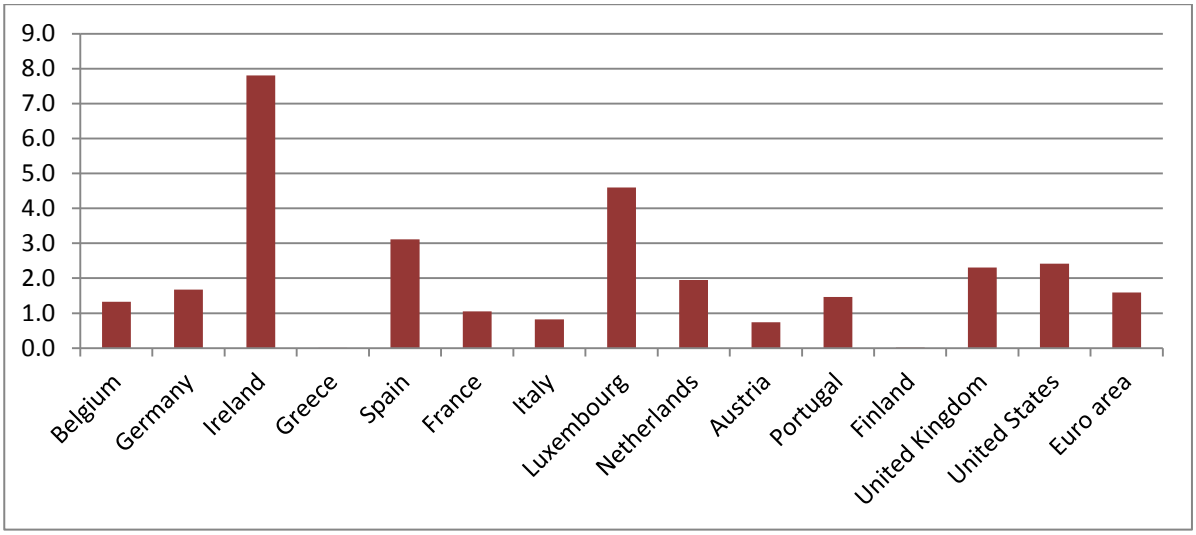
The domestic section of the *Commentary* is organised as follows; we initially review the outlook for output growth before discussing developments in the Irish monetary and financial sectors. Prices and earnings in the economy are then discussed, followed by a review of demand-side factors such as consumption 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.

In 2015 the Irish economy grew by a substantial 7.8 per cent. Figure 10 compares the performance of the Irish economy with the output growth rates of a select cross-country sample. The relatively strong performance by the Irish economy in an international context is readily apparent. Of interest also in the graph is that the US and UK, both key trading partners of the Irish economy, also experienced relatively strong growth rates, particularly by European standards.

We believe that the Irish economy will continue to experience strong growth in 2016 with GDP set to grow by 4.8 per cent and GNP increasing by 5 per cent. While the world trade outlook is somewhat uncertain with vulnerabilities in the Chinese economy becoming increasingly more apparent, the growth outlook for Ireland's major trading partners still remains positive.

The Nowcasting model (summarised in the Appendix), which was particularly accurate in tracking movements in the Irish economy through 2015, indicates that the domestic economy grew by nearly 1.5 per cent for Q1 2016 following an increase of 2.7 per cent in Q4 2015.

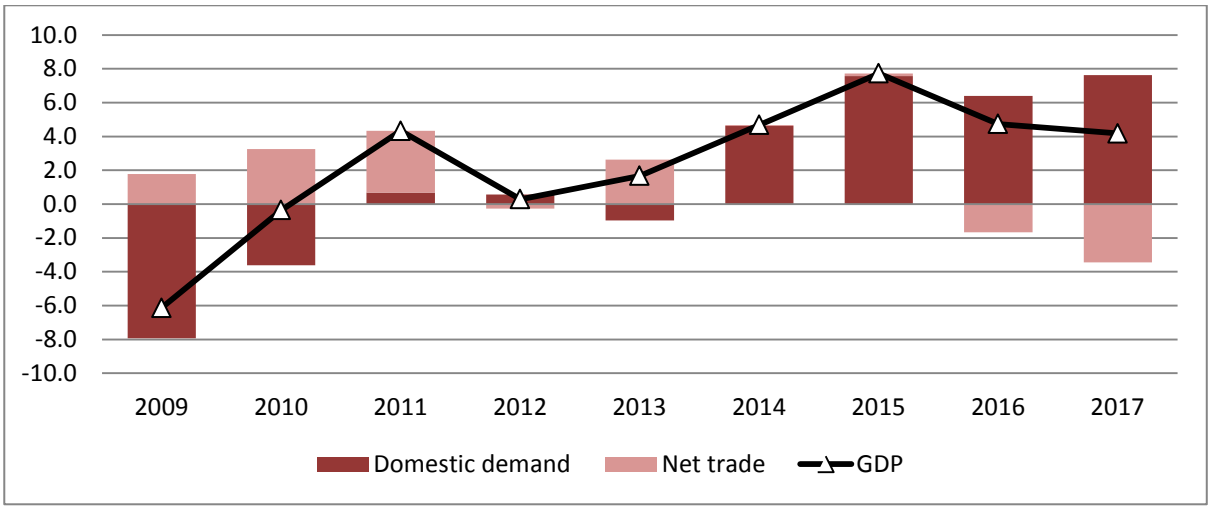
Figure 10 2015 GDP Growth Rates (%) for a Select Cross-Country Sample



Source: AMECO estimates.

One aspect of the recent Irish performance however, which is apparent from Figure 11, is that the dynamics of the recovery appear to be shifting somewhat; the initial phase of the post-2012 performance was very much dominated by export-led growth with domestic sources such as investment and consumption contributing from 2014 onwards. Last year in particular saw a strong contribution from consumption, with Irish households increasing their purchases of goods and services by the largest amount since 2007. Our expectation is that this trend will continue through 2016 and into 2017 with domestic sources of growth increasingly to the fore in generating overall economic activity.

Figure 11 Domestic and External Sources of Irish GDP Growth (%)



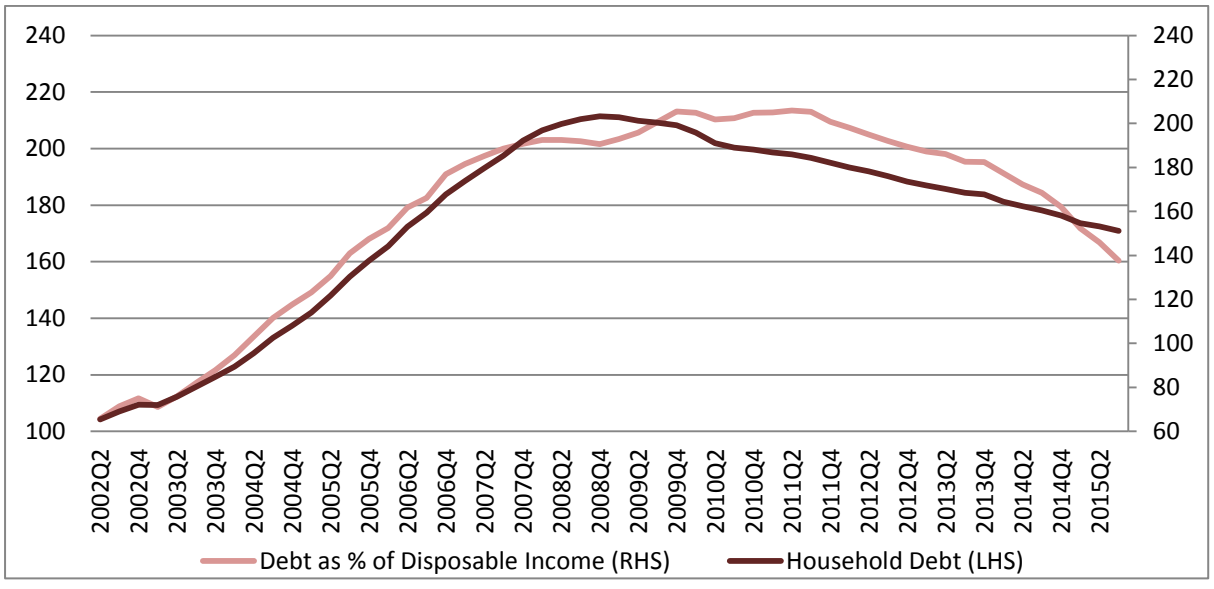
Source: *QEC* estimates.

In the last *Commentary* we compared the actual rates of activity in the economy for investment, total factor productivity and the labour market with their corresponding long-run trends. This, in turn, enabled us to estimate the current output gap for the Irish economy. In light of the expected strong performance of the economy in 2016, we believe the output gap will close this year. Consequently, this would result in the economy returning to the potential output growth rate next year, which we estimate is approximately 3.5 per cent. Nonetheless, in light of the strength of the recovery in the present year, we feel growth next year will be in excess of this at 4 per cent.

Monetary and Financial Conditions

The most recent Quarterly Financial Accounts show a further improvement in household circumstances. Figure 12 shows both the total level of household debt in the economy and the ratio of debt to income. The graph shows that total household debt decreased in Q3 2015, falling to €151.2 billion or €32,614 per capita, and is the lowest level reached since Q1 2006. This is equivalent to a €2.1 billion or 1.3 per cent decline over the quarter. Overall, households' debt positions have improved by 25.8 per cent since their peak of €203.7 billion at Q3 2008. A significant improvement in the debt to disposable income ratio was also observed for the quarter, falling to 160.4 per cent or a decline of 6.4 percentage points. The trend seems to be continuing downwards showing marked improvements in household balance sheets.

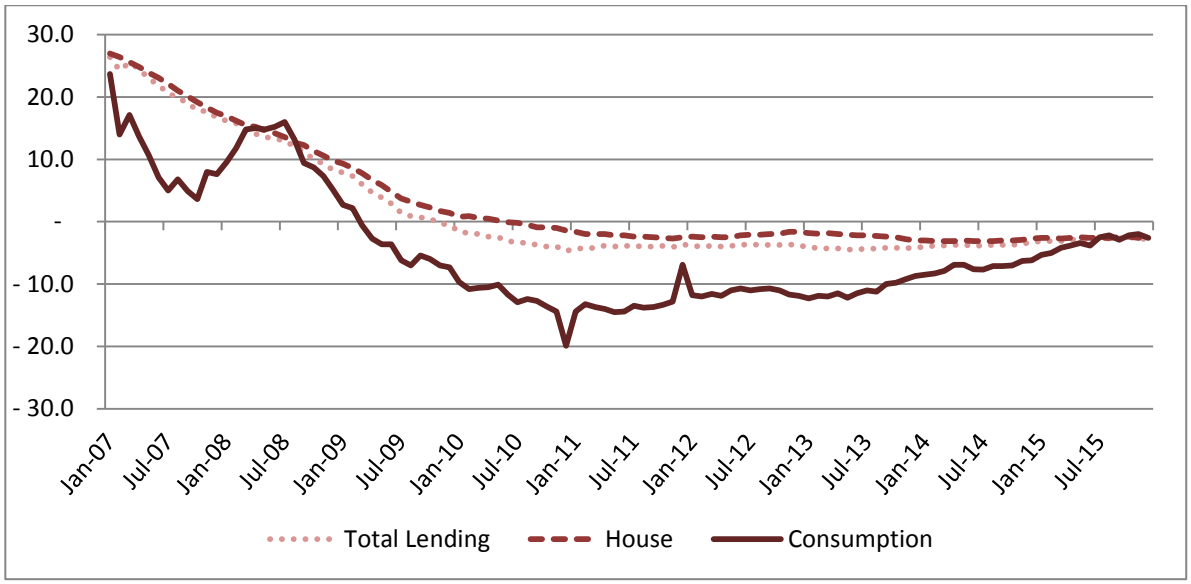
Figure 12 Irish Household Debt as % of GDP (2002-2015)



Sources: Central Statistics Office and Central Bank of Ireland.

As well as this continued deleveraging, household net worth[12] rose to €617.6 billion or €133,225 per capita during Q3 2015. This 2.9 per cent increase reflects both an increase in housing asset values as well as a further decrease in household liabilities and marks a cumulative increase of 39.1 per cent since its lowest level of €444 billion in Q2 2012.

Figure 13 Growth in Lending to Irish Households



Source: Central Bank of Ireland.

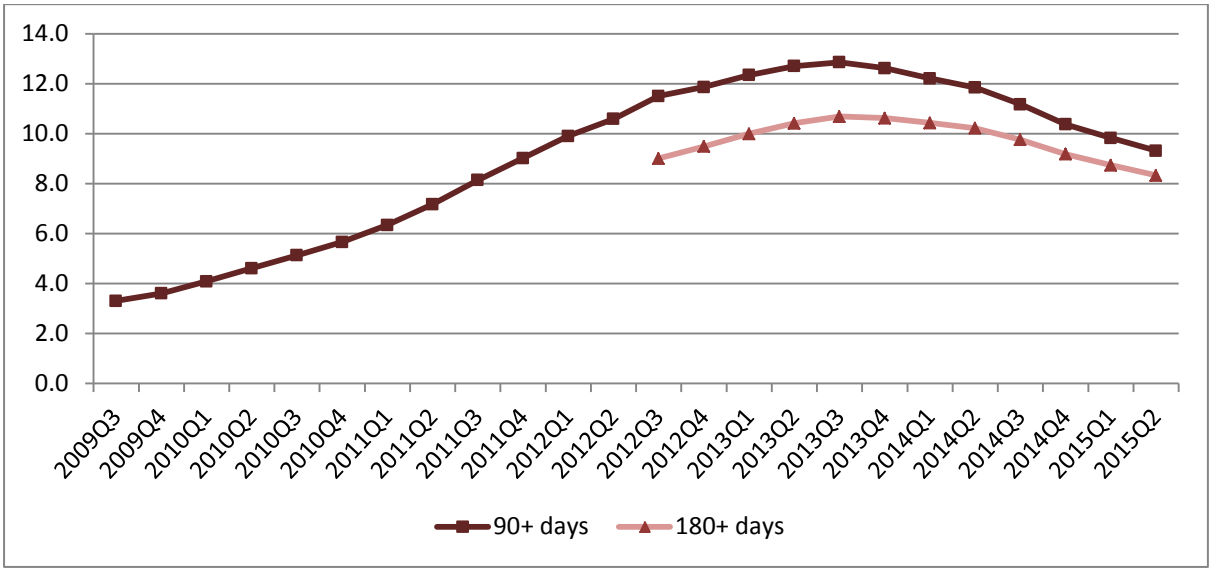
As pointed out in the last *Commentary*, although the growth rate of credit extended to households remains negative, we do see the negative rate beginning to level off. The negative rate of growth reflects the significant deleveraging undertaken by households over the last few years but this rate of decline seems to be significantly moderating over the past year. This is especially true in the growth rate of lending for consumption purposes which likely reflects that some households are borrowing to fund the large increase in consumption that was observed in 2015. This trend is also consistent with the record high levels observed in the KBC/ESRI Consumer Sentiment Index over recent months. 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.

The number of mortgage accounts in arrears for principal dwelling houses (PDH) declined again in Q3 2015. There were a total of 92,291 or 12.3 per cent of accounts in arrears at the end of Q3 2015 representing a 6 per cent decline over the previous quarter and is the ninth consecutive quarter that the rate has fallen. Figure 14 shows

12 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).

the percentage of total loans in arrears for over 90 days and for over 180 days. There has been a clear downward trend in both series over the last two years showing that households seem to be catching up on mortgage repayments. This likely reflects the general improvement in the unemployment rate and the wider labour market as well as the continuing increase in restructuring arrangements implemented by banks to provide an opportunity for households to repay their mortgages. There was a total stock of 120,806 PDH mortgage accounts categorised as restructured at end-September 2015. This trend continues in the buy-to-let market with mortgages in arrears of over 90 days falling 4.5 per cent over the quarter.

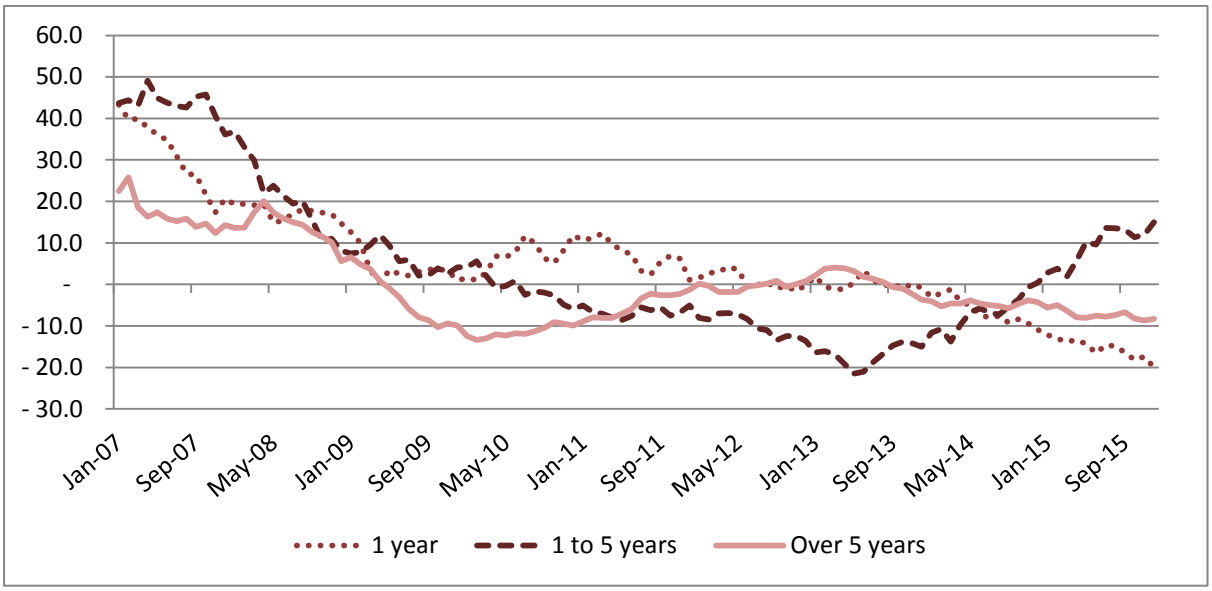
Figure 14 Select Mortgage Arrears Rates (%): Q3 2009-Q2 2015



Source: Central Bank of Ireland.

Figure 15 shows the growth rates in lending to Irish Non-Financial Corporations (NFCs). The pace of lending to Irish NFCs in the pre-crisis years was among the highest in the Euro Area and was mainly driven by property-related lending. Post-crisis the growth in lending slowed, with all maturities turning eventually negative. Most recent data show that both short-term and long-term NFC's loans have been declining for the last two years. Although overall lending to NFCs showed an annual decline of 7.4 per cent in December, an interesting trend has emerged of late in lending for medium-term loans of one to five years. The rate turned positive in early 2015 and has continued to increase on an annual basis. In December 2015 there was a growth rate of 15 per cent recorded in loans of medium maturity.

Figure 15 Year-on-Year Growth Rate (%) of Lending to Irish Resident Non-Financial Corporations: Q1 2007-Q2 2015



Source: Central Bank of Ireland.

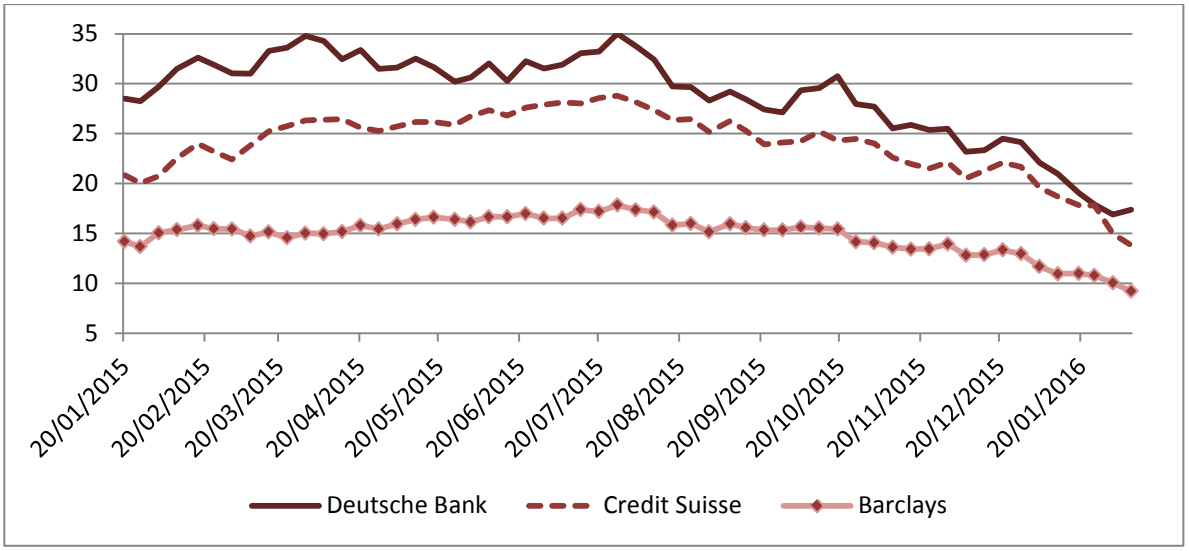
Given that many small medium enterprises (SMEs) in Ireland are indigenous and many of them rely on financing to a greater extent than large multinationals, it is informative to look at the level of credit extended to them. Overall the outstanding stock of credit advanced to Irish SMEs by resident credit institutions decreased 11.4 per cent in the year to end-Q3 2015, to stand at €47.4 billion, and is the thirteenth consecutive quarterly decline. There were however, year-over-year growth rates observed in certain sectors. In particular, Central Bank data for Q3 2015 show that there were significant growth rates in credit observed in certain manufacturing sectors and information and communication sectors.

Financial markets, particularly in Europe, have been experiencing significantly more volatility in the beginning of 2016. Much of the volatility has related directly to bank stocks, with Deutsche Bank, Barclays, and Credit Suisse losing 40, 30 and 40 per cent of their market values respectively (Figure 16), while the Eurostoxx index of European banks is down 27 per cent this year.[13] This partly reflects the deterioration of banks' balance sheets in recent months due to non-performing loans. Ordinarily banks would be able to offset some of these losses with profits but the current protracted low interest rate environment as a result of the ECB's expansionary monetary policy is arguably reducing bank profitability, making it significantly more difficult to build up adequate capital.

13 As of 15 February 2016.

Another issue which has caused uncertainty amongst European financial institutions are contingent convertible bonds (CoCos). These products are a type of bond that typically offers a higher interest rate to investors. The downside of this is that the bonds can be converted into equity by the banks who issue them if they start to make losses. This directly transfers the risk from the banks to the bondholders. These kinds of financial instruments have become very popular in recent years as banks could raise capital without diluting current shareholders. The value of Deutsche Bank CoCos has plummeted in recent weeks suggesting increased investor uncertainty and potential increased financial market turmoil in the months ahead. Given the interconnectedness of banks with the global financial system and the real economy,[14] issues about such new financial instruments may compound existing concerns about the health of the European banking sector. Of particular concern in the coming months is the extent to which these financial market considerations may impact on real economy indicators.

Figure 16 Selected Bank Stock Price (US$, Adjusted Close)



Source: Yahoo Finance.

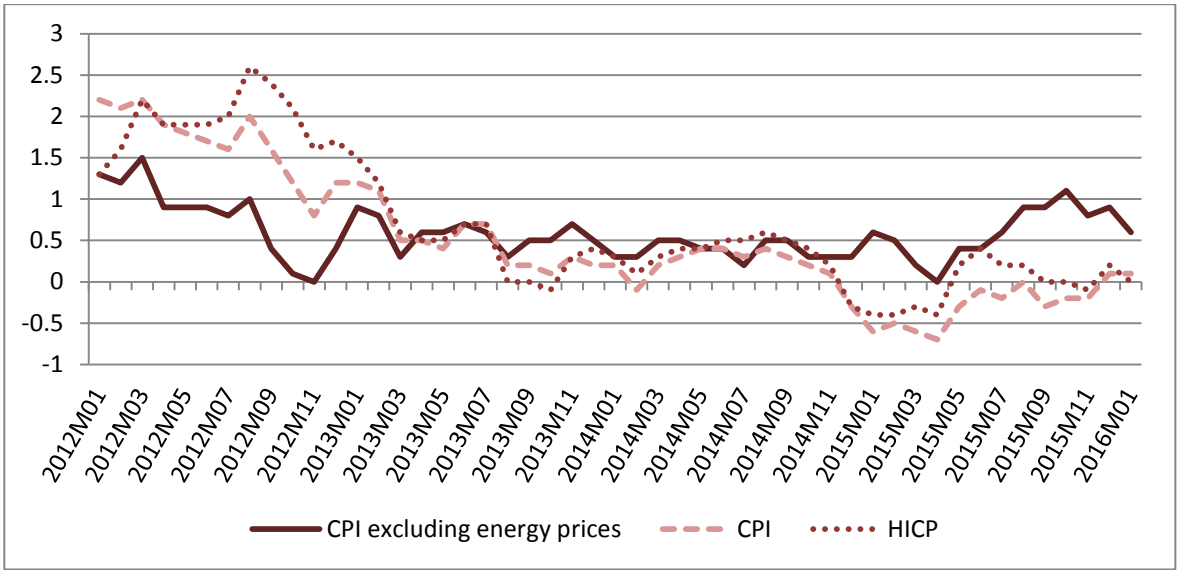
Prices and Earnings

The monthly Consumer Price Index (CPI) fell significantly in January by 0.8 per cent compared to the December reading. This is the most significant monthly decrease since January 2015 where it also fell by 0.8 per cent. The sectors contributing to the largest decrease were clothing and footwear, transport and furnishings, household equipment and routine household maintenance falling by 0.44, 0.28 and 0.11 per cent respectively. The largest increase (0.14 per cent) was due to alcoholic beverages and tobacco.

[14] Čihák, M., Muñoz, S., and R. Scuzzarella (2011), 'The Bright and the Dark Side of Cross-Border Banking Linkages,' IMF Working Paper No. 11/186.

Compared to January 2015, prices as measured by the CPI were 0.1 per cent higher. Figure 17 shows the annual percentage change in inflation over the last two years. Negative annual rates were observed for nearly all months of 2015 with the exception of August where the rate was 0.0 per cent and December where the rate was marginally positive at 0.1 per cent. External factors such as weak commodity prices and, in particular, lower oil prices continue to exert significant downward pressure on inflation. The sub index excluding energy has been consistently higher than the headline rate since the start of 2015 and most recently the annual growth rate was 0.6 per cent.

Figure 17 Annual Growth in Inflation (%)

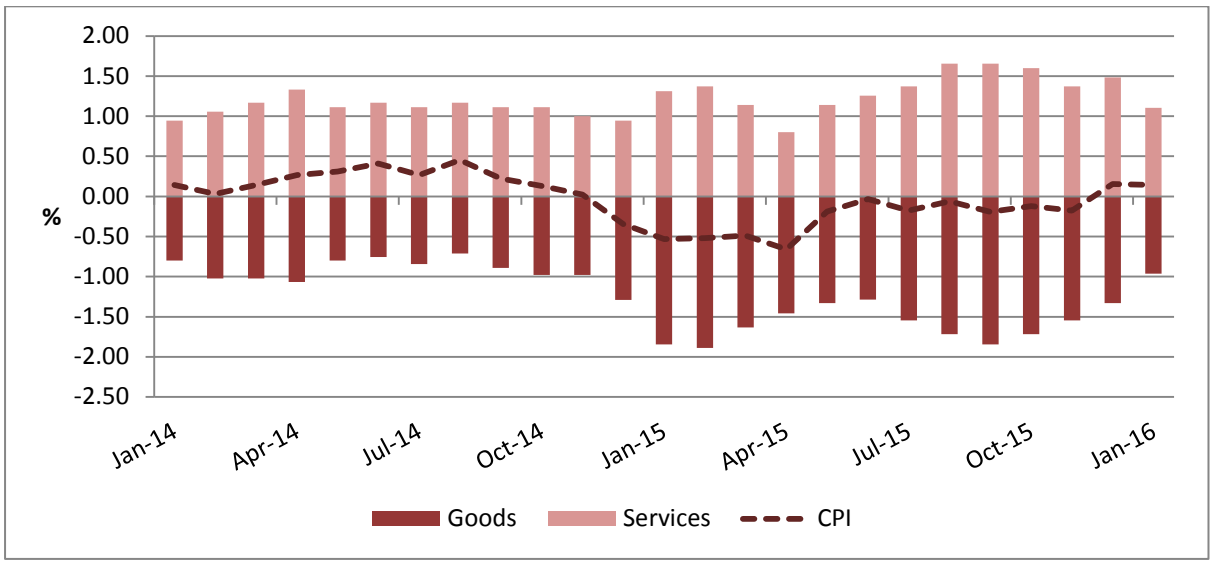


Source: Central Statistics Office.

Some of the major changes in the index over the year included increases of miscellaneous goods and services, education, communications and restaurants and hotels of 4, 3.8, 1.7 and 1.5 per cent respectively. As well as this, decreases occurred in clothing and footwear of 4.1 per cent, transport of 2.5 per cent and food and non-alcoholic beverages of 0.9 per cent.

The overall headline rate of inflation can be somewhat opaque, and decomposing the index into goods and services components can be more informative for uncovering developments in prices over the year. Figure 18 provides a simple decomposition of the CPI into the contributions to the growth from goods and the growth from services. There is a clear and significant divergence in the growth rates of each component. The goods component has experienced consistent negative growth over the sample, partially due to lower oil and commodity prices experienced in the last two years. Interestingly, services growth has been consistently positive since January 2014 and as of January 2016 the annual growth rate was 1.9 per cent while the comparable rate for the goods component was -2.9 per cent.

Figure 18 Decomposition of Annual (%) CPI Growth into Goods and Services Growth



Source: Central Statistics Office.

The Harmonised Consumer Price Index (HICP) is designed to allow for cross-country comparisons of inflation within Europe. It aims to be representative of the developments in the prices of all goods and services available for purchase within the Euro Area for the purposes of directly satisfying consumer needs. Annual HICP in January remained unchanged from the January 2015 figure. The most notable changes in the year included education of 3.8 per cent; housing, water, electricity, gas and other fuels of 1.8 per cent; and communications of 1.7 per cent. The largest decreases were in clothing and footwear of 4.1 per cent and transport of 2.7 per cent attributed to sales and cheaper oil prices.

Preliminary estimates for earnings and labour costs show that Average Hourly Earnings fell annually by 0.5 per cent down to €21.94 in Q4 2015. Although quite volatile, the quarterly figure shows an increase of 2.2 per cent from Q3 to Q4 2015. There was an increase in Average Hourly Earnings in seven of the 13 main sectors in the year to Q4 2015. Of these, the largest increase was in the administrative and support services sector from €16.62 to €17.20 or 3.5 per cent. The largest decrease was observed in the financial, insurance and real estate sector, falling from €31.17 to €28.83 per hour or -7.5 per cent. It should be noted that some of these changes may be due to compositional issues.

Varied results in Average Annual Hourly Earnings were observed according to the size of firms. Enterprises with less than 50 employees showed an annual decrease of 0.4 per cent while there was annual growth in enterprises of 50 to 250 employees of 0.1 per cent. The largest firms, of 250 plus, experienced an annual decrease in Average Hourly Earnings of 0.9 per cent in Q4. There were also declines in both

public and private sector pay where earnings fell by 0.1 and 0.7 per cent respectively. This decrease is most likely due to compositional effects such as older, higher paid individuals retiring resulting in lower average wages in the public sector.

After a marginally negative rate of annual growth in the CPI in 2015 we forecast positive CPI growth in 2016 of 1.0 per cent as the ECB's monetary easing is expected to support increases in inflation in the Euro Area and as aggregate demand rises due to increased domestic activity, with strong consumption growth expected to continue into the present year. We also expect growth to be supported by a moderation in the fall of energy prices, as OPEC is expected to cut production of oil in 2016, which should ease the downward pressure in the energy component of the CPI. The relative weakness of the Euro to the Dollar and Pound and continuing import growth is also expected to contribute to inflation and we expect a further increase of inflation of 1 per cent in 2017.

TABLE 1 Inflation Measures

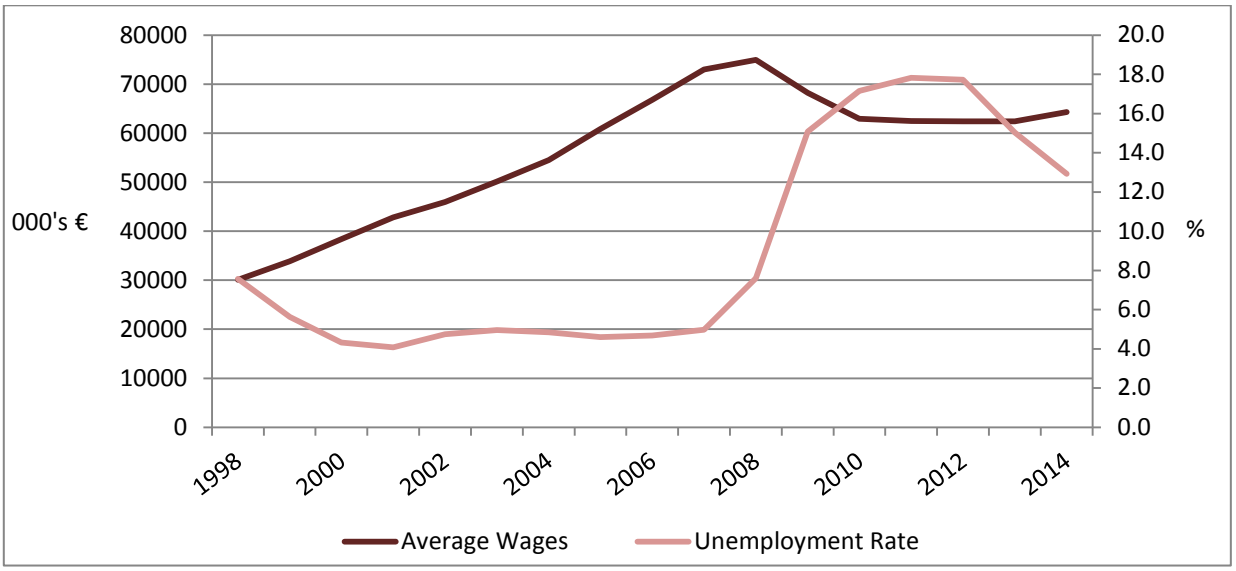
	2014	2015	2016	2017
	Annual Change			
	%	%	%	%
CPI	0.2	-0.3	1.0	1.0
Personal Consumption Deflator	1.7	0.4	1.0	1.0
HICP	0.3	0.0	1.2	2.2

Sources: Central Statistics Office and ESRI forecasts.

Figure 19 plots average wages against the unemployment rate. Ordinarily wage growth and unemployment are negatively correlated[15] as we can see from the graph. Indeed, steady growth in average wages was observed up until 2008, after which there was a large increase in unemployment followed by a fall in average wages. The recent fall in unemployment in 2014 and 2015 suggests that wages may well begin to recover in 2016. As well as this, recent tax data, particularly better than expected increases in income tax receipts, suggest a potential pickup in earnings in 2016.

[15] Simple calculation reveals correlation of unemployment and wage growth of -0.87 for the whole sample.

FIGURE 19 Average Wages vs. Unemployment



Sources: Central Statistics Office.

Demand

Household Sector Consumption

Preliminary National Accounts show that personal consumption in 2015 grew by 3.8 per cent in value and by 3.5 per cent in volume. The value of retail sales rose by 4.9 per cent in 2015 and the volume by 8.2 per cent. The strength of consumer demand in the final quarter of 2015 ensures that there will be a significant carryover of retail sales growth into 2016. If the retail sales index merely maintained its fourth quarter 2015 level throughout 2016, the annual volume of retail sales would be 2.1 per cent higher than last year.

Indicators for the range of factors influencing personal consumption point to a continuation of the growth in 2015. As outlined in the Labour Market section, employment is set to continue to increase, accompanied by a falling unemployment rate. Growth in disposable income is also forecast to improve and to become more widespread across sectors. Consumer sentiment, as measured by the KBC Bank/ESRI Consumer Sentiment Index has increased steadily since the early months of 2013. Thus, it is forecast that the volume of personal consumption will grow by close to 3.8 per cent in 2016 and by 3.5 per cent in 2017.

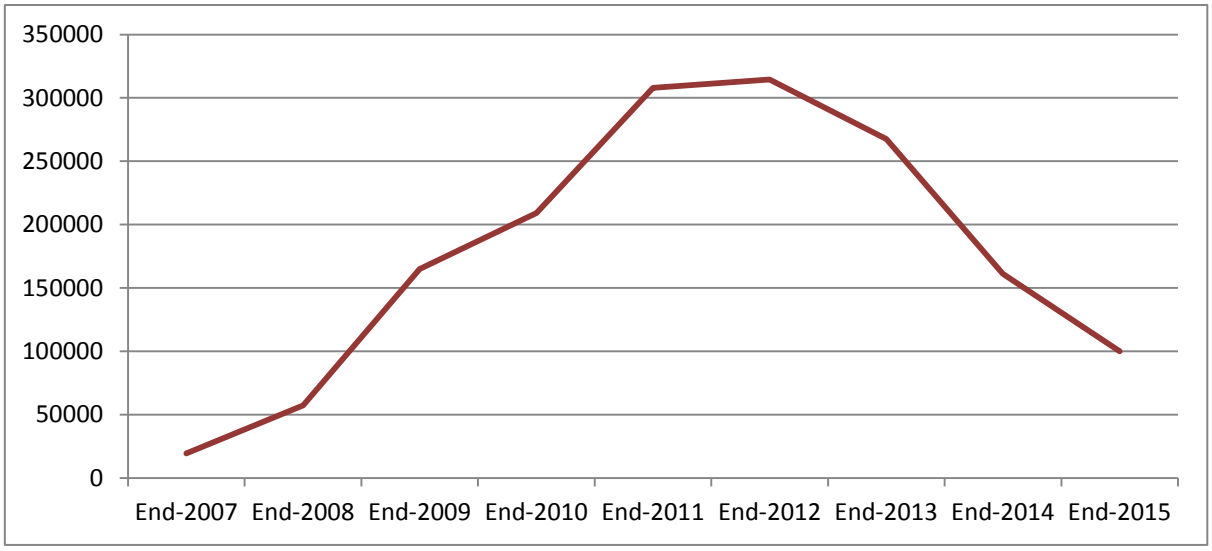
Public consumption or 'net expenditure by central and local government on current goods and services' contracted marginally in 2015, in contrast to the other categories of expenditure. A return to moderate volume growth of 1 per cent is forecast for 2016 and 2017.

Property Market Developments

CSO data show that house prices nationally were 0.5 per cent lower in January than the previous month. Despite this fall, residential property prices were 7.6 per cent higher than the previous year. The data point to a difference in regional performance. In Dublin residential property prices decreased by 1.2 per cent in January and were 3.4 per cent higher than a year ago. The price of residential properties outside Dublin rose by 0.1 per cent in January, and was 11.4 per cent higher than in January 2015. The PRTB/ESRI Rent Index shows that rents were close to 10 per cent higher in Quarter 4, 2015 than they had been a year previously. The indices point to a slowdown in the quarterly growth rate, from 3.6 per cent nationally in Q3 to 2.2 per cent in Q4. However, this has been a feature of rental growth in recent years, with weaker growth in the fourth quarter, following high activity levels in Quarter 3, consistent with the demand for student accommodation in that time period.

The stock of outstanding household mortgage debt amounted to €91.6 billion in January. In the year to January, mortgage loans declined at a rate of 2.5 per cent, with households repaying €1.9 billion more than was advanced in new loans. Based on the growth in house prices reported in the December Residential Property Price Index, we have updated our estimates of the number of mortgages in negative equity to take account of the growth in house prices to end-2015. The analysis shows a fall in the number of mortgages in negative equity to below 100,000 for the first time since 2008, to 99,950.

Figure 20 Number of Mortgages in Negative Equity, December 2015



Source: Central Bank of Ireland.

Recently the Central Bank of Ireland announced a review of the macro-prudential regulations, to take place in Summer 2016. House price growth has slowed since the introduction of the rules, although this may reflect the impact of affordability

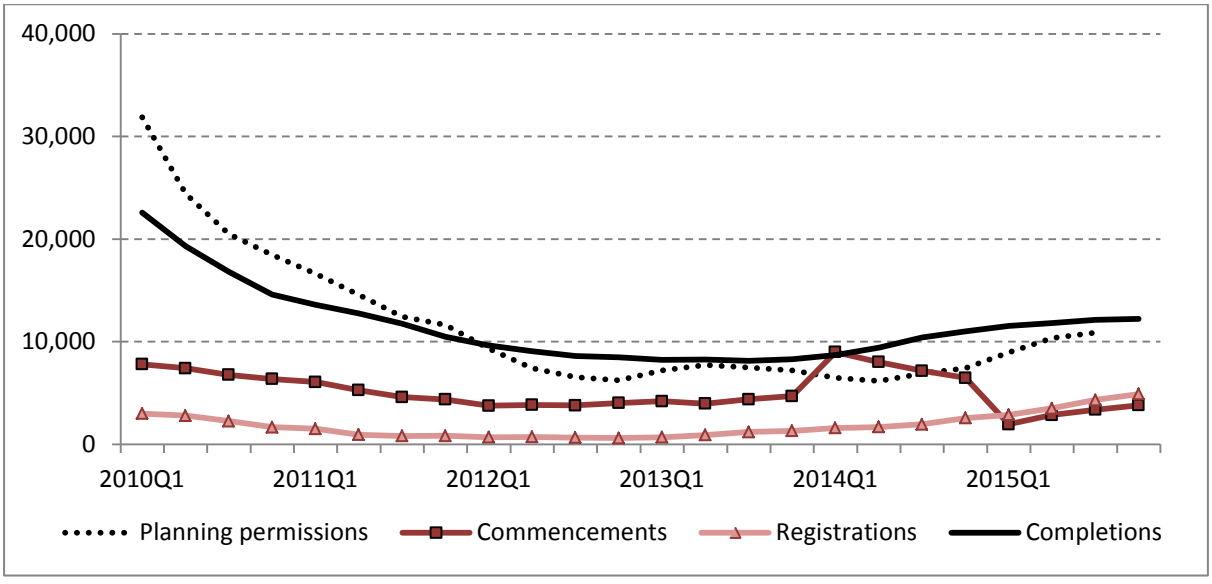
constraints, as well as tighter lending rules. We have previously argued that the macro-prudential measures be implemented on a rules basis, enabling cyclical considerations to be taken into account when setting limits. The proposed review represents an opportunity to adopt such rules which would aid the accountability and transparency of macro-prudential policy in Ireland.

Supply

Investment

The investment component of economic growth remains a difficult sector to forecast given that it is subject to one-off investments which can be large in nature. Data from the CSO show that the increase in investment was very strong in 2015, with volume growth of over 28 per cent and the value of gross domestic fixed capital formation increasing by 29.4 per cent, with the purchase of intellectual property rights contributing to the strength of investment in 2015. However, we continue to expect that investment will make a significant contribution to the domestic economy over the forecast period. Indicators for residential building and construction suggest that activity levels will increase, although at a moderate pace. Morgenroth (2016) in a *Research Note* published in this *Commentary* finds a causal relationship from completions to planning permissions, which might suggest that the receipts from completed developments are needed to commence the planning of new developments.

Figure 21 Housing Market Indicators



Source: Department of Environment, Community and Local Government.

Combined with public capital spending and growth in the amount of commercial property floor-space under construction, we forecast that the volume of investment in building and construction will grow by close to 13 per cent in 2016 and by close to 17 per cent in 2017.

Investment in machinery and equipment has been boosted in recent years due to aircraft purchases. However, steady growth in the economy and the need to undertake previously deferred investment should see a continuation of growth in this component of investment. In the absence of the one-off factors mentioned, the growth is likely to be more moderate than in 2015, although still strong at 26.3 per cent in volume in 2016 and 23.7 per cent in 2017. Thus, our forecast for the growth in overall investment is 22.5 per cent in real terms this year, followed by further growth of close to 22.1 per cent in 2017. Following empirical work conducted in the last *Commentary* our expectation is that residential investment will pick up somewhat in 2017 and 2018.

Labour Market

The latest Quarterly National Household Survey (QNHS) release shows that employment growth in the final quarter of 2015 was somewhat slower than in the first three quarters. Nonetheless, there was still quarter-on-quarter growth of 0.2 per cent culminating in an annual increase of 2.3 per cent. This represents an annual increase of 44,100 bringing total employment levels to 1,983,300, the highest level of employment in seven years. The growth consisted of an increase in both male and female employment of 1.8 and 2.8 per cent, or 18,900 and 25,200 respectively.

Between Q3 and Q4 there was an increase in the number of those full-time employed by 0.2 per cent as well as an increase in the number of part-time employed of 0.4 per cent. The results for the year are also positive with growth of full-time employment of 2.6 per cent and growth in part-time employment of 1.2 per cent. The relatively high proportion of full-time employment rather than part-time over the year is a sign of robustness in the labour market, as full-time employment provides higher certainty and stability for employees and the wider economy.

Looking at the various sectoral changes over the quarter suggests a broad improvement with increases of employment in 12 of the 14 sectors. The largest annual increase was in the construction sector, increasing by 9,900 or 8.5 per cent and now stands at 126,600. Some other notable increases were observed in accommodation and food services of 4.0 per cent and public administration and defence of 4.7 per cent. The two sectors experiencing a reduction in the annual employment included the financial, insurance and real estate activities and education of -3.9 and -0.4 respectively.

Table 2 shows the annual change in thousands and the annual percentage change in employment for all Irish regions. In Q4 2015 annual growth in employment occurred in six of the eight regions, and there were only two where growth rates fell on an

annual basis. The West experienced a decrease of 2,500 or 1.5 per cent while the Mid-East experienced a decrease of 2,100 or 0.9 per cent. Although there was growth in most of the regions, some of these were only marginal such as growth in the Mid-West of 0.2 per cent and in the South East of 0.4 per cent. As well as an increase in employment between Q4 2014 and Q4 2015, there were also falls in unemployment observed in all regions bar the West where the increase in the number of unemployed people was relatively small at 200.

Developments in the labour market become clearer if we consider growth over the period when the labour market began to pick up in Q4 2012 through to Q4 2015. Although there is quite a range of changes and different bases, Table 2 suggests some improvement in employment on a regional basis over the three years. There was, however a decline in employment in the West of Ireland between these two periods.

TABLE 2 Employment Growth by Region

Employment (000's)	Q4 2012	Q4 2014	Q4 2015	2012-2015 (% change)	2014-2015 (% change)
Border	171.5	185.8	195.0	13.7	5.0
Midland	105.7	113.7	120.8	14.3	6.2
West	180.9	181.1	178.6	-1.3	-1.5
Dublin	556.3	587.5	610.4	9.7	3.9
Mid-East	225.5	237.9	235.8	4.6	-0.9
Mid-West	150.1	152.8	153.1	2.0	0.2
South East	181.8	204.5	205.4	13.0	0.4
South West	277.0	275.6	283.9	2.5	3.0
State	1,848.9	1,938.9	1,983.0	7.3	2.3

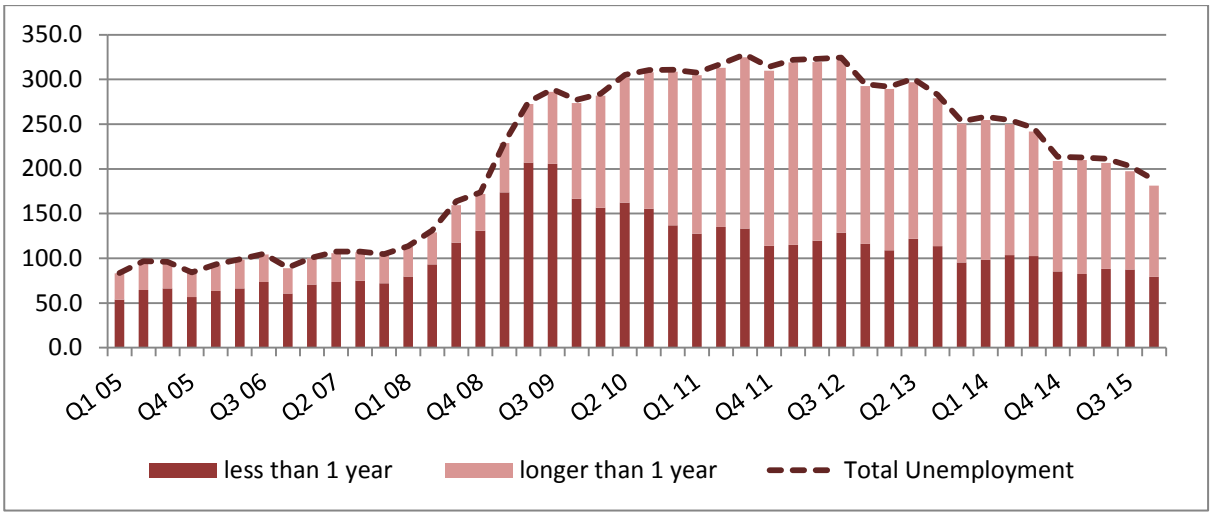
Source: Central Statistics Office.

The latest data from the CSO show the seasonally-adjusted unemployment rates fell from 9.2 to 9.1 percent between Q3 and Q4 2015. This compares to a rate of 10.4 per cent in Q4 2014 and is the tenth successive quarter where the rate has fallen. There was an improvement in both male and female levels of unemployment over the year to Q4 2015. Seasonally-adjusted male unemployment decreased by 12,900 or 9.1 per cent to 127,400 while female unemployment decreased by 14,300 or 17.2 per cent to 68,600.

Another indication of the robust recovery in the labour market is the significant decrease in the amount of people considered long-term unemployed. In the year to Q4 2015, the number of persons classified as long-term unemployed decreased by 21,300 or 17.2 per cent, while the number of short-term unemployed decreased by 6,100 or 7.2 per cent. Figure 22 shows the relative proportions of people in long-term (more than one year) and short-term (below one year) unemployment. It is

clear that the financial crisis and subsequent construction sector collapse had a significant negative impact on overall levels of unemployment. It seemed however, to have a relatively larger negative impact on long-term versus short-term unemployment. At its highest level, long-term unemployment accounted for 63 per cent of the total level. Given the negative outcomes[16] associated with high long-term unemployment, its decline in recent years is a welcome development. The proportion that consists of long-term unemployment is still very high relative to pre-crisis levels however, and currently accounts for the largest proportion of the total at approximately 54 per cent. The government employment activation programme JobPath which caters mainly for people who are long-term unemployed and assists them obtaining full-time employment is expected to lower the level of long-term unemployment in 2016.

FIGURE 22 Levels of Employment by Duration (000's)



Source: Central Statistics Office.

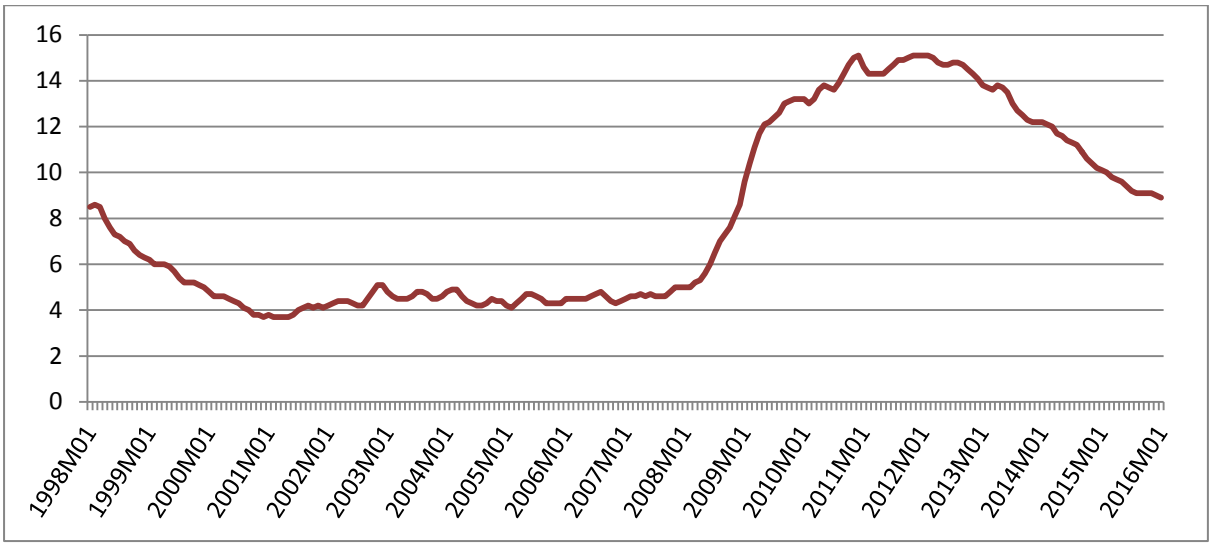
The overall youth unemployment rate (15-24 years old) remains a concern given its relatively high level compared to historic levels. This has fallen significantly over the past few years and more recently fell from 20.3 per cent in Q4 2014 to 18.9 per cent in Q4 2015 which is marginally below the EU average of 19.7 per cent. This decrease is, however, partly driven by falls in participation rates among this age group.

As well as the QNHS unemployment figure, the seasonally-adjusted monthly unemployment figure published by the CSO has continued to decline suggesting a significant improvement in the labour market. The monthly rate for February has fallen by 2,000 down to 8.8 per cent as seen in Figure 23. Although Ireland has seen a marked improvement in the unemployment rate in the last year, it is still only at the

[16] See Nichols, A., J. Mitchell and S. Lindner (2013). *Consequences of long-term unemployment*. Washington, DC: The Urban Institute.

European average. As of Q3 2015 the unadjusted unemployment rate among the EU28 was 9.0 per cent while the comparable rate for Ireland was 9.3 per cent. The lowest unemployment rate was observed in Germany of 4.4 per cent while the highest was observed in Greece at 24.1 per cent.

FIGURE 23 Seasonally-Adjusted Monthly Unemployment Rate (%)



Source: Central Statistics Office.

The overall picture, however, does point to continuing improvements in the labour market in 2016 as the domestic economy continues to improve and as Ireland remains an attractive prospect for foreign direct investment. We therefore expect the unemployment rate to continue to decline and reach an annual average of 8.7 per cent in 2016, falling further to 7.7 per cent by the end of 2017. The annual growth in participation was relatively small in Q4 2015 at 0.2 per cent; however, this is an improvement over recent quarters where it has remained static. As employment growth can typically lag GDP growth, we expect the surge in economic activity in 2015 to feed into employment in the coming year, and expect growth to be 2.0 per cent in 2016 and to grow a further 1.8 per cent in 2017. One of the biggest considerations in the likely path of future unemployment rates is developments in the housing market. Based on analysis conducted in the previous *Commentary*, our expectation is that housing supply will start to escalate somewhat in 2017 and 2018. This is expected to exert significant downward pressure on the unemployment rate at that point.

Public Finances

While full-year National Account tax revenue and government expenditure numbers are not yet available, all indications from the Government Finance Statistics for the first three quarters and the Exchequer returns for the year show that 2015 represented another significant improvement in the public finances. The Exchequer returns show that tax revenue was up 11 per cent on the previous year, much higher

than had been anticipated at the start of 2015. This is due to a number of factors including strong economic activity and employment growth, but also a much higher level of corporation tax receipts. Exchequer returns to December show that net voted current expenditure was 0.8 per cent higher in 2015. Based on these trends we estimate that the general government deficit reduced to €3.4 billion, with the 2015 deficit equivalent to 1.6 per cent of GDP. This compares to an underlying deficit excluding bank bailouts of 11.2 per cent in 2009.

With the economy expected to continue to show strong growth, employment increasing and personal consumption growing it is likely that tax revenue will increase again in 2016 and 2017. We also maintain our assumption that much of the improvement in corporation tax witnessed in 2015 will remain in place. Thus, total receipts are forecast to be over €68 billion in 2016 and close to €71 billion in 2017.

External discipline imposed by EU budgetary rules means our expectation is that growth in government expenditure will be close to target. The improving labour market will also reduce pressure on transfer payments and we anticipate that the cost of servicing the national debt will be lower than provided for, as is usually the case. If our assumptions prove to be correct, total expenditure will be €70.8 billion in 2016 and €71.3 billion in 2017.

On the basis of these forecasts the general government deficit should improve to €2.5 billion in 2016, equivalent to 1.1 per cent of GDP. If the economy continues to perform as forecast this improvement should continue through 2017 with the deficit reducing to approximately €400 million or just 0.2 per cent of GDP.

General Assessment

As we move into the first quarter of 2016 most of the available economic information suggests that the Irish economy continues to exhibit robust and significant growth. Tax returns for the first quarter of the year remain strong while recent labour market information indicates that the unemployment rate continues to fall and the rate of job creation continues apace. On foot of a significant increase in expenditure in 2015, consumer sentiment continues to remain positive into the new year. Therefore, we believe GDP will grow by 4.8 per cent in 2016 with GNP growing by 5.0 per cent.

One significant downside risk for the Irish economy in 2016 is via international trade. Globally, distress in financial markets has been a feature of the first quarter with many stock markets registering substantial declines in value. This in part reflects the weaknesses of many emerging economies. As noted in the Winter *Commentary*, from a trade perspective, the outlook for the Chinese economy is particularly worrisome; China has after all been the major source of demand for many commodities in the recent global recovery. The problems of the Chinese economy are not amenable to any quick technocratic fixes. The economy is extremely unbalanced, with very high savings rates and large levels of debt. As the year progresses the implications of continued uncertainty for the global trade outlook along with the results of the forthcoming UK referendum on Brexit will be of considerable interest. In light of the global uncertainty we have modified downwards slightly our forecast for exports of Irish goods and services. Nonetheless, the most recent set of high frequency data do indicate that the outlook for traded Irish goods and services remains very positive.

The volatility observed in international conditions reinforces the vulnerability of the Irish economy to exogenous shocks which potentially could yield adverse outcomes for, amongst other key variables, the public finances. This has potential implications for fiscal policy over the medium term; one of the key lessons to be learned from the downturn experienced in the Irish fiscal accounts post-2008 was that any diminution in the taxation base needs to be undertaken with extreme care. In the short- to medium term, this suggests that any buoyancy in taxation revenues currently being experienced would be more prudently employed through a combination of investment in public infrastructure and/or reductions in the national debt rather than through significant cuts in personal taxation rates. It is also worth remembering the exceptionally low yields on Irish Government bonds, indicating that the cost of servicing the national debt continues to be very low given the still significant size of the debt. Any shock to international bond yields could very quickly increase the cost of servicing the debt.

We also release our first forecast for growth for 2017. In the previous *Commentary* we estimated the rate of potential output growth for the Irish economy as well as an estimate of the output gap. Given the strong growth anticipated for 2016, our belief is that the output gap will all but close in the present year. This would suggest that growth in the economy will converge back to potential output growth rates in 2017. However, we feel that the pace of growth in the economy at present is such that output growth in 2017 will exceed the potential rate by approximately 0.5 per cent resulting in an expected increase in output of 4 per cent in 2017.

In the International Section of the *Commentary* we focus somewhat on inward migration in the Euro Area. Importantly we draw on earlier research by McQuinn and Whelan (2015)[17] in contextualising the issue. Demographic forecasts for the Euro Area compiled by EuroStat and presented in McQuinn and Whelan (2015) clearly demonstrate that Europe has an ageing population and crucially that this issue is impacting on the growth prospects for the different Member States right now. This is because the proportion of the population in the key working age category of 15 to 64 has *already* peaked across Europe and is set to decline quite dramatically over the next generation. Therefore, in the absence of significant net inward migration, future European labour supply is likely to contract with negative implications for economic growth and living standards. It is also clear from the figures presented in the international section that this trend is common across all Member States (including Ireland) of the Euro Area.

The issue of housing supply is considered from a regional perspective in Morgenroth (2016). This *Research Note* provides an analysis of housing supply and prices at county level. It focuses on the more recent period, but some analysis is also carried out over a longer period. Particular attention is paid in the Note to trends in housing pressures in the greater Dublin, Cork and Galway regions. The Note identifies that the dispersion of house prices across Irish counties is now as great as it was during the height of the boom and that the lack of a supply response is particularly evident in the Greater Dublin region. The Note concludes by offering a number of potential reasons for the lack of supply; despite the recent price rises in the Dublin market it may still not be profitable for developers, there may be a lack of suitable development land available or developers may be hoarding land for future development given the likely higher price and therefore profit that will be available in the future. Finally, developers might also be facing financing constraints. Some econometric results are presented which support the latter view.

[17] McQuinn, K. and K. Whelan (2015). 'Europe's Long-Term Growth Prospects: With and Without Structural Reforms', ESRI Working paper No. 501. Available at www.esri.ie/pubs/WP501.pdf.

In another assessment of housing supply, Barrett and Kelly (2016) in a Special Article to the present *Commentary* provide an initial exploration of housing tenure and movement among Ireland's older population using The Irish Longitudinal Study on Ageing (TILDA). TILDA contains data on a large-scale representative sample of Ireland's older people. As the data are compiled from a panel study, whereby the same people are interviewed at different points in time, Barrett and Kelly (2016) are able to look at the nature of housing among the older population and also their propensity to move. They find no evidence of trading down among the group.

Developments on the supply side of the Irish housing market have a number of important policy implications. For example, the Central Bank of Ireland has signalled that there will be a review of the macro-prudential policy measures in November of this year. These measures, which were aimed at curbing house price inflation, were introduced in February 2015 after a consultative process. The review exercise will be an important opportunity to modify the implementation of this crucially important policy tool. In Duffy and McQuinn (2015)[18] we argued that macro-prudential policy should be implemented on the basis of counter-cyclical policy rules. These rules would be triggered on the basis of a certain set of indicators focussing on house prices, supply levels and developments in mortgage credit. In recommending this, we feel we were advocating the adoption of international best practice where influential contributors such as Bank of England (2009),[19] Haldane (2010),[20] Galati and Moessner (2013)[21] and Goodhart (2011)[22] have all broadly recommended such a course of action. The mere signal of a rule change can itself have a significant impact on market activity, although naturally rules in the monetary policy space[23] have been demonstrated to provide greater clarity and transparency to different market participants if consistently applied. Furthermore, analysis in the previous *Commentary*[24] demonstrates why it is important that housing market activity should have a significant weight in any decision rules. If housing supply reaches the level of structural demand in 2018, macro-prudential policy could then play an important role in ensuring we do not experience the spiralling levels of supply evidenced in the Irish market in the early part of the 2000s. It is, after all, the combination of overvalued house prices and large volumes of housing supply which poses a systemic financial stability concern.

---

18 Duffy, D. and K. McQuinn (2014). 'Assessment of Proposed Macro-Prudential Policy Measures', Appendix, *Quarterly Economic Commentary,* Winter, 2014, ESRI.

19 Bank of England (2009). *The role of Macro-prudential policy, a discussion paper*, November.

20 Haldane A. (2010). 'Curbing the credit cycle', Speech at the Columbia University Center on Capitalism and Society Annual Conference, New York, November.

21 Galati, G. and M. Richhild (2013). 'Macro-prudential Policy – A Literature Review,' *Journal of Economic Surveys*, Wiley Blackwell, Vol. 27(5), pages 846-878, December.

22 Goodhart C. (2011). 'The Macroprudential authority: Powers, scope and accountability', OECD Journal: *Financial Market Trends* Vol. 2011 – Issue 2.

23 See Kydland F. and E. C. Prescott (1977). 'Rules Rather than Discretion: The Inconsistency of Optimal Plans'. *Journal of Political Economy*: 473–492

24 This analysis indicates that actual housing supply is only likely to meet the long-run structural demand level of 25,000 units in 2018.

Detailed Forecast Tables

FORECAST TABLE A1 Exports of Goods and Services

	2014	% change in 2015		2015	% change in 2016		2016	% change in 2017		2017
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	113.3	27.0	14.8	143.8	12.8	8.5	162.3	9.4	6.7	177.5
Tourism	3.7	18.2	6.0	4.3	4.2	3.2	4.5	4.2	3.2	4.7
Other Services	98.1	16.8	11.2	112.5	12.4	10.5	126.5	8.9	6.8	137.8
Exports Of Goods and Services	215.0	21.2	13.8	260.6	12.5	9.3	293.2	9.1	6.7	319.9
FISM Adjustment	0.0			0.0			0.0			0.0
Adjusted Exports	215.0	21.2	13.8	260.6	12.5	9.3	293.2	9.1	6.7	319.9

Forecast Table A2 Investment

	2014	% change in 2015		2015	% change in 2016		2016	% change in 2017		2017
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Housing	3.8	13.1	7.3	4.3	21.6	16.6	5.2	38.2	35.6	7.2
Other Building	8.0	15.6	11.0	9.2	15.4	10.4	10.6	13.9	8.9	12.1
Transfer Costs	0.7	-2.5	1.6	0.7	26.0	20.0	0.9	20.8	15.0	1.1
Building and Construction	12.5	13.8	9.4	14.2	17.8	12.7	16.8	21.9	17.4	20.4
Machinery and Equipment	24.0	37.6	37.4	33.0	29.3	26.3	42.7	26.9	23.7	54.2
Total Investment	36.5	29.4	28.2	47.2	25.9	22.5	59.5	25.4	22.1	74.6

FORECAST TABLE A3 Personal Income

	2014	% change in 2015		2015	% change in 2016		2016	% change in 2017		2017
	€ bn	%	€ bn	€ bn	%	€ bn	€ bn	%	€ bn	€ bn
Agriculture, etc	3.4	1.0	0.0	3.4	2.5	0.1	3.5	3.5	0.1	3.6
Non-Agricultural Wages	70.0	4.8	3.3	73.4	4.5	3.3	76.7	4.2	3.2	79.9
Other Non-Agricultural Income	19.5	30.3	5.9	25.3	15.0	3.8	29.1	12.8	3.7	32.9
Total Income Received	92.9	10.0	9.3	102.1	7.0	7.2	109.3	6.5	7.1	116.4
Current Transfers	23.7	0.0	0.0	23.7	-1.0	-0.2	23.5	2.4	0.6	24.0
Gross Personal Income	116.6	7.9	9.3	125.8	5.5	7.0	132.8	5.8	7.7	140.4
Direct Personal Taxes	27.3	6.0	1.6	28.9	3.9	1.1	30.1	3.7	1.1	31.2
Personal Disposable Income	89.3	8.5	7.6	96.9	6.0	5.8	102.7	6.4	6.5	109.3
Consumption	89.0	3.8	3.4	92.4	4.8	4.5	96.9	4.5	4.4	101.2
Personal Savings	0.3	1301.9	4.2	4.5	30.3	1.4	5.9	36.6	2.1	8.0
Savings Ratio	0.4			4.6			5.7			7.3
Average Personal Tax Rate	23.3			22.9			22.5			22.1

FORECAST TABLE A4 Imports of Goods and Services

	2014	% change in 2015		2015	% change in 2016		2016	% change in 2017		2017
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	70.9	11.7	8.4	79.2	9.9	7.2	87.0	9.2	7.0	95.0
Tourism	4.6	7.1	2.0	4.9	4.9	1.8	5.1	4.3	2.8	5.3
Other Services	104.8	26.1	22.0	131.7	19.5	16.0	157.4	15.4	13.0	181.6
Imports of Goods and Services	180.3	19.7	0.0	215.8	15.6	0.0	249.6	13.0	0.0	282.0
FISM Adjustment	0.0			-0.1			-0.1			-0.2
Adjusted Imports	180.3	19.6	16.3	215.7	15.6	12.5	249.4	13.0	10.7	281.9

FORECAST TABLE A5 Balance of Payments

	2014	2015	2016	2017
	€ bn	€ bn	€ bn	€ bn
Exports of Goods and Services	215.0	260.6	293.2	319.9
Imports of Goods and Services	180.3	215.8	249.6	282.0
Net Factor Payments	-26.2	-31.7	-33.0	-34.2
Net Transfers	-2.7	-2.9	-2.9	-2.9
Balance on Current Account	5.9	10.4	8.0	1.0
As a % of GNP	3.6	5.7	4.1	0.5

FORECAST TABLE A6 Employment and Unemployment, Annual Average

	2014	2015	2016	2017
	000's	000's	000's	000's
Agriculture	109.0	109.9	107.5	107.5
Industry	348.4	373.7	379.5	387.0
Of which: Construction	109.4	125.5	129.5	136.0
Services	1,453.3	1,474.1	1,514.8	1,543.8
Total at Work	1,913.8	1,963.5	2,001.8	2,038.3
Unemployed	242.8	203.6	189.8	170.7
Labour Force	2,156.8	2,167.2	2,191.7	2,208.9
Unemployment Rate, %	11.3	9.5	8.7	7.7

Appendix

Nowcasting Appendix

In the past 12 months we have provided quarterly updates for current estimates of GDP based on the Nowcasting[1] model. Table 1 shows the Nowcast and forecast of GDP for the first two quarters of 2016.

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

Period	Nature of Estimate	GDP Estimate %	95% Confidence Interval	
Q4 2015	Backcast	2.71		
Q1 2016	Nowcast	1.47	0	2.93
Q2 2016	Forecast	1.48	0.1	2.86

Source: Own estimates.

Throughout 2015, the Nowcasting methodology consistently suggested a growth rate of around 6.8 per cent per annum for GDP. Preliminary Quarterly National Accounts (QNA) for Quarter 4, 2015 released in mid-March indicate that GDP growth in the Irish economy could now be as high as 7.8 per cent for 2015. The Nowcast estimate provided in Table 1 suggests that growth will continue to be strong in the first half of 2016.

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*.

[1] 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, *Quarterly Economic Commentary*, Autumn 2014, The Economic and Social Research Institute.

Housing and Ireland's Older Population

Alan Barrett and Elish Kelly*

Abstract

It is sometimes argued that residential immobility on the part of older people results in the sub-optimal allocation of the housing stock. If older people remain in larger houses which were purchased with a view to housing families with growing children, then such houses are not available for the next generation of younger families. Similarly, if older people remain close to places of work after retirement, they may contribute to the limiting of supply in urban centres. In this paper, we explore this issue in two ways. First, we look at the types of houses being occupied by older people in different household structures – living alone, as couples or with children/grandchildren. This provides a sense of whether there are, in fact, many older people living in houses that are large relative to their needs. Second, we explore whether there is much evidence of older people 'trading down' to smaller houses or 'trading out' of urban areas to more rural areas. On the first issue, the picture is mixed. We find that many older people living alone already live in smaller houses. For example, 40.6 per cent of older people living alone live in houses with four rooms or less – the corresponding figure for people living with children/grandchildren is 15.8 per cent. However, when we look at couples, we find that 30.9 per cent live in houses with seven rooms or more. We find no evidence of trading down or trading out among the small proportion of older people who moved between 2010 and 2012. The findings suggest that there is scope for generating more mobility in housing but any policy initiatives should be sensitive to concerns related to social isolation and negative health consequences if older people leave familiar communities.

1. Introduction

Ireland is currently facing a shortage of residential accommodation as evidenced, for example, by rising rents and low levels of new completions relative to estimates of demand. In this context, it has been argued that a lack of housing mobility among Ireland's older population contributes to the overall difficulties (see for example Lyons, 2016). There are at least two dimensions to this argument. First, older people can find themselves living in houses which are large relative to their needs once children have grown up and left the family home – so-called 'empty nesters'. If they downsized, they would free up supply of larger

* This paper was prepared as part of a research programme funded jointly by the National Asset Management Agency (NAMA) and the Banking and Payments Federation Ireland (BPFI). We would like to thank The Irish Longitudinal Study on Ageing (TILDA) for providing us with access to the data used in this paper. We would also like to thank Dr Anne Nolan and Dr Irene Mosca for their assistance with data queries in the early stages of the research work.

family homes. Second, it could also be the case that retired people stay living in urban centres which were once close to places of work even though they no longer need such proximity. In this case, if they moved out of urban areas they would free up accommodation better suited to those still in work.

While these arguments are often made it is not clear, for example, whether there are lots of empty nesters or whether trading down is infrequent. If it is the case that significant numbers of older people actually live in smaller homes or that significant numbers already move at later stages of their lives, then there will be limited scope for increasing movement in the housing market through any actions aimed at incentivising more mobility for older people.

The lack of information on these questions is not just an Irish phenomenon. Banks et al. (2010) note that 'even the basic question of whether housing is downsized as people age is not well answered in the literature' (Banks et al., 2010, p.347). They point to contradictory findings on downsizing. Venti and Wise (2001) find that the elderly do not generally reduce housing equity as they age in the United States, but Sheiner and Weil (1992) did find widespread switches out of home ownership. In their own work, Banks et al. (2010) suggest that some of the confusion may arise from the different lengths of time over which possible transitions are viewed. For example, they show that over a two-year period, only 11 per cent of older home owners in the US move but the proportion increases to more than 30 per cent in a ten-year period. Banks et al. (2010) also show that rates of movement are lower in the UK compared to the US.

The purpose of this paper is to provide an initial exploration of housing tenure and movement among Ireland's older population using a rich data source – The Irish Longitudinal Study on Ageing (TILDA). We provide more details on the data below but for now we will note that TILDA contains data on a large-scale representative sample of Ireland's older people. TILDA is also a panel study whereby the same people are interviewed at different points in time. This allows us to look at the nature of housing among the older population and also their propensity to move.

The paper is structured as follows. In the remainder of this section, we provide more detail on the data. In Section 2, we look at housing characteristics among the older population with an emphasis on exploring whether there is evidence of older people living in larger dwellings. In Section 3, we look at moves among older people. Here we are particularly interested in whether there is evidence of people downsizing or moving from urban to rural areas. In this section of the

paper, we also assess econometrically the characteristics associated with whether or not older people move accommodation. We conclude in Section 4.

TILDA is a nationally representative study of the population of Ireland aged 50 and above who were living in the community when first surveyed.[1] The first wave of data was collected between October 2009 and July 2011. In total, 6,279 households participated in this survey,[2] with information on a total of 8,504 individuals collected. Of this, 8,175 individuals were aged 50 and over, while the remaining 326 people interviewed were the younger spouses/partners of the other survey participants.

In the report, we begin by examining the household structure among the over 50s in Ireland using the first wave of the TILDA data (2009-2011). For this examination, the household[3] is used as the unit of analysis. In particular, the results are based on the responses to the House Ownership module that were provided by the person who was designated as the 'financial respondent' when the interview was conducted.[4] Thus, the analysis is based on 5,959 observations,[5] with all results weighted to ensure that the findings are representative of the full population of people aged 50 and above in Ireland at the time the first wave of data were collected.

In the second part of the report, we examine the characteristics of those individuals who moved accommodation between TILDA Waves 1 and 2. The second wave of the TILDA data was collected between February 2012 and March 2013. In particular, we present the Wave 1 characteristics of those individuals who moved accommodation between 2009-2011 and 2012-2013.

1 Individuals living in long-term care institutions were not included in the sampling frame for the Wave 1 TILDA data capture. However, individuals living in such institutions are captured in subsequent waves of the TILDA data (as people who lived in houses, apartments, etc., when the Wave 1 data was captured have moved into long-term care institutions when subsequent waves of the data are captured).

2 The number of selected eligible households was 10,128; thus, the response rate was 62 per cent.

3 As opposed to the individual.

4 In capturing the TILDA data, when two persons were married together in a household, or were living together as if married, one individual was designated as the financial respondent in order to reduce respondent burden in capturing the data, and also to ensure more accurate responses for those TILDA modules that the financial respondent had to provide information for. In addition to the 'House Ownership' module, the financial respondent also answered the 'Other Assets' module.

5 76 households which contained two financial respondents were excluded from the analysis as the housing data provided by each respondent were not consistent.

2. Household Structure among the Over 50s

In Table 2.1, we begin our exploration of the housing characteristics of the over 50s and show the distribution of household composition for the full sample and by age. As noted above, our tables in this section are based on households, as opposed to individuals, and the age of the household is determined by the financial respondent in that household. The data presented relate to responses to the survey in its first wave, conducted between 2009 and 2011.

Across the full sample, households are divided in three, almost equal, categories; living alone, living with a spouse only and living with children[6] or grandchildren. However, the distribution is quite different across the age categories and reflects expected situations over the life-span. While just under 20 per cent of households aged 50 to 59 are made up of people living alone, the corresponding figure for the over 80s is 63 per cent. Similarly, the proportion of people living only with a spouse peaks in the age group 60 to 69, while the proportion living with children and grandchildren declines between the 50s and the late 70s.

TABLE 2.1 Household Structure of Individuals Aged 50 and Above in Ireland: 2009-2011

	All	50-59	60-69	70-79	80 Plus
Living alone	31.1	19.7	26.4	43.8	63.0
Living with spouse only	32.4	23.0	44.2	39.2	19.4
Living with child/grandchildren	33.7	53.2	27.0	15.1	16.5
Living with other relative	2.4	3.3	2.0	1.9	1.0
Living with unrelated people	0.5	0.8	0.4	-	0.2
Total:	100	100	100	100	100
Population:[1]	875,632	341,829	262,273	184,569	86,962

Source: TILDA Wave 1 Data.
Note: [1] The population figures (based on the 2010 QNHS) were derived by applying the CAPI (computer aided personal interview) weight that is in the TILDA data to the sample used in the analysis.

In Table 2.2, we look more closely at the distribution of household composition and provide breakdowns by age and gender. We identified in Table 2.1 that almost two-thirds of those aged over 80 were living alone (63 per cent) – from Table 2.2 we can see that over 70 per cent of these households are female. Apart from the age group 50 to 59, Table 2.2 shows how the living alone households are more likely to be female.

6 Including step and adopted children.

TABLE 2.2 Gender Profile of Individuals Aged 50 and Above in Different Household Structures: 2009-2011

	Living alone	Living with spouse only	Living with children / grandchildren	Living with others[1]
Gender Profile of People:				
All:				
Male	42.7	54.7	46.9	53.8
Female	57.4	45.3	53.1	46.2
Aged 50-59:				
Male	59.8	46.6	48.2	55.6
Female	40.2	53.4	51.8	44.4
Aged 60-69:				
Male	44.5	56.5	51.6	54.5
Female	55.6	43.5	48.4	45.5
Aged 70-79:				
Male	35.9	58.1	36.5	56.4
Female	64.2	41.9	63.5	43.6
Aged 80 and Above:				
Male	29.3	66.0	26.6	13.7
Female	70.7	34.0	73.4	86.3

Source: TILDA Wave 1 Data.
Note: [1] Relative or non-relative.

In Table 2.3 we look at the family structures of the differing household compositions. One point that emerges from Table 2.3 is that almost 40 per cent of people who are living alone have no living children (38.2 per cent). This is noteworthy because it suggests that many of those living alone are not 'empty nesters' – it seems that they never had children and this may be reflected in their house sizes. Among couples, 12.3 per cent have no children meaning that almost 90 per cent do have children and so are 'empty nesters', in the sense of having had children who have now left the family home.

TABLE 2.3 Family Information for Individuals aged 50 and Above by Household Structure: 2009-2011

	Living alone	Living with spouse only	Living with children / grandchildren	Living with others[1]
Number of (Living) Children:				
0	38.2	12.3	-	43.0
1	7.7	6.7	7.0	6.4
2	12.8	22.2	23.1	14.6
3	14.1	24.5	24.8	12.3
4	10.9	17.3	19.7	12.8
5	6.6	8.2	11.8	4.3
6 and Above	9.8	8.8	13.7	6.7
Proximity of Children of People:[2]				
Co-resident children	-	-	99.4	25.2
At least one child in the county	48.8	68.2	0.6	21.7
Child lives in another county	8.1	13.6	0.1	5.5
Child lives in another country	4.9	5.9	-	4.7
No children	38.2	12.3	-	43.0

Source: TILDA Wave 1 Data.
Note: [1] Relative or non-relative.
[2] This question is asked of all children aged 16 and above, so the categories are not mutually exclusive.

Table 2.4 tries to provide a sense of housing size by household composition, with a view to exploring one of our key questions; if there is evidence of many older people living in houses which are large relative to their needs? We will focus first on the living alone group. From the top panel of the table, we can see that the living alone households are more heavily concentrated in dwellings that are likely to be smaller – for example 6.7 per cent of those living alone are in apartments/ flats/bedsits compared to just 0.5 per cent of people living with children and/or grandchildren. Similarly, 21.8 per cent of the living alone households are in terraced houses, compared to 17.5 per cent of people living with children and/or grandchildren. Having said that, we can also see that almost half of those living alone reside in detached houses so the picture is somewhat mixed. If we look at couples, we see that 60.2 per cent live in detached houses and so they are more likely to live in such houses compared to people living with children and/or grandchildren.[7]

[7] In Appendix 1, we provide the information in the top panel of Table 2.4 by area; Dublin, other urban and rural.

If we consider this issue from the perspective of number of rooms,[8] we again can see that living alone households tend to live in smaller dwellings. Of the living alone group, 40.6 per cent live in households with four rooms or less – for people living with children and/or grandchildren, the corresponding figure is 15.8 per cent. Looking at larger houses, we can see that 36.4 per cent of people living with children and/or grandchildren live in houses with seven or more rooms. The corresponding figures for the living alone and couples are 13.9 per cent and 30.9 per cent respectively. Hence, while these data show that, compared to larger households, there are smaller proportions of those living alone and couples living in larger houses; they also show that a reasonable proportion of couples in particular reside in large houses.

TABLE 2.4 Housing Information for Individuals aged 50 and Above by Household Structure: 2009-2011

	Living alone	Living with spouse only	Living with children / grandchildren	Living with other relatives	Living with non-relatives
Type of Residence:					
Detached house	47.9	60.2	56.5	65.5	45.4
Semi-detached house	23.2	23.6	25.3	16.9	21.8
Terraced house	21.8	14.8	17.5	16.6	23.6
Apartment/flat/bedsit	6.7	1.2	0.5	1.0	9.3
Other	0.5	0.2	0.1	-	-
Number of Rooms:					
1	1.6	-	-	-	-
2	6.7	0.7	0.3	0.8	-
3	13.9	7.1	4.5	4.6	6.8
4	18.4	11.8	11.0	19.0	6.8
5	26.5	25.0	24.1	20.9	24.7
6	19.0	24.0	23.4	23.6	27.5
7	8.7	16.4	15.8	16.2	13.1
8 and above	5.2	14.5	20.6	14.9	21.0
Non-response	0.1	0.5	0.3	-	-

Source: TILDA Wave 1 Data.

8 A room is defined as a space of a housing unit of at least 4 square metres (e.g., normal bedrooms, dining rooms, living rooms and habitable cellars and attics) with a height over 2 metres and accessible from inside the unit. Kitchens are not counted unless the cooking facilities are in a room used for other purposes. Thus, a kitchen-cum-dining room is one room in the count of rooms. The following do not count as rooms: bathrooms, toilets, corridors, utility rooms and lobbies. Verandas, lounges and conservatories only count as rooms if they are used all year round. A room used solely for business use is excluded, but is included if it is shared between private and business use. If the dwelling is shared by more than one household all rooms are counted for the owner/tenant except those exclusively used by the other households.

Summarising so far, our task has been to see if there is evidence of older people occupying 'excess housing' in the sense of there being a lot of older households living in houses that exceed their current needs. Focusing on the living alone group first, the data appear to show that many in this group are already living in smaller dwellings – 40.6 per cent live in houses with four rooms or fewer. However, almost 14 per cent live in houses with seven or more rooms so the evidence is mixed. For couples, over 30 per cent live in houses with seven or more rooms. While this is lower than the corresponding figure for people living with children and/or grandchildren, it is still sizeable.

In the remaining tables in this section, we go on to consider some additional issues which are not central to the current research questions, but are nonetheless of interest. In Table 2.5 we look at ownership type. One striking point from this table is the higher proportion of renters in the living alone category. While 15.9 per cent of living alone households are renters, only 4.7 per cent of couples are renting. As with the earlier tables, this points to distinctive characteristics among some of the living alone group.

TABLE 2.5 Ownership Type for Individuals aged 50 and above by Household Structure: 2009-2011

	Living alone	Living with spouse only	Living with children / grandchildren	Living with other relatives	Living with non-relatives
Ownership Type:					
Owned by the respondent or his/her spouse	78.3	94.3	87.5	67.6	58.2
Owned by another household member[1]	3.1	0.6	2.8	26.5	4.4
Rented	15.9	4.7	9.3	6.0	37.5
Occupied rent free[2]	2.5	0.5	0.3	-	-
Don't know	0.0	0.1	-	-	-
Non-response	0.2	-	0.1	-	-

Source: TILDA Wave 1 Data.
Note: [1] Not the respondent's spouse/partner.
[2] Not owned by a household member.

In Table 2.6, we draw on a question that was contained in the TILDA survey which sought to establish if people were in receipt of rental income from their primary residence. As can be seen from Table 2.6, this is rarely observed. The one exception is households in which people are living with non-relatives, where almost 5 per cent are in receipt of rental income.

TABLE 2.6 Rental Income for Individuals aged 50 and above by Household Structure: 2009-2011

Received Rent for Property in Last Year:	Living alone	Living with spouse only	Living with children / grandchildren	Living with other relatives	Living with non-relatives
Yes	0.5	0.5	0.2	-	4.6
No	77.8	93.7	87.3	67.6	53.5
Not Applicable	21.7	5.8	12.5	32.4	41.8

Source: TILDA Wave 1 Data.

3. Movers among the Over 50s

In this section, the particular richness of the TILDA data emerges because we are able to draw on the fact that participants were interviewed in 2009/2011 and then re-interviewed in 2012. This means that we are able to identify who moved between the two waves of the survey. We can then go on to look at the extent to which people moved and the characteristics of movers. We are particularly interested in seeing if there is evidence of trading down (to smaller dwellings) or trading out (from urban to rural). As indicated in Section 1, the analysis in this part of the paper is based on individuals (as opposed to households).

Before presenting the tables, we should mention that we can identify which people moved between private dwellings and who moved into nursing homes and other institutions.[9] As only a tiny proportion moved into nursing homes (0.4 per cent), the sample size is small and we are unable to say much about this group which would be statistically reliable.

Turning now to Table 3.1, we can see that in total 3.1 per cent of TILDA respondents moved between Waves 1 and 2; 2.7 per cent between private dwellings and, as just mentioned, 0.4 per cent into institutional settings.[10] As the period in question was one of great uncertainty in the Irish housing market, moving in general was at a lower rate than would generally be the case. This means that it is difficult to say if the rate of movement observed in the TILDA data is low due to the period effect or due to rates of movement always being low for older people in Ireland. Nevertheless, we can at least look within the data and look at the rates of movement across different age groups within TILDA. This is done in Table 3.2. Looking across 'all movers' (private and institutional) and

9 Individuals who moved abroad, who died or who dropped out of the survey are not captured in the TILDA data.

10 Banks et al. (2010) report 11 per cent of older home owners in the US moving in a two-year period and almost 40 per cent of renters. Hence, the figure here of 3.1 per cent is tiny.

private movers only, we see that rates of movement are highest for the youngest (50-59) and the oldest (80+).

TABLE 3.1 Percentage of Individuals Who Moved Between 2009-2011 and 2012-2013

Moved	
No	96.9
Yes- Private Household (HH)	2.7
Yes - Nursing Home/Other Institution	0.4
Population:[1]	1,015,705

Source: TILDA Waves 1 and 2 Data.
Note: [1] The population figure was derived by applying the CAPI weight that is in the TILDA data to the sample used in the analysis (see Note under Table 2.1). Those missing age information were excluded from the analysis.

TABLE 3.2 Movers by Age Category

	All Movers	Private Movers
Age:		
50-59	3.4	3.3
60-69	2.1	1.9
70-79	3.1	2.0
80 and Above	5.7	3.9

Source: TILDA Waves 1 and 2 Data.

In Tables 3.3, 3.4 and 3.5, we provide information on the baseline characteristics of movers and non-movers with a view to getting a sense of what distinguishes movers. Some points emerge. First, and reflecting Table 3.2, movers are more likely to be older – while 7.5 per cent of non-movers are over 80, this rises to 14.1 per cent for movers. As can be seen from the difference in the proportions of all movers and private movers among the 80+s, some of the people in question are moving into institutional settings.

Separated/divorced people and widows are more likely to move, as are people who were born outside of Ireland. In Table 3.4, we can see that those living alone are more likely to move compared with others. In Table 3.5, we can see that people with no children are more likely to move whereas people with co-resident children are less likely to move.

TABLE 3.3 Demographic Profile of Non-Movers and Movers - I

	Non-Movers	All Movers	Private HH Movers[1]
Gender:			
Male	48.0	51.5	52.7
Female	52.0	48.5	47.3
Age:			
50-59	41.5	45.8	52.1
60-69	31.9	20.9	22.4
70-79	19.2	19.3	14.3
80 and Above	7.5	14.1	11.2
Marital Status:			
Married	69.6	48.0	50.9
Never Married	9.5	10.2	8.5
Separated/Divorced	6.4	18.7	21.4
Widowed	14.5	23.1	19.3
Irish Born:			
Yes	91.8	83.0	81.7
No	8.2	17.0	18.3
Health:			
Excellent	15.0	15.9	18.1
Very Good	28.9	22.2	20.5
Good	32.6	32.0	33.2
Fair	18.5	23.1	21.7
Poor	5.0	6.8	6.5
Population:	984,293	31,412	26,935

Source: TILDA Waves 1 and 2 Data.
Note: [1] Private HH Movers are a sub-set of the 'All Movers' category.

TABLE 3.4 Demographic Profile of Non-Movers and Movers - II

	Non-Movers	All Movers	Private HH Movers
Education:			
Primary or Less	35.7	41.4	36.0
Junior Certificate	25.7	23.7	25.7
Leaving Certificate	18.8	17.5	20.5
Certificate/Diploma	10.1	6.4	6.4
Degree or Higher	9.6	11.0	11.5
Employment Status:			
Employed	37.2	26.8	29.3
Retired	34.3	38.7	34.8
Other	28.5	34.6	35.9
Household Composition:			
Lives Alone	21.5	40.5	37.2
Lives with Spouse	38.7	27.0	28.1
Lives with Child	36.0	26.7	28.8
Other	3.8	5.8	5.9
Population:	984,293	31,412	26,935

Source: TILDA Waves 1 and 2 Data.

TABLE 3.5 Family Information of Non-Movers and Movers

	Non-Movers	All Movers	Private HH Movers
Living Children:			
0	14.7	20.4	18.8
1	6.7	9.1	8.4
2	20.4	14.1	14.2
3	21.7	19.8	21.2
4	17.2	17.1	16.5
5	9.0	7.6	8.8
6 and Above	10.3	11.9	12.2
Proximity of Children			
No Children	14.7	20.4	18.8
Co-Resident	37.0	26.7	28.8
One Child lives in County	37.5	36.6	36.3
Child lives in other County	7.6	8.5	8.5
Child lives in other Country	3.2	7.8	7.6
Population:	984,293	31,412	26,935

Source: TILDA Waves 1 and 2 Data.

When we econometrically examined the characteristics associated with mobility among older people (Table 3.6), the results confirmed many of the previous descriptives. Specifically, we found that those aged 50-59 and aged 80 and above were more likely to move accommodation between 2009/2011 and 2012 compared to those aged 60-69.

TABLE 3.6 Determinants of Housing Mobility Among Older People (Marginal Effects)

	All Movers	Private Movers
Gender (Ref: Females)		
Male	0.006	0.006
Age (Ref: Aged 60-69)	(0.004)	(0.004)
50-59	0.018***	0.016***
	(0.006)	(0.006)
70-79	0.006	-0.002
	(0.006)	(0.005)
80 and Above	0.023**	0.012
	(0.012)	(0.010)
Marital Status (Ref: Single)		
Married	0.005	0.008
	(0.007)	(0.007)
Separated/Divorced	0.067***	0.076***
	(0.024)	(0.027)
Widowed	0.032**	0.034**
	(0.017)	(0.018)
Educational Attainment (Ref: Primary or Less)		
Junior Certificate	-0.004	0.000
	(0.005)	(0.004)
Leaving Certificate	-0.005	0.000
	(0.005)	(0.005)
Cert/Diploma	-0.013**	-0.010**
	(0.004)	(0.004)
Degree	0.002	0.005
	(0.007)	(0.007)
Post-Graduate Degree	-0.005	-0.005
	(0.007)	(0.007)

Contd.

TABLE 3.6 *Contd.*

	All Movers	Private Movers
Economic Status (Ref: Employed)		
Retired	0.012**	0.012**
	(0.006)	(0.006)
Unemployed	0.019**	0.020**
	(0.012)	(0.011)
Sick/Disabled	0.022**	0.026**
	(0.014)	(0.014)
Home Duties	0.005	0.003
	(0.008)	(0.007)
Education/Training	0.123***	0.117***
	(0.059)	(0.056)
Other	0.049**	0.041**
Health Status (Ref: Excellent)		
Very Good	-0.011*	-0.012**
	(0.005)	(0.004)
Good	-0.005	-0.006
	(0.005)	(0.005)
Fair	-0.004	-0.007
	(0.006)	(0.005)
Poor	-0.005	-0.007
	(0.008)	(0.006)
Birth Location (Ref: Non-Irish)		
Irish	-0.024***	-0.022***
	(0.009)	(0.008)
Proximity of Children (Ref: No Children)		
Co-Resident	-0.018***	-0.016***
	(0.006)	(0.006)
One Child Lives in County	-0.013**	-0.010*
	(0.006)	(0.006)
Child Lives in Other County	-0.009	-0.008
	(0.006)	(0.005)
Child Lives in Other Country	0.002	-0.001
	(0.010)	(0.008)
Observations	6,981	6,953
Pseudo R2	0.070	0.076

Source: Authors' analysis.
Note: *Robust Standard Errors in Parentheses; *** p<0.01, ** p<0.05, * p<0.1.*

When we focused specifically on private moves, only those aged 50-59 were more likely to make private accommodation moves. The results also indicated that older people who were either separated/divorced or widowed were more likely to move relative to single people.

Regarding the impact of a person's economic status on mobility, those who were retired, unemployed, sick/disabled or pursuing an education/training course were more likely to move accommodation between 2009/2011 and 2012 compared to those in employment. A person's self-perceived health status was found to have no impact on their decision to move accommodation.[11] People born in Ireland were found to be less likely to move accommodation between 2009/2011 and 2012, as were older people who were co-residing with their children or had at least one child living in the same county.

Our next task is to explore the issues of trading down and trading out and we begin this in Table 3.7a. At this point we are excluding people who moved into institutional settings and we are only looking at moves between private dwellings. This means that our sample is now the 2.7 per cent in Table 3.1; with this small sample size, we will need to see large differences across the groups in order for any differences to be statistically significant. As will be seen, we typically do not see such large differences.

To the extent that trading down is occurring, we should see the distribution of house types being skewed towards smaller dwellings in the post-move column. Looking at Table 3.7a, we do not generally see this. There are a larger proportion of the movers in apartments/flats and bedsits post-move, but the proportion in terraced houses falls and the proportion in semi-detached houses rises. Broadly, these patterns are present whether people are aged under 70 (Table 3.7b) or over 70 (Table 3.7c).[12]

11 We also examined whether the deterioration in an older person's health status between 2009/2011 and 2012 had an impact on their likelihood of moving. The results from this analysis, which are available from the authors on request, indicated that this health measure also had no impact on an older person's decision to move accommodation.

12 For sample size reasons, it is not feasible to examine more disaggregated age groups.

TABLE 3.7A House Type of All Private Movers Pre- and Post-Moving

	Pre-Move	Post-Move
House Type:		
Detached	32.6	31.5
Semi-Detached	17.0	20.8
Terraced House	20.8	16.0
Apartment/Flat/Bedsit	8.4	13.6
Unknown/Other	21.2	18.2
Population:	26,935	26,935

Source: TILDA Waves 1 and 2 Data.

TABLE 3.7B House Type of Private Movers Aged Less than 70 Pre- and Post-Moving

	Pre-Move	Post-Move
House Type:		
Detached	29.3	27.1
Semi-Detached	18.1	22.8
Terraced House	17.6	13.3
Apartment/Flat/Bedsit	9.7	14.4
Unknown/Other	25.2	22.5
Population:	20,080	20,080

Source: TILDA Waves 1 and 2 Data.
Note: Individuals defined as aged 70 and above on the basis of their age in Wave 1 of the TILDA data

TABLE 3.7C House Type of Private Movers Aged 70 and Above Pre- and Post-Moving

	Pre-Move	Post-Move
House Type:		
Detached	42.3	44.3
Semi-Detached	13.5	15.0
Terraced House	30.1	23.9
Apartment/Flat/Bedsit	4.6	11.2
Unknown/Other	9.5	5.6
	6,855	6,855

Source: TILDA Waves 1 and 2 Data.
Note: Individuals defined as aged 70 and above on the basis of their age in Wave 1 of the TILDA data

The issue of size of house pre- and post-move is also considered in Table 3.8 where we look at the number of rooms in the dwellings. Focusing on dwellings with four rooms or less, 26.5 per cent of people live in such houses before their move and this rises to 34.2 per cent post-move. While this might provide some

evidence of trading down, the difference pre- and post-move is eliminated if we look at dwellings with five rooms or less, so any evidence of trading down is weak.

TABLE 3.8 Number of Rooms in House of Private Movers Pre- and Post-Moving

Number of Rooms:	Pre-Move	Post-Move
1	1.8	-
2	3.4	7.9
3	9.2	13.0
4	12.1	13.3
5	24.2	16.4
6	13.4	16.2
7	8.5	9.6
8	4.2	2.3
9	1.9	1.6
10	0.6	0.7
11	0.7	
12	-	0.5
Unknown	19.9	18.8
	26,935	26,935

Source: TILDA Waves 1 and 2 Data.

In Table 3.9, we consider the trading out question by looking at the distribution of dwelling by urban and rural locations pre- and post-move. As can be seen, there is very little difference in the location distributions and certainly no evidence of people moving out of Dublin or other urban areas into rural areas.

TABLE 3.9 Geographic Location of Private Movers Pre- and Post-Moving

	Pre-Move	Post-Move
Location:		
Dublin city or county	23.9	26.5
Another town or city	36.0	37.6
A rural area	39.5	35.9
Unknown	0.6	-
	26,935	26,935

Source: TILDA Waves 1 and 2 Data.

Before leaving this exploration of movers, we can look at a number of further questions. In Table 3.10 we look at household composition pre- and post-move to see if there is any evidence of people living alone moving in with children or other

relatives. As can be seen, there is very little change in the distribution of household composition and so little evidence of the living alone moving in with others. This is also seen in Table 3.11 where we focus on movers who were living alone in 2009/2011. Almost 90 per cent were still living alone post-move.

TABLE 3.10 Household Composition of Private Movers Pre- and Post-Moving

	Pre-Move	Post-Move
Household Composition:		
Living alone	37.2	35.7
Living with spouse only	28.1	27.6
Child/step/adopted/grandchildren	28.8	30.8
Living with other relative	3.2	3.2
Living with unrelated people	2.7	2.7
	26,935	26,935

Source: TILDA Waves 1 and 2 Data.

TABLE 3.11 Household Composition of People Living Alone in 2010 After Moving (Private Movers Only)

	Post-Move
Household Composition:	
Living alone	88.2
Living with spouse only	9.4
Child/step/adopted/grandchildren	2.4
	10,014

Source: TILDA Waves 1 and 2 Data.

Another issue that we will consider relates to financial transfers. One theme that emerged from early analyses of the TILDA data was the significant numbers and amounts of financial transfers which older people made to their children – both large one-off gifts and ongoing smaller gifts. It is possible that the sale of a house leads to the release of equity whereby movers are better positioned to make gifts and hence more likely to do so. This could include situations where a move would happen regardless of any gift, but where a gift results from the move or a situation in which the move is motivated in the first place by the desire to make a transfer. In Table 3.12, it can be seen that no evidence emerges for gift-giving related to moves.

TABLE 3.12 Financial Transfer Information for Non-Movers and Movers

	Non-Movers	All Movers	Private HH Movers
1. Gave Property, Large sum of Money or Large Gift to Child			
Yes	24.1	15.6	16.8
No	75.9	84.4	83.2
Total:	100	100	100
Population:	594,855	19,249	16,907
2. Gave other Financial Transfer to Child			
Yes	49.2	47.0	51.4
No	50.8	53.0	48.6
Total:	100	100	100
Population:	594,718	19,483	17,140

Source: TILDA Waves 1 and 2 Data.
Notes: This question is asked only of family, and family/financial respondents.
The two population totals differ due to missing information for some individuals for each of the financial transfer type questions.

4. Conclusion

The goals of this paper were twofold. First, we wanted to assess whether there was evidence of significant under-utilisation of housing among Ireland's older people in the sense of older people living alone in large houses. Second, we wanted to see if there was evidence of trading down or trading out among Ireland's older people.

One-third of the over 50s live alone and almost two-thirds of the over 80s. Many of these people live in smaller dwellings and so the evidence on under-utilisation is weak if we focus on those living alone. Specifically, 40.6 per cent of older people living alone live in houses with four rooms or less: the corresponding figure for people living with children/grandchildren is 15.8 per cent. However, when we broaden the analysis to include couples, the evidence on under-utilisation strengthens somewhat. For example, just over 30 per cent of older couples live in houses with seven rooms or more. This is smaller than the corresponding proportion of families in the sample who live in houses with seven or more rooms (36.4 per cent), but still represents a sizeable number.

One implication of the results is that arguments around the potential to generate greater movement in the housing market through incentivising older people to move might have less impact than is generally understood, based on the findings

with respect to those living alone. However, the results for couples suggest that there is scope for impact. The low rate of trading down and trading out also suggest that there might be scope for freeing up supply of larger houses and in urban areas. Given the period over which we observed moves (2009/2011 to 2012), it is likely that the rate of movement which we observed was lower than that which would apply in more normal economic circumstances. For this reason, there will be value in returning to this type of analysis as future waves of TILDA come on stream.

As a final point, it should be noted that any economic benefit which might accrue from the mobility of older people should be set against possible costs in terms of social connectedness and health. A growing literature in health sciences is creating an increased awareness of the importance of social connectedness in later life and the dangers of social isolation (for example, Cornwell and Waite, 2009). If mobility of older people meant movement out of familiar communities, this could be damaging and any policies in this area should be cognisant of this issue.

Appendix 1

TABLE A.1: Household Type of Individuals Aged 50 and Above Living in Dublin by Household Structure

	Overall	Living Alone	Living with Spouse	Living with children/ grandchildren	Living with others[1]
Type of Residence:					
Detached House	13.7	10.1	16.8	13.4	20.1
Semi-Detached House	46.0	39.5	47.9	50.5	34.5
Terraced House	33.8	34.5	31.7	34.4	41.5
Apartment/Flat/Bedsit	6.5	15.9	3.4	1.8	3.9
Other	0.0	-	0.1	-	-

Source: TILDA Wave 1 Data.
Note: [1] Relative or non-relative.

TABLE A.2: Household Type of Individuals Aged 50 and Above Living in Urban Location by Household Structure

	Overall	Living Alone	Living with Spouse	Living with children/ grandchildren	Living with others[1]
Type of Residence:					
Detached House	35.1	25.8	42.7	37.4	38.7
Semi-Detached House	33.4	30.1	34.7	36.1	28.1
Terraced House	27.9	35.6	21.0	26.1	27.5
Apartment/Flat/Bedsit	3.4	7.8	1.5	0.4	5.8
Other	0.3	0.8	-	-	-

Source: TILDA Wave 1 Data.
Note: [1] Relative or non-relative.

TABLE A.3: Household Type of Individuals Aged 50 and Above Living in Rural Location by Household Structure

	Overall	Living Alone	Living with Spouse	Living with children/ grandchildren	Living with others[1]
Type of Residence:					
Detached House	87.1	80.9	89.6	89.8	90.3
Semi-Detached House	7.6	10.8	6.5	6.1	6.2
Terraced House	4.5	6.2	3.6	3.9	3.6
Apartment/Flat/Bedsit	0.5	1.6	0.4	0.2	-
Other	0.4	0.6	-	-	-

Source: TILDA Wave 1 Data.
Note: [1] Relative or non-relative.

References

Cornwell, E.Y. and L. Waite (2009). 'Social Disconnectedness, Perceived Isolation, and Health among Older Adults', *Journal of Health and Social Behavior* Vol. 50 no.1.

Banks, J., R. Blundell, Z. Oldfield and J.P. Smith (2010). 'Housing Price Volatility and Downsizing in Later Life', in Wise, D. (ed.) *Research Findings in the Economics of Ageing*, Chicago: University of Chicago Press.

Lyons, R. (2016). 'When properties trade too rarely', *Sunday Independent*, 7 February 2016.

Sheiner, L. and D. Weil. (1992). 'The Housing Wealth of the Aged', NBER Working Paper No. 4115, Cambridge, MA: National Bureau of Economic Research.

Venti, S.F. and D.A Wise, (2001), 'Aging and Housing Equity: Another Look' in Wise, D. (Ed.). *Perspectives on the Economics of Aging*, Chicago: University of Chicago Press.

Research Note

Housing Supply and House Price Trends: a County Level Analysis

*Edgar Morgenroth[1]

1. Introduction

Developments in the housing market and in particular the availability and affordability of both owner-occupied and rented housing have been a topic of significant discussion over the recent past.[2] Purchase prices for housing nationally have increased by 35 per cent since early 2013,[3] while rental prices have increased by almost 20 per cent since early 2012,[4] impacting on the affordability of housing. While higher prices affect all households, they have the biggest proportionate impact on those with lower incomes. Although not a complete measure of housing need, the waiting lists for social housing maintained by local authorities indicate a significant increase in the number of households unable to secure accommodation in the market.

These trends are a function of the demographic demand for housing, the supply of housing, and incomes. Previous research has shown that the number of households nationally is likely to increase by 20,000 each year over the next 15 years, and that this, when combined with the need to replace obsolete dwellings, would require an additional 25,000 dwellings per year (Duffy et al., 2014). Accounting for an overhang of vacant stock reduces these numbers slightly. Moreover, in high demand areas such as Dublin, there was little available vacant stock (see Morgenroth, 2014a,b).

The number of completed dwellings has been averaging just over 2,500 units per quarter since 2013,[5] which implies that increases to the housing stock are less than half of what is required. Thus, with underlying demographic demand significantly exceeding supply it is not surprising to find both purchase and rental

1 This paper was prepared as part of a research programme funded jointly by the National Asset Management Agency (NAMA) and the Banking and Payments Federation Ireland (BPFI).

2 E.g. How do we fix the housing crisis? The Irish Times, 9/10/2015 or 'There's no bubble, but housing crisis will take time to fix'. Irish Independent 31/1/2016.

3 Based on data from the CSO Residential Property Price Index.

4 Based on data from the PRTB Rental Index.

5 Based on data from the Department of the Environment, Community and Local Government, Housing Statistics.

* edgar.morgenroth@esri.ie

prices increasing. A long-term solution to this problem requires significantly increased supply of additional housing.

The need for additional dwellings is not evenly spread around the country. Morgenroth (2014a,b) estimated that 60 per cent of the required additional housing would be needed in Dublin, with the bulk of the remaining need being concentrated in the Dublin commuter belt including Kildare, Louth, Meath, Wicklow, and the other larger cities (particularly Cork and Galway). Thus, current levels of housing completions nationally would barely meet the need for additional housing in Dublin.

These regional differences suggest that an analysis of housing supply at the county level is more meaningful than an analysis at the national level, as this would not identify housing pressures in specific areas. This note provides an analysis of housing supply and prices at the county level. It focuses on the more recent period, but some analysis is also carried out over a longer period. Also, given the identified housing pressures in Greater Dublin, Cork and Galway, trends in these areas are considered specifically.

As housing completions arise at the end of a process encompassing planning permissions and construction commencements, data on these key stages of the construction cycle are also considered here. Furthermore, given the slow response of housing supply to the substantial increases in prices, this relationship is analysed. Data for the supply cycle variables, planning permissions, commencements and completions are taken from the CSO database on planning permissions and the Department of the Environment, Community and Local Government, Housing Statistics. These provide data for individual local authorities. Unfortunately, neither the CSO nor the Department of the Environment, Community and Local Government publish house price data at the local authority level. A consistent series of county level house prices was constructed using both the ESRI/PTSB House Price Index and the quarterly reports on asking prices from the online sales and letting portal Daft.ie. While the ESRI/PTSB data relate to the average actual prices, the Daft.ie data are for asking prices for three-bedroom semi-detached houses.[6]

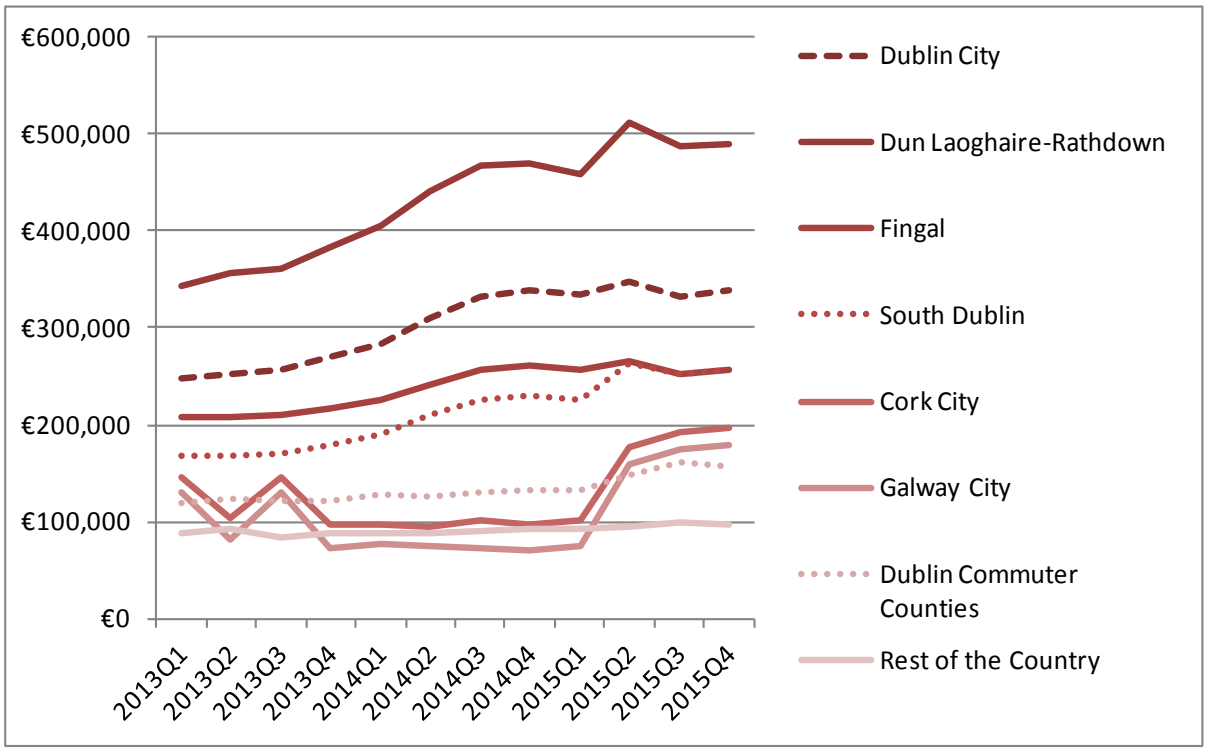
[6] The correlation between the Daft.ie asking prices for Dublin and the residential property prices for Dublin published by the CSO is very high (between 0.89 and 0.99 depending on the part of the city), and the asking price of three-bedroom semi-detached houses is highly correlated with both that of one-bedroom apartments (correlation coefficient of 0.95 for North Dublin) and larger five-bedroom detached properties (correlation coefficient 0.91 in North Dublin).

The note is organised as follows. Recent house price trends are considered in Section 2, supply trends are outlined in Section 3 and Section 4 considers some evidence on the causal relationship between prices and supply. Section 5 offers some conclusions

2. House Prices

House prices nationally have been increasing since early 2013. Figure 1 shows the evolution of house prices for the Dublin counties (i.e. Dublin City, Dun Laoghaire-Rathdown, Fingal and South Dublin), Cork City, Galway City, the Dublin Commuter Counties Kildare, Louth, Meath and Wicklow and the remainder of the country. The Figure clearly shows both the higher level of prices in the Dublin counties compared to the Rest of the Country. It also shows the more rapid growth over the period in the city areas and to a slightly lesser degree the Dublin Commuter Counties. Between the first quarter of 2013 and the last quarter of 2015 prices increased by more than 50 per cent in South Dublin, more than 40 per cent in Dun Laoghaire-Rathdown and more than 30 per cent in Dublin City, Cork City, Galway City and Dublin Commuter Counties. Fingal recorded lower price growth at just over 20 per cent while the mean price growth across other counties (Rest of the Country) was less than 10 per cent. Interestingly, the Greater Dublin region experienced steadily growing prices from early in 2013 but this trend stalled in the Dublin counties during the course of 2015. In Cork City and Galway City most of the increase in prices occurred during 2015, but this also slowed in the second half of 2015. There is less evidence of slowing price increases in Dublin Commuter Counties where, however, prices are lower than in the city areas. One explanation for this levelling off in prices might be the introduction of maximum loan-to-value and loan-to-income ratios by the Central Bank. This may put upward pressure on prices in surrounding counties where prices are such that loan-to-income ratios may not be a binding constraint for purchasers. This would give rise to a ripple effect that has been identified in previous research on housing markets in other countries (e.g. Meen, 1999; Ma and Chunlu, 2013; Tsai, 2014).

FIGURE 1 House Prices, Quarter 1, 2013 to Quarter 4, 2015

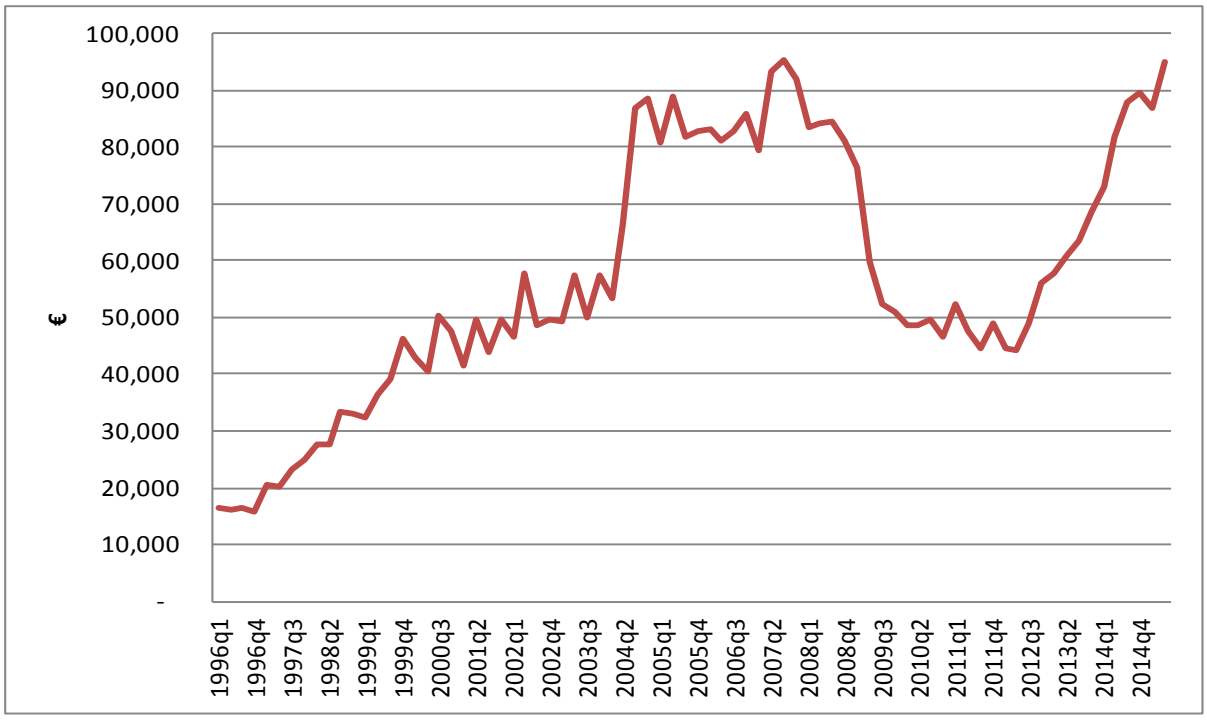


Source: The data are from Daft.ie. and refer to three-bedroom semi-detached houses. The figures for Dublin Commuter Counties and Rest of the Country are constructed as a simple mean of the respective counties.

Figure 2 shows that price levels across the country are diverging. The degree of house price dispersion across all counties can be measured by the standard deviation. Figure 2 shows this measure calculated across 32 local authorities over the period 1996 to 2015. This shows that the difference between the counties with the highest and lowest prices increased over the boom period, decreased sharply during the recession, and has increased significantly since 2011. The level of house price dispersion across counties is now as large as during the height of the housing boom.

During the housing boom this pattern resulted in many households choosing to purchase property outside of Dublin, which led to significant long-distance commuting. The combination of maximum loan-to-value and loan-to-income ratios and diverging house prices between the city areas and the Rest of the Country might result in similar purchasing patterns as during the boom period with increasing commuting distances and resulting unsustainable transport patterns.

FIGURE 2 Standard Deviation of House Prices across Counties, 1996 to 2015



Source: Own calculations using data from the ESRI/PTSB House Price Index and Daft.ie.

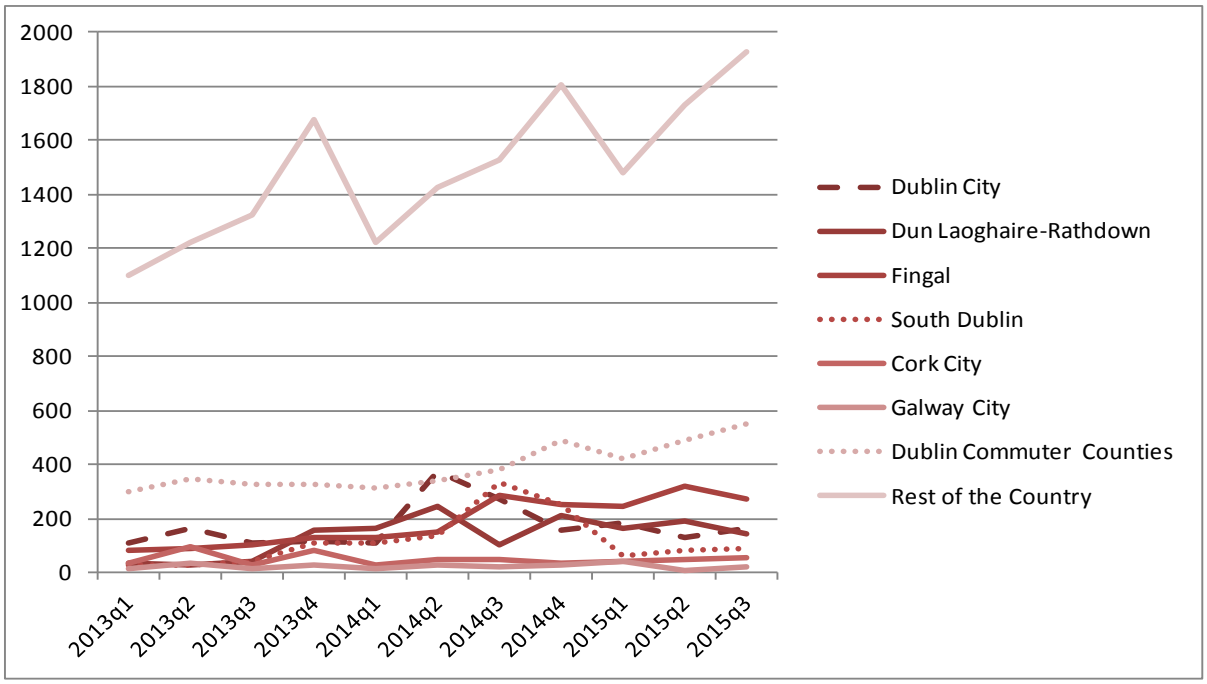
3. Housing Supply

Increasing prices are a result of demand exceeding supply of housing, which may be due to underlying fundamentals such as population growth or speculation. Housing completions are shown in Figure 3. The most striking feature of the graph is that completions in the Rest of the Country account for about 60 per cent of total completions. Total completions in Dublin have averaged just over 600 per quarter or less than 2,500 per year which is considerably less than the number needed to accommodate projected demographic change, which thus leads to an increasing undersupply in Dublin. The graph shows that completions have been increasing, but that this is concentrated in the Rest of the Country and Dublin Commuter Counties, and in the case of the city areas the increases are from an exceptionally low base. The number of completions has not been increasing in Cork City.

At the national level, quarterly housing completions peaked in the fourth quarter of 2006 when over 26,000 units were recorded as being completed. More recently (between Q1, 2013 and Q4, 2015) the number of quarterly completions was less than a tenth of that observed at the peak. Overall, completions over the recent period are only about 28 per cent of the long-run average (average from 1996 to 2015). At the county level, recent completions in Galway City only account for 12 per cent of the long-run average completions for that local

authority, while that proportion was 19 per cent for Dublin City and 21 per cent for Cork City. In contrast Dun Laoghaire-Rathdown (63 per cent), Fingal (35 per cent), Kildare (35 per cent), Louth (32 per cent) and Wicklow (30 per cent) have been recording levels of completion a little closer to their long-run averages. This suggests specific constraints to increased supply in city areas, which may encompass lack of development sites and/or higher development costs.

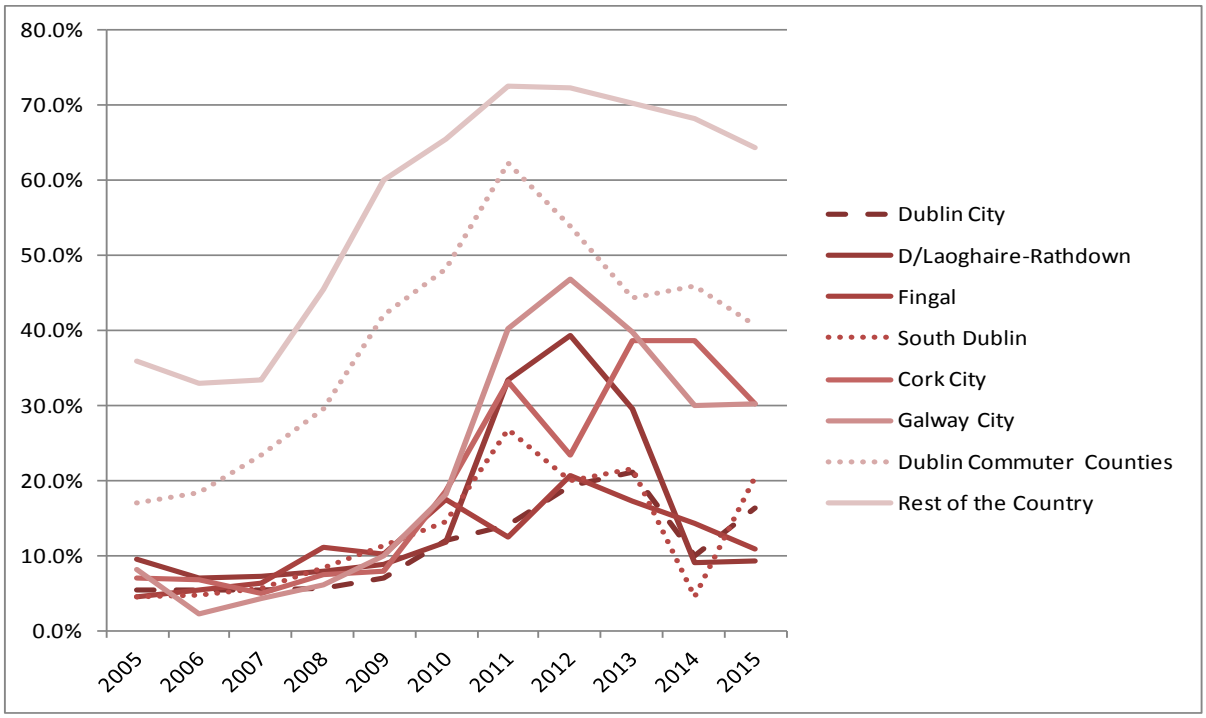
FIGURE 3 Housing Completions (No. Of Units), Quarter 1, 2013 to Quarter 3, 2015



Source: Department of the Environment, Community and Local Government Housing Statistics.

It is also possible to consider the type of properties that were completed using annual data. Figure 4 shows the proportion of the total number of completions accounted for by one-off houses. The graphs show that this proportion increased significantly in the wake of the economic crisis, reaching over 20 per cent in all Dublin counties and over 30 per cent in the other cities. In contrast the number of completed units accounted for by apartments or flats declined significantly. In the case of Dublin City this proportion declined from almost 80 per cent to less than 40 per cent. This indicates the decline of larger scale developments during the downturn. Up to now there is only limited evidence of an increase in apartment building, and the decrease in the proportion of completions accounted for by one-off houses is largely due to the construction of houses as part of a wider scheme.

FIGURE 4 Share of Annual Completions Accounted for by One-Off Houses, 2005 to 2015



Source: Department of the Environment, Community and Local Government Housing Statistics.

On average, completions account for about 84 per cent of the average number of planning permissions over the period 2001 to 2015. Thus, some 16 per cent of planning permissions are not converted into completions. Nevertheless, the data suggest that planning permissions are a useful indicator of future housing completions even though not all permissions will result in completions.

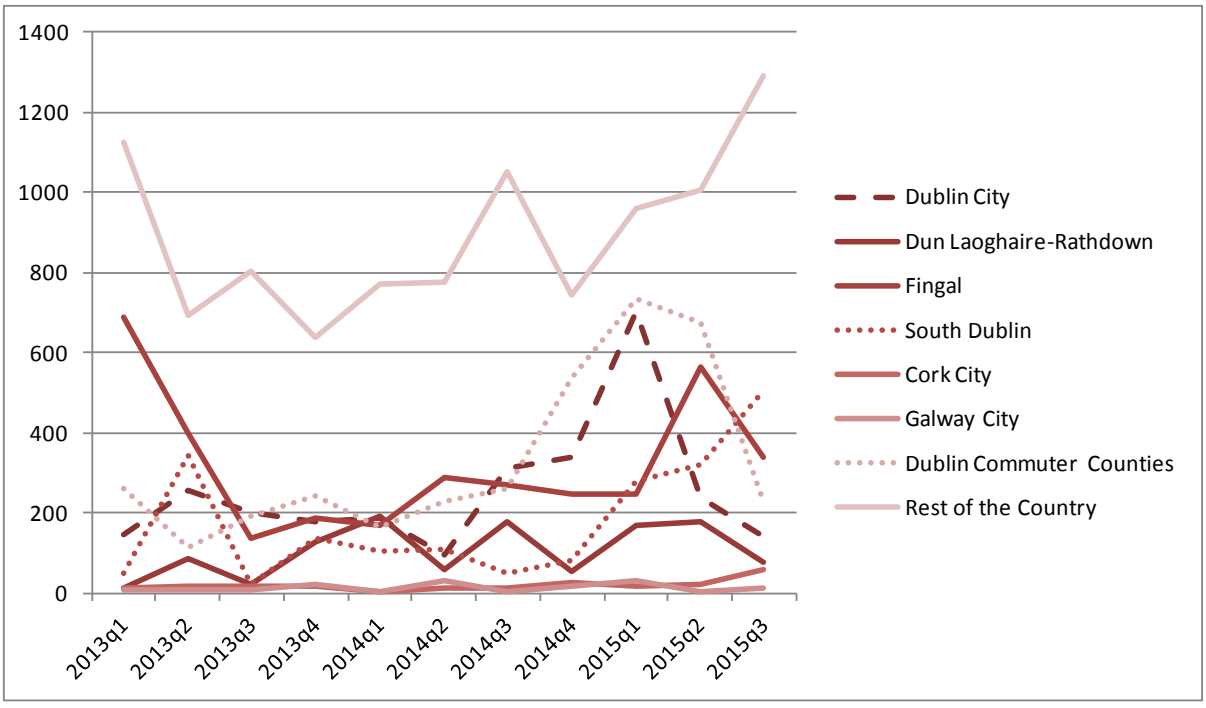
The peak number of units for which planning permission was granted during the boom was just under 29,000 units in the second quarter of 2005. Since then the number of units for which planning permission has been granted has declined significantly, averaging just over 2,000 units during the period 2013 to the third quarter of 2015, which represents just over 7 per cent of the peak level. This trend is also reflected in the Dublin counties and the other cities (see Figure 5). However, planning permissions declined more than the national average in Dublin City and Dun Laoghaire-Rathdown. More recently there are signs that the number of planning permissions is increasing nationally. In contrast in Cork City and Galway City planning permissions remain flat.

In relation to the composition of planning permissions, there is a slight downward trend in the proportion accounted for by one-off houses suggesting a gradual return of larger scale developments. The percentage of permissions (units) accounted for by one-off houses had increased in all Dublin counties and cities in

the wake of the economic crisis, reaching as high as 100 per cent in South Dublin in the first quarter of 2012. The data show that the increase in the share of planning permissions accounted for by one-off houses was due to the decline in multi-development houses and apartments which came to a virtual standstill. Planning permissions for apartments and flats hit a low of 114 in the second quarter of 2014 while planning permissions for multi-development houses were at their lowest in the first quarter of 2012. More recently the proportion accounted for by one-off houses has been at just over 10 per cent in Dublin City, less than 10 per cent in Fingal and South Dublin, but well above 10 per cent in Dun Laoghaire-Rathdown.

However, the low number of new planning permissions for apartments/flats over the recent period also indicates that supply of these types of units will not increase rapidly. In Fingal the average number of planning permissions granted for apartments or flats in the period 2013 to the third quarter of 2015 is less than a fifth of the average number over the period 2001 to the third quarter of 2015, and less in other counties.

FIGURE 5 Planning Permissions Granted (No. Of Units), Quarter 1, 2013 to Quarter 3, 2015

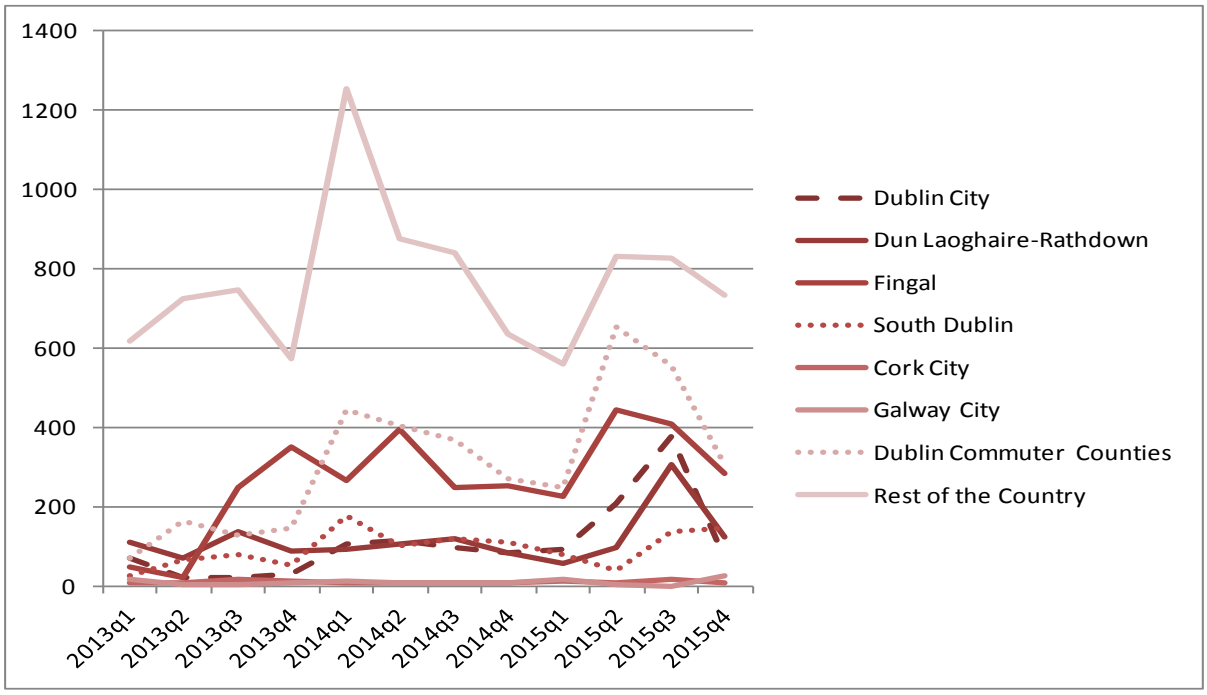


Source: Department of the Environment, Community and Local Government Housing Statistics.

The final supply variable considered here is the number of construction commencements. These peaked in the second quarter of 2006 while completions peaked two quarters later. Over the more recent period since the start of 2013

commencements averaged at just over 7 per cent of the peak level. As for completions there is some evidence that commencements are increasing but that the total number remains very small, and they also appear to have dipped over the most recent quarters. Figure 6 shows the number of commencements for the four Dublin counties and the other cities. The Figure shows the low level of commencements in all counties as well as the spike due to the methodological change for the data collection.[7] The graph shows that commencements have increased recently in Dublin City and Fingal, while there is no evidence of an increase in the number of units on which construction has commenced in other counties and cities. Thus, one can expect an increase in the supply of housing in Dublin City and Fingal as the units which have been commenced will be completed.

FIGURE 6 Construction Commencements (No. Of Units), Quarter 1, 2013 to Quarter 4, 2015



Source: Department of the Environment, Community and Local Government Housing Statistics.

4. Relationship Between Prices and Supply

A strong increase in prices is a clear sign that demand exceeds supply. However, increasing prices should also result in increased supply. While the analysis above suggests that there is some evidence of supply picking up, this descriptive

[7] The data are now collected using the Building Control Management System (BCMS), whereas the data were previously collected from the Residential Commencement Notices received by Local Authorities. The data up to March 2014 recorded the commencement when the notice was received while the data for the subsequent period recorded the date of commencement as the date reported by the developer/builder.

approach cannot determine the causal temporal relationship between the variables.

One simple way to consider the relationship between prices and supply is to calculate the correlation coefficient between price and completions. Over the period 1996 to the third quarter of 2015 the correlation between prices and completions was 0.62 at the national level. At the county level there are some differences with the correlation ranging from 0.76 down to 0.06, and there are also differences across time periods. The positive correlation coefficient might suggest a positive response of completions to an increase in prices. However, the significant drawback of a simple correlation coefficient is that it cannot identify the direction of causality i.e. a positive correlation between prices and completions might be due to a price response to change in completions rather than a response of completions as a result of increases in prices.

A widely used approach to analyse the inter-temporal relationships between variables is to utilise so called vector autoregressions (VAR), where each variable is modelled as a function of current and lagged values of all variables of interest.[8] This approach can be used to determine whether variables change in response to each other. It thus overcomes the shortcoming of the correlation coefficient in that it is able to identify the direction of causality. Formally, if a variable helps in predicting the other it is said to Granger-cause the other variable.

Applying this methodology yields some interesting results.[9] When analysed across all counties there is strong evidence that an increase in prices causes an increase in completions i.e. there is a supply response. This finding holds for estimates calculated over the 1996 to 2015 period and also the sub-periods 1996 to 2006 and 2007 to 2015. However, different results are found for county sub-groups. Specifically the results for Dublin and Dublin Commuter Counties indicate that particularly in the 2007 to 2015 period, completions do not respond to price changes.[10]

This is an important but counterintuitive result, which suggests that other constraints are preventing supply from increasing. Price increases may not have been sufficient to make developments in Dublin profitable, perhaps because of

8 VARs gained their popularity following the work by Sims (1980).

9 This section draws on results from the forthcoming working paper Morgenroth, E., (2016) 'From Planning to Completion: A County Level Analysis of Housing Supply'.

10 In the case of the four Dublin counties and the four Dublin Commuter Counties the effect of prices on completions is not statistically significant at conventional levels both when estimated using the price level and the change in prices.

higher construction costs,[11] or because of planning regulations that add to costs. Developers may still find it difficult to raise credit for larger projects and indeed many may not be in a position to re-enter the market. Results from VAR models, where permissions and commencements are included in addition to prices and completions, show that the number of planning permissions responds positively to increases in the number of completions. This suggests that new developments are financed with the proceeds of completed developments and that developers are currently reluctant to initiate concurrent developments, which would indicate a risk-averse position. Finally, the lack of a supply response due to the increased prices may also be due to the expectation of even higher prices in the future, which would lead to land hoarding.

5. Conclusion

This note has shown that while house prices overall have been increasing and there has been some evidence of growth in housing supply, the trends vary significantly across the country. The dispersion of house prices across Irish counties is now as great as it was during the height of the boom. The economy of Dublin was less affected by the recession than other regions and has recorded growth in key variables. Real per capita gross value added in Dublin was 10 per cent higher in 2014 than in 2007, and with respect to other indicators Dublin is closer to the peak levels than most other regions. Strong employment growth, a reduction of the numbers unemployed and income growth have added to the demand for housing in Dublin.[12] The price differential coupled with new loan-to-income limits could force households to seek housing outside of Dublin and to commute longer distances, repeating trends during the boom.

A striking result is the lack of a supply response to increases in prices in the Greater Dublin region. This raises questions about the constraints that prevent normal market responses. The analysis here does not shed any light on the causes. A recent review of the international literature on housing supply policies highlights that key policies that might reduce housing supply are planning regulation, infrastructure costs and inappropriate taxation (Morley et al., 2015).

---

11 Construction costs for residential property in the Dublin area are roughly 50 per cent higher than in the North-West of the country (Chartered Quantity Surveyors, 2015).

12 According to the CSO Quarterly National Household Survey, the unemployment rate in Dublin was just 8 per cent in Q3, 2015, compared to the national rate of 9.3 per cent. The CSO Live Register statistics also show that the numbers signing on in Dublin had reduced by one-quarter since peaking during the recession. CSO County Income Statistics also show that Dublin was the only county where total incomes increased in 2011.

Additionally, despite the price rises the Dublin market may still not be profitable for developers. There may be a lack of suitable development land available or developers might be hoarding land for future development given the likely higher price and therefore profit that will be available in the future. Developers might also face financing constraints. In this respect it is noteworthy that a causal relationship from completions to planning permissions exists, which might suggest that the receipts from completed developments are needed to commence the planning of new developments.

REFERENCES

Chartered Quantity Surveyors (2015). *Construction Cost Guide: Second Half 2015*. Dublin: Chartered Quantity Surveyors.

Duffy, D., D. Byrne and J. FitzGerald (2014). 'Alternative Scenarios for New Household Formation in Ireland', Special Article in ESRI *Quarterly Economic Commentary*, Spring 2014. Dublin: Economic and Social Research Institute.

Ma, L. and L. Chunlu (2013). 'Ripple effects of house prices: considering spatial correlations in geography and demography', *International Journal of Housing Markets and Analysis*, Vol. 6:3, pp.284-299.

Meen, G. (1999). 'Regional House Prices and the Ripple Effect: A New Interpretation', *Housing Studies*, Vol. 14:6, pp. 68-75.

Morgenroth, E. (2014a). 'Modelling the Impact of Fundamentals on County Housing Markets in Ireland', *MPRA Paper* No. 57665.

Morgenroth, E. (2014b). Projected Population Change and Housing Demand: A County Level Analysis. ESRI *Research Note* 2014/2/3.

Morgenroth, E. (2016, forthcoming). 'From Planning to Completion: A County Level Analysis of Housing Supply', ESRI *Working Paper*.

Morley, C., D. Duffy and K. McQuinn (2015). 'A Review of Housing Supply Policies', *Special Article* in ESRI *Quarterly Economic Commentary*, Winter 2015, Dublin: Economic and Social Research Institute.

Sims, C. (1980). 'Macroeconomics and Reality', *Econometrica*, Vol. 48, pp. 1-48.

Tsai, C. (2014). 'Ripple effect in house prices and trading volume in the UK housing market: New viewpoint and evidence', *Economic Modelling*, Vol. 40:3, pp. 68-75.

The Economic & Social Research Institute
Whitaker Square
Sir John Rogerson's Quay
Dublin 2, Ireland
+ 353 1 863 2000 www.esri.ie
ISBN 978-0-7070-0399-3