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Quarterly Economic Commentary, Winter 2016

ESRI Forecasting Series

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MACRO
ECONOMIC
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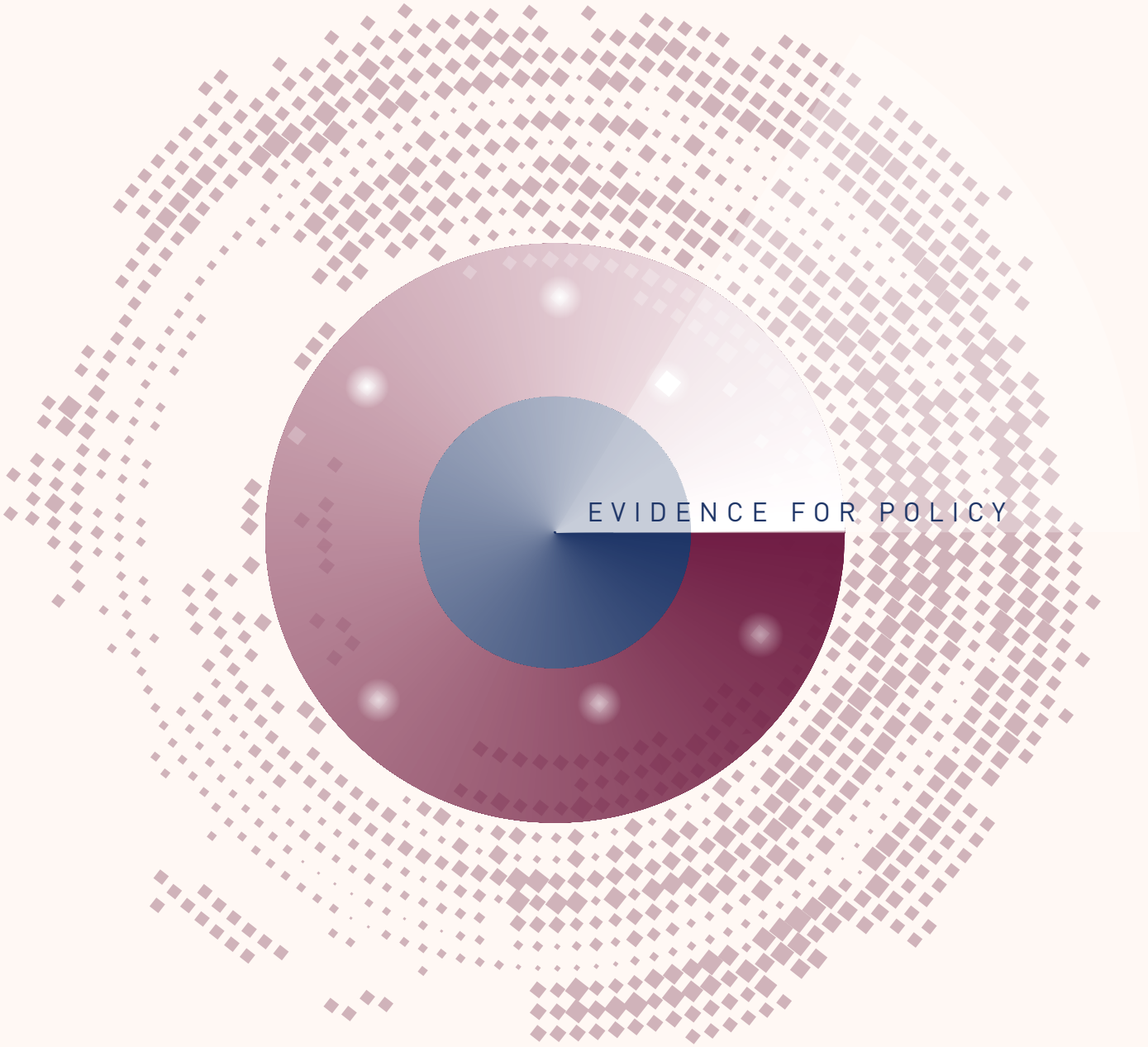
December 2016

QUARTERLY ECONOMIC COMMENTARY

WINTER 2016

Kieran McQuinn, Daniel Foley, Elish Kelly



ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Quarterly Economic Commentary

Kieran McQuinn

Daniel Foley

Elish Kelly

Winter 2016

The forecasts in this *Commentary* are based on data available by 9 December 2016

Draft completed on 9 December 2016

Special Article

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

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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.

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.

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M. Savage, T. Callan, C. Logue, M. Regan, J.R. Walsh

Summary Table

	2013	2014	2015	2016	2017
Output (Real Annual Growth %)					
Private Consumer Expenditure	-0.8	1.7	4.5	3.4	3.5
Public Net Current Expenditure	0.1	5.4	1.2	1.2	1.2
Investment	-5.4	18.2	32.7	5.6	13.4
Exports	3.1	14.4	34.4	6.4	5.0
Imports	1.1	15.3	21.7	7.0	7.4
Gross Domestic Product (GDP)	1.1	8.5	26.3	4.2	3.5
Gross National Product (GNP)	4.7	9.2	18.7	8.5	3.5
Prices (Annual Growth %)					
Consumer Price Index (CPI)	0.5	0.2	-0.3	0.0	0.6
Growth in Average Hourly Earnings	-0.8	1.6	2.0	2.3	2.3
Labour Market					
Employment Levels (ILO basis (000s))	1,880	1,914	1,964	2,018	2,058
Unemployment Levels (ILO basis (000s))	282	243	204	175	154
Unemployment Rate (as % of Labour Force)	13.1	11.3	9.4	8.0	7.0
Public Finance					
General Government Balance (€bn)	-10.2	-7.2	-4.8	-0.5	0.1
General Government Balance (% of GDP)	-5.7	-3.7	-1.9	-0.2	0.0
General Government Debt, % of GDP	119.5	105.2	78.6	77.0	73.2
External Trade					
Balance of Payments Current Account (€bn)	3.9	3.2	26.2	30.7	24.8
Current Account (% of GNP)	2.5	2.0	12.9	14.1	10.9

Note: Detailed forecast tables are contained in an Appendix to this *Commentary*.

National Accounts 2015

A: Expenditure on Gross National Product

	2014	2015	Change in 2015		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	87.8	92.4	5.3	0.7	4.5
Public Net Current Expenditure	26.5	27.0	1.9	0.8	1.2
Gross Fixed Capital Formation	39.6	54.1	36.7	3.1	32.7
Exports of Goods and Services	219.8	317.2	44.3	7.4	34.4
Physical Changes in Stocks	2.8	1.3			
Final Demand	**376.4**	**492.0**	**30.7**	**5.2**	**24.2**
less:					
Imports of Goods and Services	185.2	236.0	27.4	4.7	21.7
Statistical Discrepancy	1.9	-0.2			
GDP at Market Prices	**191.2**	**256.0**	**33.8**	**5.7**	**26.7**
Net Factor Payments	-29.7	-53.2			
GNP at Market Prices	**163.4**	**202.6**	**24.0**	**4.5**	**18.7**

B: Gross National Product by Origin

	2014	2015	Change in 2015	
	€ bn	€ bn	€ bn	%
Agriculture	3.3	3.3	0.0	-0.9
Non-Agriculture: Wages, etc.	73.4	77.6	4.2	5.7
Other	69.3	94.1	24.8	35.8
Adjustments: Stock Appreciation	0.2	0.2		
Statistical Discrepancy	-1.9	0.2	2.1	-108.1
Net Domestic Product	**144.4**	**175.5**	**31.1**	**21.5**
Net Factor Payments	-29.7	-53.2	-23.5	78.9
National Income	**114.7**	**122.3**	**7.6**	**6.6**
Depreciation	30.9	61.6	30.7	99.3
GNP at Factor Cost	**145.6**	**183.9**	**38.3**	**26.3**
Taxes less Subsidies	17.9	18.8	0.9	5.2
GNP at Market Prices	**163.4**	**202.6**	**39.2**	**24.0**

C: Balance of Payments on Current Account

	2014	2015	Change in 2015
	€ bn	€ bn	€ bn
X – M	34.6	81.3	46.7
F	-29.7	-53.2	-23.5
Net Transfers	-2.7	-2.9	-0.1
Balance on Current Account	**2.2**	**25.3**	**23.1**
as % of GNP	1.3	12.5	11.4

National Accounts 2016

A: Expenditure on Gross National Product

	2015	2016	Change in 2016		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	92.4	96.5	4.4	1.0	3.4
Public Net Current Expenditure	27.0	28.0	3.7	2.5	1.2
Gross Fixed Capital Formation	54.1	58.5	8.2	2.4	5.6
Exports of Goods and Services	317.2	349.3	10.1	3.5	6.4
Physical Changes in Stocks	1.3	1.0			
Final Demand	**492.0**	**533.3**	**8.4**	**2.8**	**5.5**
less:					
Imports of Goods and Services	236.0	272.2	15.3	7.8	7.0
Statistical Discrepancy	-0.2	0.0			
GDP at Market Prices	**255.8**	**261.1**	**2.0**	**-1.9**	**4.2**
Net Factor Payments	-53.2	-43.6			
GNP at Market Prices	**202.6**	**217.5**	**7.3**	**-1.1**	**8.5**

B: Gross National Product by Origin

	2015	2016	Change in 2016	
	€ bn	€ bn	€ bn	%
Agriculture	3.3	3.4	0.1	2.5
Non-Agriculture: Wages, etc.	77.6	81.6	4.0	5.1
Other	94.1	89.6	-4.6	-4.8
Adjustments: Stock Appreciation	0.2	0.2		
Statistical Discrepancy	0.2	0.0	-0.1	-93.5
Net Domestic Product	**175.5**	**174.8**	**-0.6**	**-0.4**
Net Factor Payments	-53.2	-43.6	9.6	-18.0
National Income	**122.3**	**131.2**	**8.9**	**7.3**
Depreciation	61.6	66.3	4.7	7.7
GNP at Factor Cost	**183.9**	**197.5**	**13.7**	**7.4**
Taxes less Subsidies	18.8	20.0	1.2	6.4
GNP at Market Prices	**202.6**	**217.5**	**14.9**	**7.3**

C: Balance of Payments on Current Account

	2015	2016	Change in 2016
	€ bn	€ bn	€ bn
X – M	81.2	77.1	-4.1
F	-53.2	-43.6	9.6
Net Transfers	-2.9	-2.9	0.0
Balance on Current Account	**25.2**	**30.7**	**5.5**
as % of GNP	12.4	14.1	2.5

National Accounts 2017

A: Expenditure on Gross National Product

	2016	2017	Change in 2017		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	96.5	100.8	4.5	1.0	3.5
Public Net Current Expenditure	28.0	28.5	1.8	0.6	1.2
Gross Fixed Capital Formation	58.5	68.8	17.6	3.7	13.4
Exports of Goods and Services	349.3	376.3	7.7	2.6	5.0
Physical Changes in Stocks	1.0	2.0			
Final Demand	**533.3**	**576.5**	**8.1**	**2.5**	**5.4**
less:					
Imports of Goods and Services	272.2	302.0	10.9	3.3	7.4
Statistical Discrepancy	0.0	0.0			
GDP at Market Prices	**261.1**	**274.5**	**5.1**	**1.5**	**3.5**
Net Factor Payments	-43.6	-46.7			
GNP at Market Prices	**217.5**	**227.8**	**4.7**	**1.2**	**3.5**

B: Gross National Product by Origin

	2016	2017	Change in 2017	
	€ bn	€ bn	€ bn	%
Agriculture	3.4	3.5	0.1	3.5
Non-Agriculture: Wages, etc.	81.6	85.2	3.6	4.4
Other	89.6	93.6	4.1	4.5
Adjustments: Stock Appreciation	0.2	0.2		
Statistical Discrepancy	0.0	0.0	0.0	0.0
Net Domestic Product	**174.8**	**182.6**	**7.8**	**4.4**
Net Factor Payments	-43.6	-46.7	-3.1	7.0
National Income	**131.2**	**135.9**	**4.7**	**3.6**
Depreciation	66.3	70.9	4.6	6.9
GNP at Factor Cost	**197.5**	**206.8**	**9.3**	**4.7**
Taxes less Subsidies	20.0	21.0	1.0	5.2
GNP at Market Prices	**217.5**	**227.8**	**10.3**	**4.7**

C: Balance of Payments on Current Account

	2016	2017	Change in 2017
	€ bn	€ bn	€ bn
X – M	77.1	74.4	-2.8
F	-43.6	-46.7	-3.1
Net Transfers	-2.9	-2.9	0.0
Balance on Current Account	**30.7**	**24.8**	**-5.8**
as % of GNP	14.1	10.9	-2.6

The Irish Economy – Forecast Overview

2016 is likely to see another strong performance by the Irish economy with GDP growth set to increase by 4.2 per cent. In the main, this reflects particularly strong trends in domestic consumption and investment. Improvement in household balance sheets coupled with continued, albeit modest, increases in incomes have led to greater consumer confidence. The changes in investment, amongst other factors, do reflect variations in the intangible assets category which is closely related to movements in the intellectual property of multinational firms.

However the international climate for Irish goods and services, which had already been somewhat uncertain given concerns about the Chinese economy, witnessed further dislocation in 2016 through the Brexit vote in June. The potential implications for the Irish economy of different possible trade outcomes due to Brexit have been analysed recently in Bergin et al. (2016).[1] The results suggest Irish GDP could fall by as much as 3.8 per cent relative to a baseline case of no Brexit. While these trade-related outcomes will not materialise over the next year, the uncertainty facing the Irish economy in anticipation of these outcomes could in itself have a negative impact on domestic activity.

Indeed, the increased prominence given to a hard Brexit scenario in UK policymaking circles has led us to reduce, marginally, our expectations for Irish exported trade in 2017. Hence we now forecast GDP growth of 3.5 per cent for next year.

The prospects for global trade more generally are rendered more uncertain following the outcome of the US presidential election. Greater trade difficulties between the US and China and more US trade protectionism, in general, would have an adverse impact on the global economy. These developments do serve to further increase the downside risk for the export sector and the Irish economy as a whole.

The continued improvement in economic performance over the past number of years has seen a significant stabilisation of the public finances; we believe that the fiscal accounts will be almost in balance in 2016, with a small surplus likely in

[1] A. Bergin et al. (2016). 'Modelling the Medium to Long Term Potential Macroeconomic Impact of Brexit on Ireland', ESRI Working Paper No. 548 November.

2017. This latter outcome would be a prudent outcome as the economy is likely to be at its potential level of output.

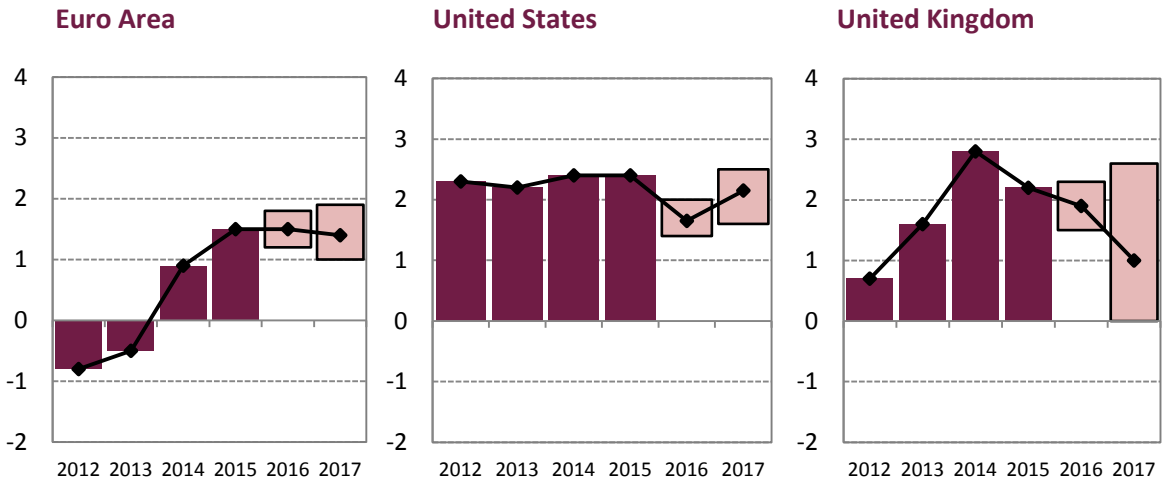
Savage et al., in a Special Article to the *Commentary*, analyse the distributional impact of the budget. They conclude that for most income groups, the impact of Budget 2017 changes is rather small. The greatest gains are seen in the lowest income quintile – the poorest section of the population. Savage et al. conclude that Budget 2017 is close to being distributionally neutral overall, but with some additional resources targeted towards those on the lowest incomes.

From a macroeconomic perspective the overall package for Budget 2017 was broadly in line with a neutral fiscal package. However, it should be noted that an ex-post, as opposed to ex-ante analysis of Budget 2016 now reveals that package to be somewhat more pro-cyclical than what had otherwise been assessed.

The International Economy

Developments in the International Economy have been dominated by the Brexit referendum result in June. Q3 2016 provided the first glimpse of UK National Account data following the decision to leave the European Union. Since Q2 2016, there have been some moderate revisions to GDP for a number of economies. Figure 1 shows the range of forecasts for the Euro Area, the US and UK economies as of Q3 2016. Not surprisingly, forecasts for Euro Area GDP have been revised downwards moderately on the back of Brexit, however the outlook still remains relatively stable. GDP is now expected to be 1.5 per cent in 2016 and to fall down to 1.4 per cent in 2017, a reduction of approximately 0.1 and 0.2 percentage points compared to Q2 forecasts. There have also been downward revisions to the outlook for the US. GDP growth is now expected to be 1.7 per cent in 2016 and 2.2 per cent in 2017, a moderate downward revisions compared to earlier projections. Not surprisingly some of the biggest revision to GDP forecasts over the last two quarters have come from the UK. Following significant downward revisions to 2017 GDP growth, the UK Treasury increased their growth expectations for 2016 following better than expected performance in the economy in Q3. In particular, expected UK GDP growth has been revised up in 2016 by 0.3 percentage points to 1.9 per cent while 2017 GDP has been revised up by 0.4 percentage points to 1.0 per cent.

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

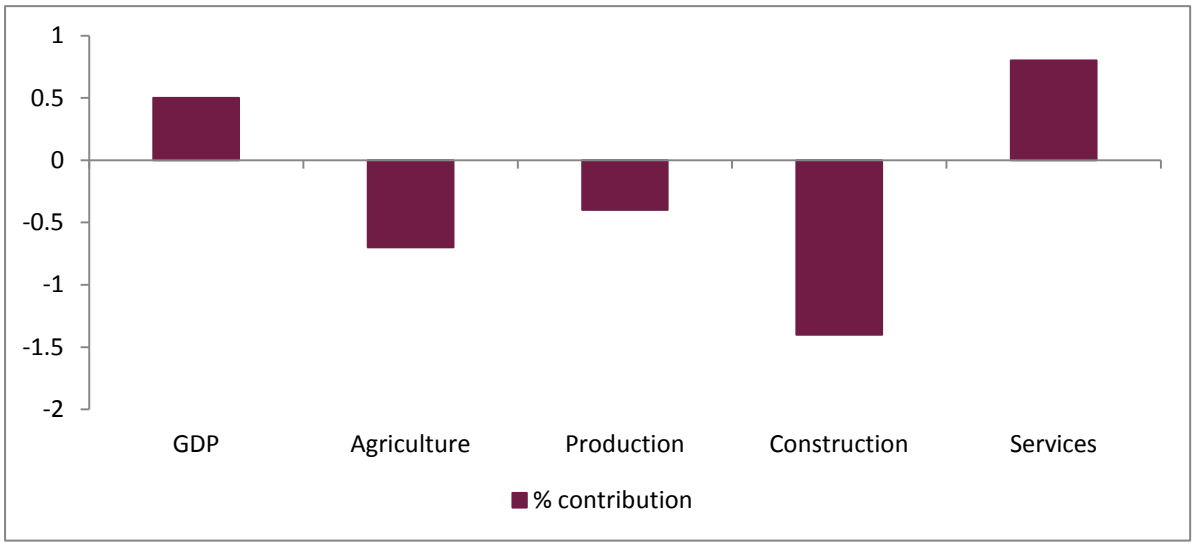


Sources: FocusEconomics, IMF, OECD, HM Treasury and Federal Reserve.

The UK Economy

Surprisingly, most data from the Office of National Statistics (ONS) reveal that the UK economy has so far remained relatively robust and has performed a lot better than expected following the June referendum. In Q3 2016 GDP was estimated to have grown by 0.5 per cent compared to Q2. Compared to the same period last year, GDP was 2.3 per cent higher. The pattern of growth seems to be broadly unaffected by the referendum as of yet. If we show the growth rates in output from the different sectors (Figure 2), however, we can see that the growth is being entirely driven by the Services sector. Output in the Services sector grew by 0.8 per cent in Q3 compared to a contraction in the other sectors such as Construction of 1.4 per cent and Production of 0.4 per cent. Although, GDP growth beat expectations this quarter, the overall growth in the economy does not appear to be balanced.

FIGURE 2 Quarter 3 GDP Growth in the UK by Industry (%)



Source: Office of National Statistics (ONS).

Sterling has depreciated against the Euro by approximately 20 per cent since the Brexit referendum. While this will most likely support the UK economy in the short run through higher exports, there is likely to be some negative impact associated with this. The National Institute of Economic and Social Research (NIESR) carried out a simulation on the effects of currency depreciation on the UK economy.[2] They find that a 10 per cent decrease in Sterling, holding all else constant, induces an increase in output by between 0.6 and 0.8 per cent on impact, with a peak effect between 1.2 and 1.5 per cent after a year. This has likely helped bolster the UK economy since Brexit but could also lead to import inflation over the next few years. This is consistent with the Bank of England's

[2] NIESR October 2016, NiGEM Observation – No 9: *Trade Elasticities and the Depreciation of Sterling*.

(BOE) recent inflation report.[3] The BOE expects inflation to rise above 2 per cent over the next 12 months largely as a result of higher import prices impacting profit margins due to the currency depreciation. This is likely to be passed through to consumers and squeeze real incomes and negatively impact consumption. Greater uncertainty is likely to weigh on business sentiment and investment decisions which will only prolong the stagnant productivity growth that the UK economy has faced over the last number of years.

The longer term implications for the UK economy largely depend on what kind of trade agreement they negotiate with the EU. A recent report by the Institute of Fiscal Studies (IFS)[4] suggests that the public finances in the UK will face a significant strain over the coming years as a result of low growth prospects and an ageing population and in particular the deficit will be £25 billion more in 2019 compared to a no-Brexit scenario. This is likely to be compounded by factors such as lower immigration, higher interest rates and the likely increase in borrowing that the government faces in the years following a UK exit.

The US Economy

US GDP in Q3 2016 beat expectations, growing at an annualised 3.2 per cent, the fastest rate in two years. The increase in GDP was largely driven by an increase in exports which is likely a once-off as a result of a surge in soybean exports.[5] Other positive contributions came from personal consumption expenditure and private inventory investment; this was partially offset by a large increase in imports over the quarter. The latest non-farm payrolls data suggest that strong employment growth in the US has continued into October with an increase of 161,000 people in employment over the month.

Although the labour market is improving, the rate of growth in employment has slowed. Employment growth has average 181,000 jobs per month this year compared to 229,000 per month in 2015. Wage growth also remains below pre-crisis levels despite the labour market nearing full employment. Despite this, there were some improvements in wage growth in October and this is forecast to continue as the economy gets closer to full employment. The latest data suggest that the unemployment rate is now 4.9 per cent, a drop of 0.1 percentage points compared to the previous month. Overall, the improvement in the labour market should continue to support consumption growth in the second half of the year leading to moderate gains in GDP growth of around 2 per cent.

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3 Bank of England (2016). *Inflation Report:* November 2016.

4 Emmerson. C. and T. Pope (2016). *Winter is Coming: The outlook for the public finances in the 2016 Autumn Statement.* Institute of Fiscal Studies.

5 Bureau of Economic Analysis (BEA).

There are however, significant downside risks to the economy following the November election result. These largely reflect increased uncertainty and in the short term will likely hamper business and consumer sentiment, delaying any investment and spending decisions. This is likely to slow investment and consumption growth and given that these components are very much supporting GDP at present this could have a significant impact on economic growth over the forecast period.

President-elect Trump has however, indicated that he will provide a boost to the economy via higher infrastructure spending. This announcement coincided with an improving outlook for the US economy over the next 12 months in the November Consumer Sentiment survey.[6]

It is difficult to ascertain the overall impact of the incoming administration's policies on the US economy. On the one hand, the infrastructure spending plan is likely to boost the economy in the short term and increase consumer and business confidence. Coupled with this infrastructure spending plan, he also plans to cut corporation and income taxes. A large fiscal stimulus consisting of both tax cuts and spending increases will increase the government's deficit and also increase the debt burden which is currently over 100 per cent of national output. The announcement of the plan has led to greater expectations that the Federal Reserve will increase interest rates in December and has led to the Dollar rallying against other currencies.

Euro Area

GDP in the Euro Area in 2015 grew by 2 per cent. This was, however, significantly distorted[7] by Ireland's GDP growth rate of 26.3 per cent over the same period. GDP growth in the Euro Area in the first half of the year has largely been a result of loose monetary policy, weak oil and commodity prices, as well as a weak Euro. Growth in the first half of 2016 was reasonably strong but has since halved in Quarter 2. Early indicators of growth in the second half of the year show that the economy has been surprisingly resilient following the Brexit result with the composite PMI hitting a 30-month high of 53.3 in October.

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6 Survey of Consumers, University of Michigan.

7 In the Autumn *Commentary* we calculated that Euro Area GDP was inflated by 0.5 per cent as a result of Ireland's growth rate in 2015.

In a recent report by the AIECE[8] private consumption and investments are expected to be the primary drivers of Euro Area growth in 2017. Export growth is expected to lag somewhat as the strengthening Euro and rising unit labour costs are eroding competitiveness in certain Euro Area countries. High uncertainty on the back of Brexit and the November US election results will also likely weigh on business and consumer sentiment.

Inflation in the Euro Area is likely to grow as loose monetary policy from the ECB is set to remain over the next year and as low oil price growth in 2015 drops out of the annual comparison. According to the AIECE, CPI inflation will pick up slightly to 0.4 per cent in 2016 and 1.2 per cent 2017 but will remain below the ECB target of 2 per cent.

China

As China moves from a centrally planned economy towards a market-based economy they have experienced phenomenal economic growth. In particular, over the past 35 years, GDP growth averaged nearly 12 per cent per annum. The growth China experienced over this period was largely led by a surge in investment spending, particularly on large scale projects to develop infrastructure around the country. During this period, China also became a major player in international trade and exports were significantly contributing towards healthy GDP growth.

There has, however, been a structural shift in China as the government is moving towards more domestic led sources of growth such as consumption. This has resulted in the economy moving towards more stable and sustainable growth levels. The OECD expects the Chinese economy to grow by around 6.5 per cent in 2016 and 6.2 per cent in 2017. Trade is playing a much less significant role than in previous years and in 2015 exports in goods and services contracted by 1.9 per cent. This trend is set to continue for the rest of 2016 with a contraction of the same magnitude expected again. The primary driver of GDP over the forecast period will be personal consumption as labour market prospects remain relatively stable and as incomes have been steadily rising. Monetary policy is expected to remain accommodative over the next two years which should support lending for consumption and investment.

High levels of public and private debt as well as a potential housing market bubble are the major sources of risk to the economy. Cheap credit over the last number of years has fuelled both the increase in debt and the booming housing

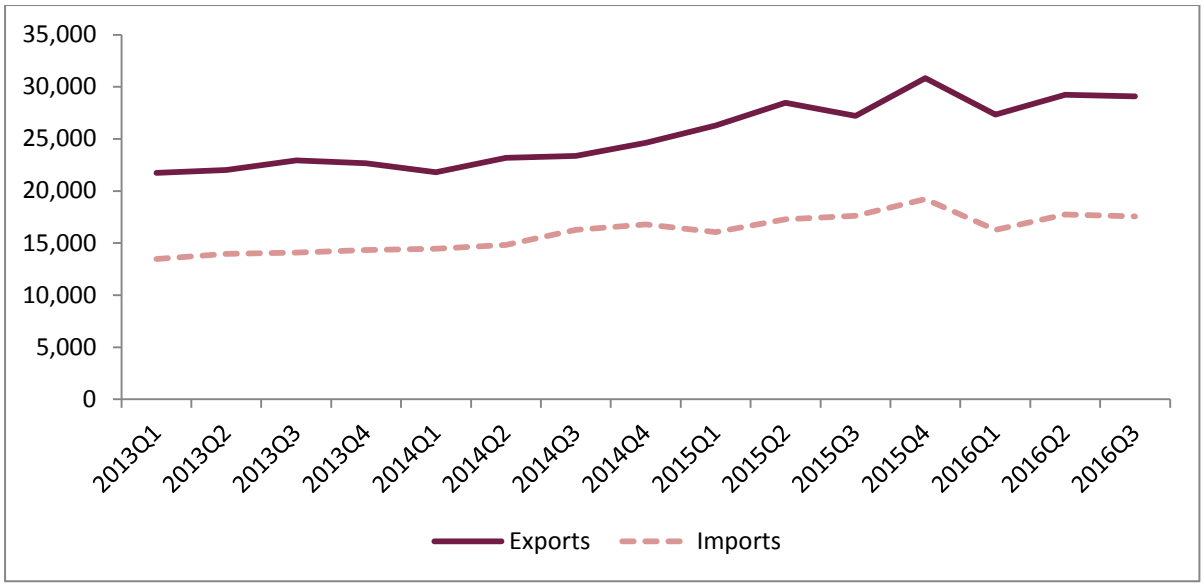
[8] Vertes et al. (2016). *AIECE General Report*. Association of European Conjuncture Institutes, November 2016.

market. Total Debt-to-GDP[9] in the Chinese economy as of Q1 2016 was approximately 255 per cent. There has been an enormous accumulation of debt in the economy since 2007 when the figure was only 148 per cent. This rapid expansion of debt brings into question the sustainability of China's growth over the next number of years.

Implications for Irish Exports, Imports and the Balance of Payments

The value of goods exports over the last three months has fallen marginally compared to Q2 data; however, it is slightly above the level seen in Q1 data. The slowdown in goods exports this quarter is likely attributable to the appreciation of the Euro against currencies such as the Dollar and the Pound over the last few months. The value of goods exports fell between June and July by approximately €1.2 billion before recovering again in August as seen in Figure 3. The results for September suggest that there was a decrease of €451 million or 4 per cent in seasonally-adjusted goods exports over the previous month. Exports relating to the pharmaceutical industry continue to dominate with exports of Organic chemicals and exports of Medical and pharmaceutical products increasing by 27 and 12 per cent respectively in September. Figure 3 shows the trends in goods imports and exports in recent years and we continue to believe that these series will grow in 2016 and 2017; however risks to the trade outlook have prompted us to moderate our growth rates down for 2016 and 2017.

FIGURE 3 Goods Exports and Imports Value (Quarterly)

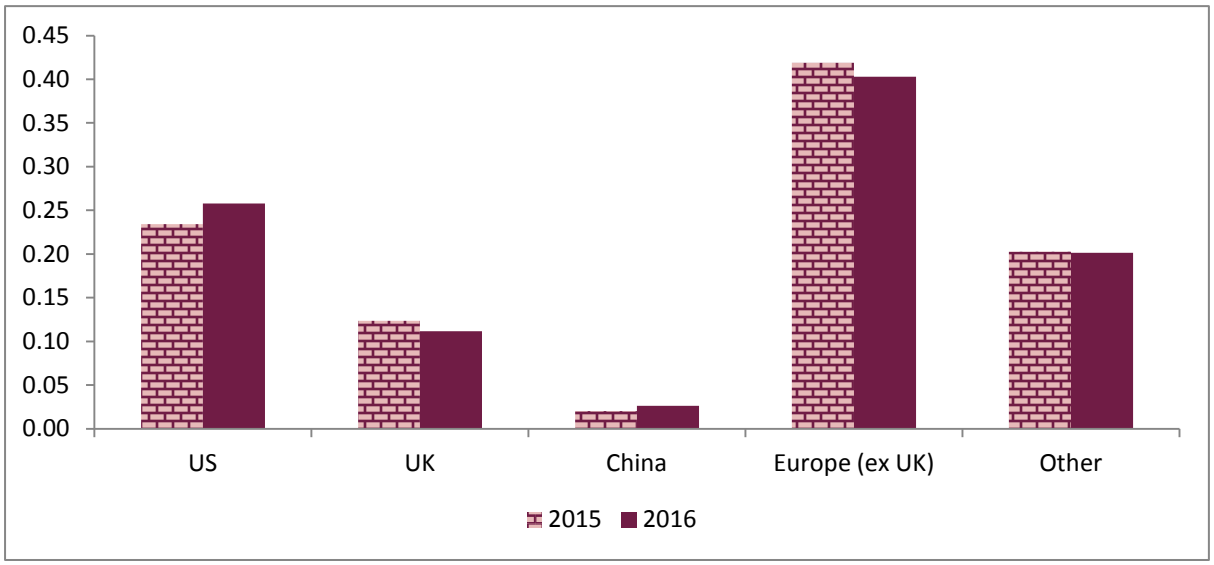


Source: Central Statistics Office.

[9] Bank of International Settlements. Total credit to the non-financial sector (core debt), as a percentage of GDP.

A breakdown by regions highlights the importance of countries such as the US and the UK for our trade outlook (Figure 4). We can see that three quarters of all Irish goods exported go to the US, the UK and Europe. The performance of these economies, therefore, has significant bearing on Ireland's export performance and in turn GDP growth. Looking at trends over the past year, the cumulative value of good exports between the periods January-September 2015 and January-September 2016 that go to the US has increased by 0.3 percentage points and now accounts for 26 per cent of the total. The proportion going to the UK has actually fallen compared to last year and this is most likely attributable to the depreciation of Sterling which has occurred since the start of the year. In value terms, goods exports have fallen by around €500 million and are expected to reduce more if uncertainty in the UK causes increasing downward pressure on the currency over the next year.

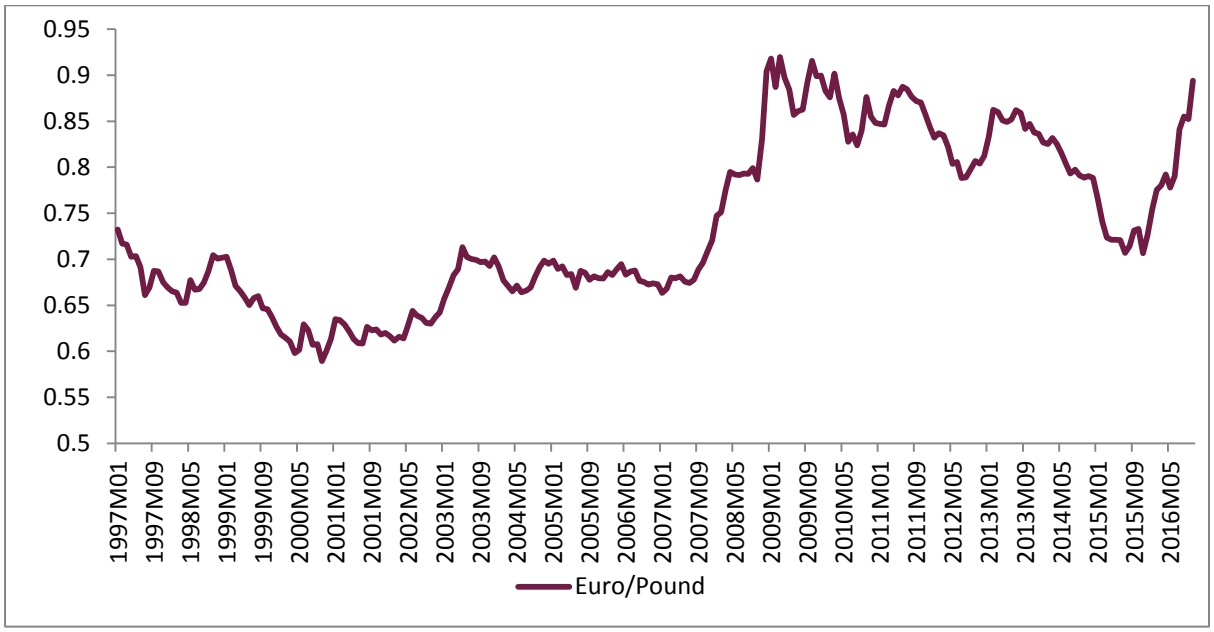
FIGURE 4 Export Share by Region (% of Total) Jan-Sep 2015 to Jan-Sep 2016



Source: Central Statistics Office.

Figure 5 plots the Euro/Pound exchange rate since 1997. We can see that the Pound has depreciated against the Euro since late 2015 and this decline accelerated following the Brexit referendum as uncertainty surrounding the outlook for the UK economy caused investors to move out of Sterling denominated assets. Although the depreciation of the Pound is likely to weigh on Irish exports over for the rest of 2016 and 2017, we assume that the exchange rate will remain at the present rate over the period.

FIGURE 5 Euro/Pound Exchange Rate



Source: Central Statistics Office.

The latest release of the Balance of Payments suggests that service exports grew by 11 per cent annually. The large presence of companies in the ICT sector in Ireland is evident from the data with approximately 44 per cent of total service exports accounted for by the computer services sector. The concentration of service imports in relatively few sectors is evident from the Balance of Payments data. In Q3 2016 approximately 81 per cent of total service imports originated in the royalties/licenses and business services categories.

The Balance of Payments showed a large surplus for 2015 and we expect a surplus to be maintained for this year and next. Between Q3 2015 and Q3 2016 the current account balance increased by approximately €3 billion. This was largely as a result of a fall in service imports and, in particular, a decrease in intellectual property rights imports. This resulted in the service balance falling by nearly €9 billion over the quarter and the overall balance is now only marginally in deficit of €485 million. As a result of the large drop-off in service imports we now envisage that the surplus will be marginally higher in 2016 but will begin to moderate in 2017 as import growth outpaces export growth.

Our forecasts for exports in 2016 and 2017 have been revised downwards marginally as developments in the world economy make it more and more likely that the outlook for trade is less favourable than the previous *Commentary*. The major factors driving the outlook are Brexit and the US presidential election. These factors are largely expected to negatively impact export demand over the forecast period. In the short term, the large scale uncertainty created by Brexit is

expected to impact export demand through the exchange rate as well as through consumer and business confidence. The possibility of greater difficulties in trade relations between the US and China, and also increasing trade protectionism in the US more generally, are likely to impact global trade and increase the downside risk for the Irish export sector.

A recent report by Bergin et al. (2016)[10] examines the longer term impact of Brexit on the Irish economy under a variety of different scenarios. The scenarios cover a range of possible trade agreements between the UK and the EU. Using the ESRI's core structural model (COSMO), the report finds that relative to a baseline scenario of 'no-Brexit', the level of Irish output will be 2.3, 2.7 and 3.7 per cent lower under the three scenarios respectively. The negative shock to foreign demand is expected to flow through the economy by means of lower exports, which has implications for the labour market and employment. It also has implications for the government through lower revenues and increasing welfare payments which inevitably makes it more difficult for the government to fund a stimulus. Approximately 30 per cent of all employment is in sectors that are heavily related to UK exports – particularly SMEs in the agri-food and tourism sectors – and are likely to feel the brunt of any negative shocks to trade.

Notwithstanding the risks mentioned above, the growth rates in our major trading partners are expected to be reasonably strong over the forecast period and as a result we expect demand for Irish exports to remain relatively robust. Overall, we now think that export growth in 2016 will be 6.4 per cent while in 2017 growth is expected to be on the order of 5 per cent, lower than earlier in the year. Imports should remain relatively strong as a strengthening currency against the Dollar and the Pound in recent months makes it cheaper for households and businesses to import from the US and the UK. The relative health of the domestic economy given the improving labour market and increasing incomes also supports our forecast of import growth of 7 per cent in 2016 and a further 7.4 per cent in 2017. These factors mean that the contribution of net exports to GDP will likely be negative in 2017.

[10] Bergin et al. (2016). 'Modelling the Medium to Long Term Potential Macroeconomic Impact of Brexit on Ireland'. Working Paper No. 548, Economic and Social Research Institute (ESRI).

The Domestic Economy

Output

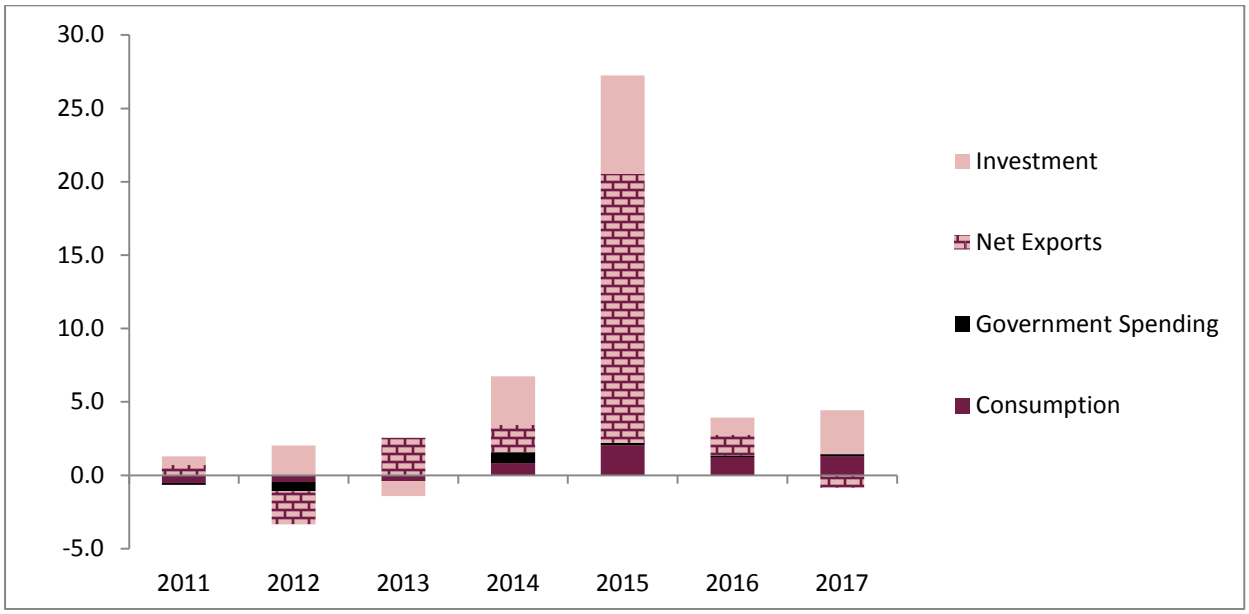
The domestic section of the *Commentary* is organised as follows; we initially review the outlook for output growth before discussing developments in the Irish monetary and financial sectors. Prices and earnings in the economy are then discussed, followed by a review of demand-side factors such as consumption 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 the last *Commentary* we detailed an output-based approach to estimating the growth rate for the Irish economy in 2015. This was in response to the particularly high official GDP growth rate reported for 2015, which in turn reflected issues such as contract manufacturing and the on-shoring of intellectual property (IP) into Ireland by multinationals located here. We see no reason to change our assessment for 2015 and we still estimate that the Irish economy grew by 5.5 per cent as opposed to the reported figure of 26 per cent.

For 2016, we believe the economy will increase by 4.2 and 8.5 per cent for GDP and GNP respectively. This reflects particularly strong growth rates in the domestic sources of growth; consumption and investment. While increases in consumption are mainly attributable to the improving economic circumstances of Irish households, changes in investment for the present year are heavily influenced by the 'intangible asset' category in the National Accounts. This category, which, amongst other components comprises of intellectual property, can display a significant amount of variation from year to year. The significant increase in GNP for the present year reflects increases in profitability for multi-national firms in the Irish economy.

We expect that 2017 will see a continuation of this trend with increases in investment and consumption leading to overall growth in GDP of 3.5 per cent. Figure 6 plots the changing composition of Irish economic growth from 2011 onwards illustrating the change from foreign to domestic-led growth over the period. Reflecting the ongoing uncertainties in trade conditions, we believe that net exports will again contribute negatively to growth in 2017.

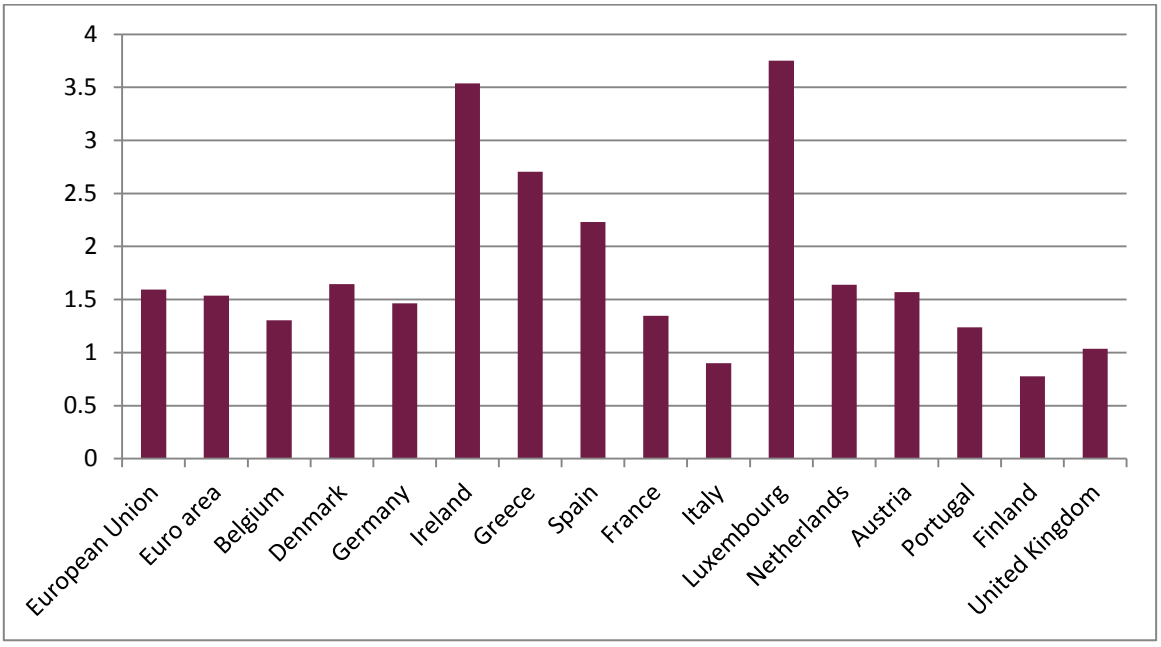
FIGURE 6 Components of Irish Growth 2011 - 2017 (%)



Sources: Eurostat and QEC calculations.

In Figure 7, we plot the latest EuroStat forecasts for a select group of European countries for 2017 (the QEC forecast is used for the Irish entry). It is evident that, as with the recent past, the Irish economy is expected to outperform most European countries. It is interesting to observe that, with the exception of Portugal, it is the countries most affected by the post 2007/08 downturn – Ireland, Spain and Greece – that are expected to grow the most next year.

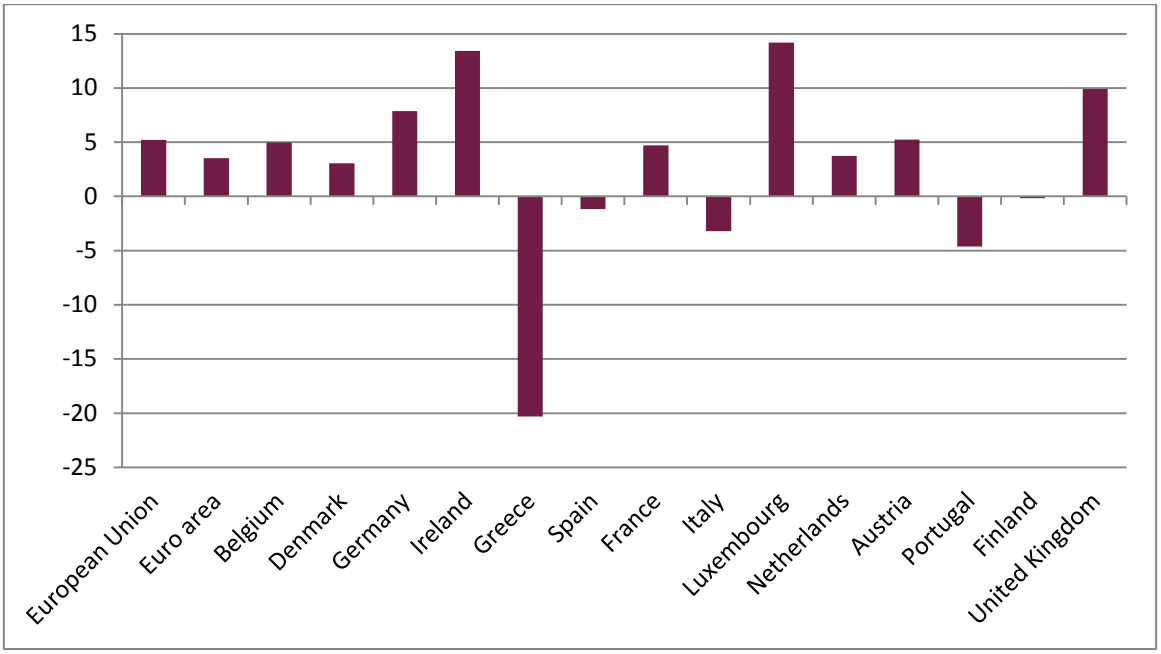
FIGURE 7 Select European Growth Rates 2017 (%)



Sources: Eurostat and QEC calculations.

It is also worth putting the Irish economic performance post-2011 in a European context. In Figure 8 we plot the GDP growth rate over the period 2011-2015 for a select group of European countries. This time, in order to get a better understanding of real Irish economic activity, we replace the official Irish growth rate in 2015 with our estimated rate of 5.5 per cent. From the graph Ireland's strong performance is evident, with only Luxembourg's economy growing faster over the period.

FIGURE 8 Select European Growth Rates 2011-2015 (%)

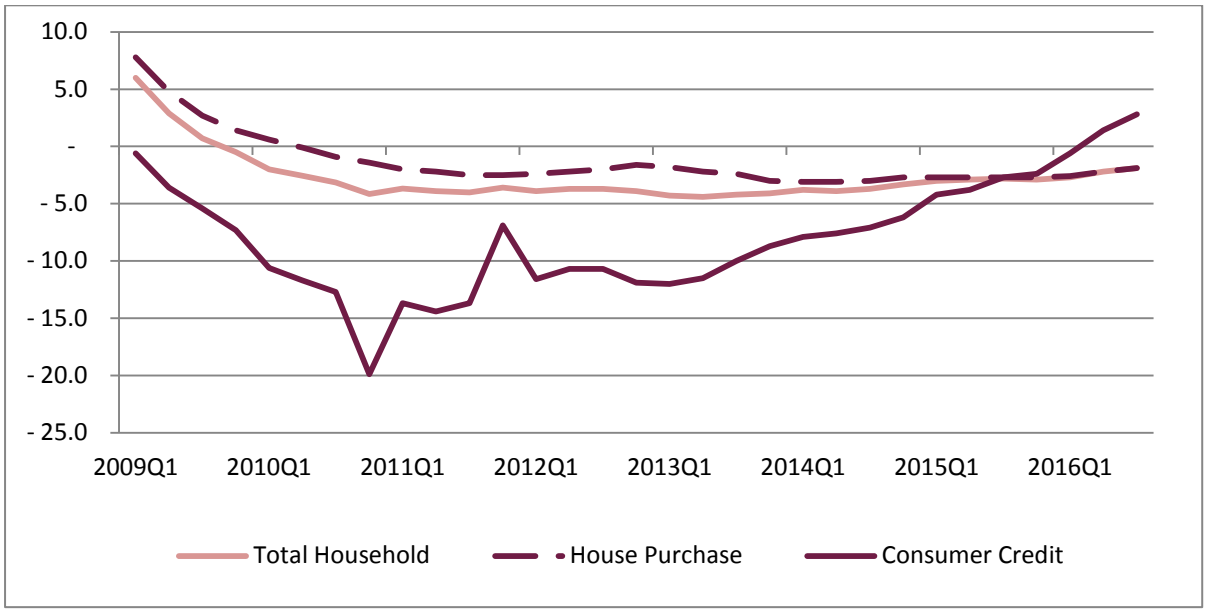


Sources: Eurostat and QEC calculations.

Monetary and Financial Conditions

Figure 9 plots the latest information on credit extension to Irish households. Overall total lending is still registering negative growth, reflecting the extent to which households are still paying down debt. Between Q3 2015 and Q3 2016, mortgage loans declined by 1.9 per cent, with households repaying €1.5 billion more than was advanced in new loans during the year. Over the same period, non-housing loans declined by €34 million, and declined by 1.4 per cent in year-on-year terms. However, within the non-housing loan category, consumer credit grew by 2.8 per cent in annual terms in September. From Figure 9, what is apparent is that lending for consumption purposes, which only started to grow in a positive sense in the present year, is now increasing quite strongly. This highlights the important contribution of consumption to domestic growth.

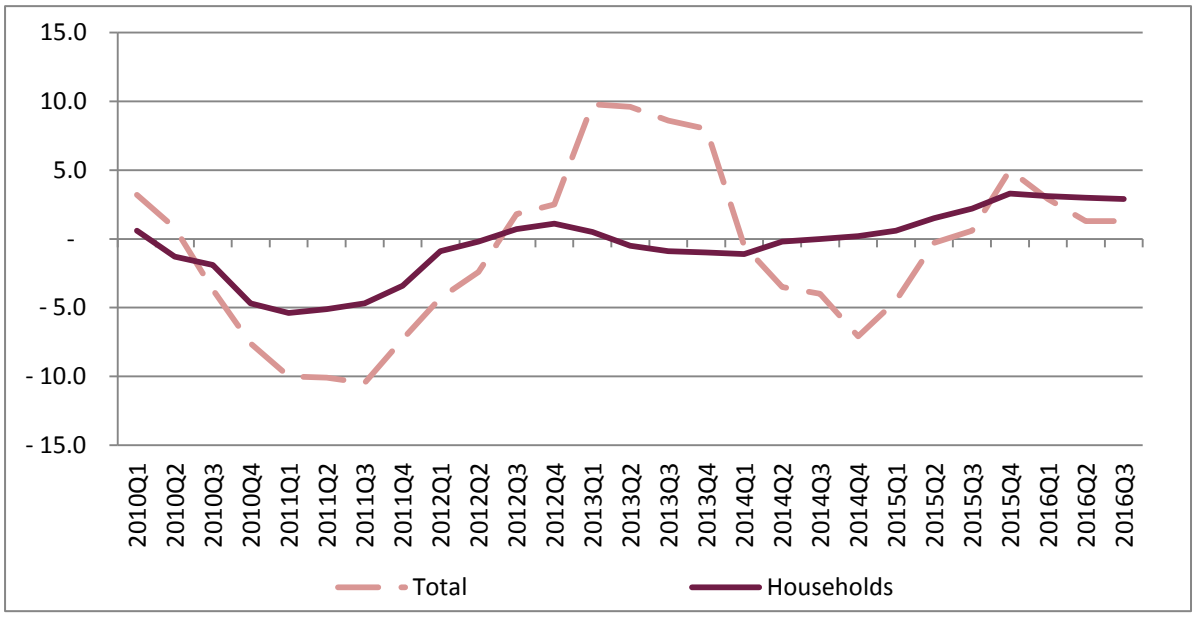
FIGURE 9 Percentage Year-on-year Change in Lending to Irish Resident Households



Source: Central Bank of Ireland.

Deposits from Irish residents continue to display slow growth; Figure 10 plots the growth rate of both total and household resident deposit rates since 2010. As noted in Duffy et al. (2016),[11] the slow pace of deposit growth in the Irish banking sector may have implications for credit growth in the domestic economy.

FIGURE 10 Percentage Year-on-year Change in Irish Resident Deposits

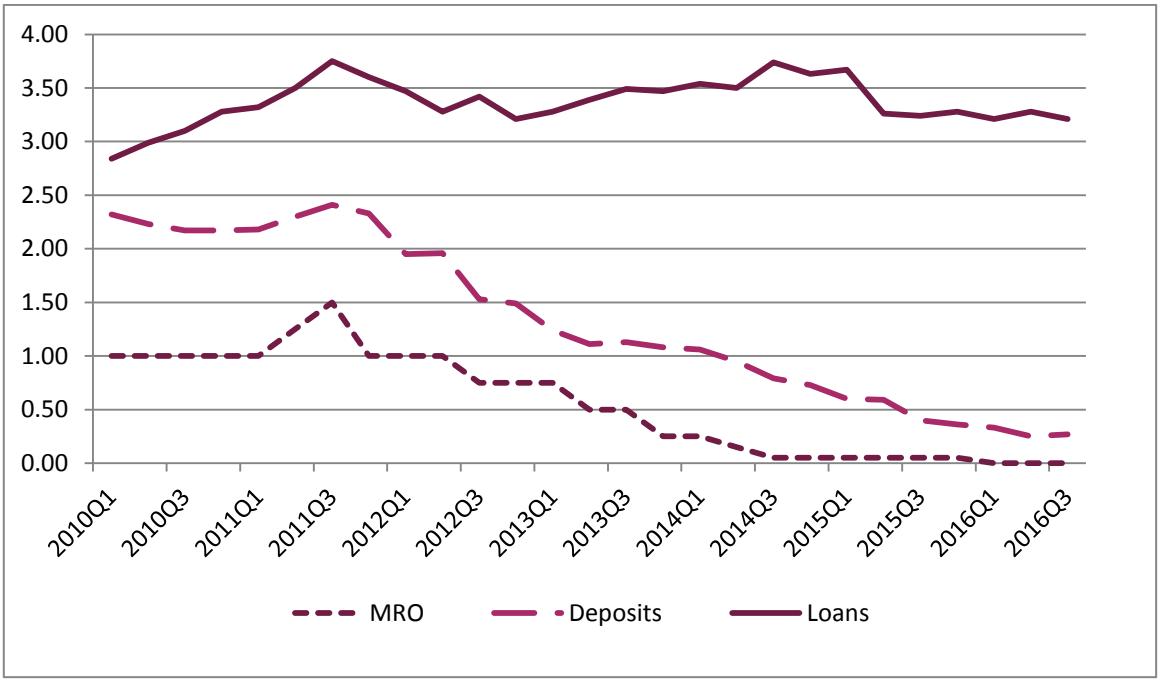


Source: Central Bank of Ireland.

[11] Duffy et al. (2016). 'Demographic Change, Long-Run Housing Demand and the Related Challenges for the Irish Banking Sector'. ESRI *Economic Outlook* December 2016.

The relatively small rate of increase is inevitably related to the particularly low interest rates on offer for deposits at present. Interest rates on mortgage loans (which account for 86 per cent of total outstanding loans to households) have typically been closely aligned with the ECB's main refinancing rate (MRO), due to the high proportion of tracker and other variable rate products in the Irish market. However, over the last number of years, the relationship with the MRO benchmark has broken resulting in Irish rates being higher than equivalent Euro Area interest rates. For example, data from the ECB show that interest rates for house purchases[12] in the Euro Area averaged 1.86 per cent in September 2016 while the comparable rate for Ireland was 3.25 per cent, the highest among the Euro Area countries.

FIGURE 11 Interest Rates for Household Loans and Deposits



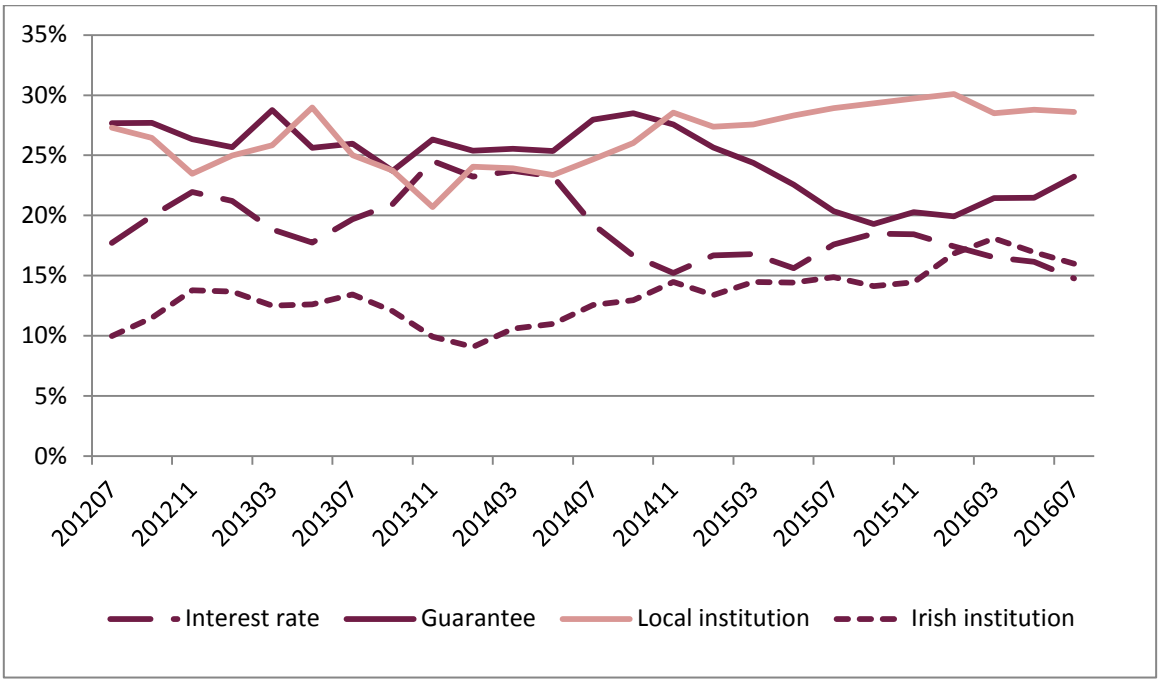
Source: Central Bank of Ireland.

Responses to questions in the ESRI/Nationwide savings index provides some information on factors influencing the savings decisions of Irish households. For example, one query enquires as to what is the most important factor in households' decision regarding where to save. The responses are plotted in Figure 12 below. Two of the more interesting trends to emerge are the decline in the role that interest rate differences amongst institutions play and the reduced importance of the Government guarantee. The decline in the role played by interest rate differences may be due to the perception amongst households that

[12] The composite cost of borrowing indicator for households for house purchases percentages per annum; new business. European Central Bank Statistical Warehouse.

there is very little difference between the financial institutions in terms of the rate offered. The fall in the importance of the guarantee denotes the greater degree of financial stability evident in the Irish financial sector.

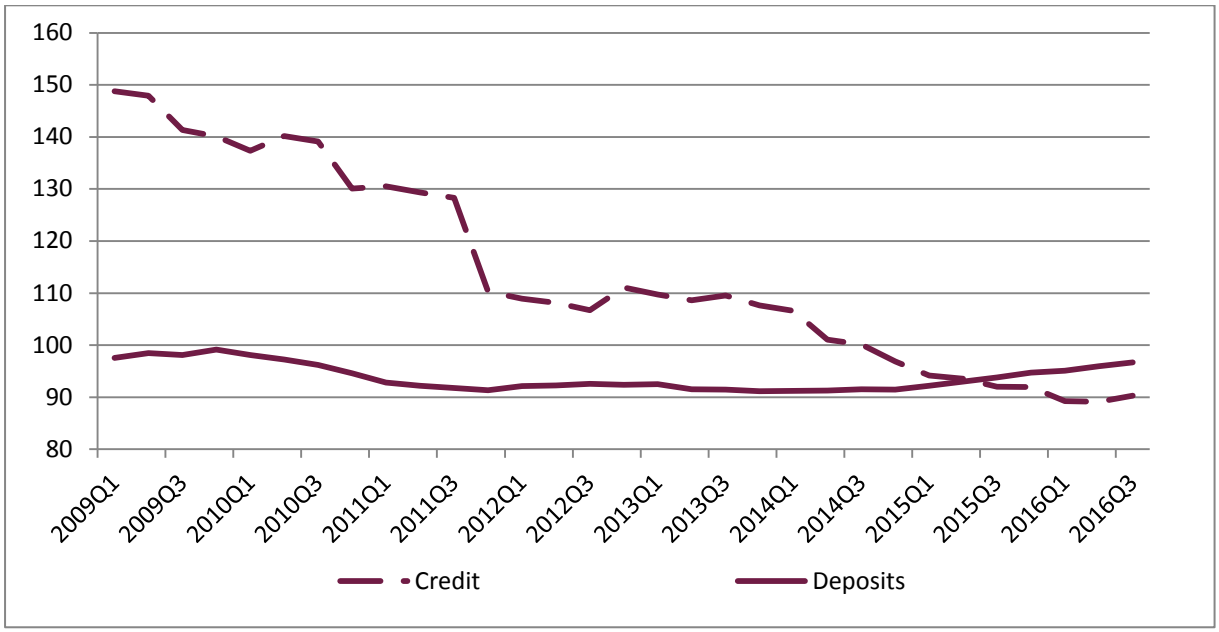
FIGURE 12 What is the Most Important in Deciding Where to Save?



Source: ESRI/Nationwide.

Notwithstanding the slow growth of deposits, as can be seen from Figure 13, the decline in overall lending by the Irish financial sector means that Irish households are net funders of the Irish banking system for the fifteenth consecutive month. Banks held €6.4 billion more household deposits than loans in Q3 2016. In Q1 2009, for example, household loans exceeded deposits by over €50 billion.

FIGURE 13 Household loans and deposits (€ billion)



Source: Central Bank of Ireland.

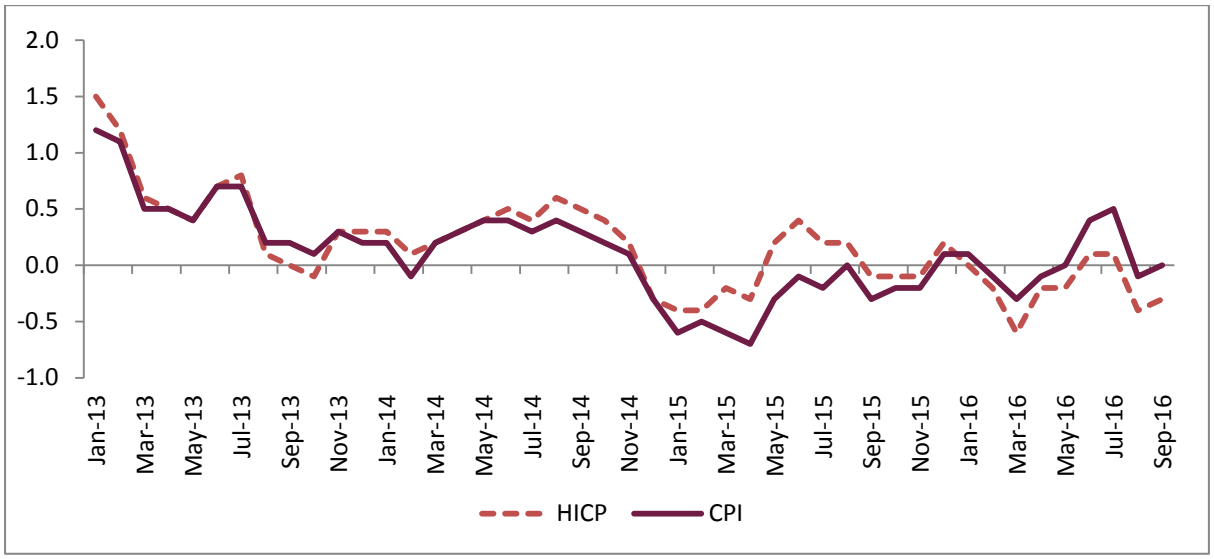
In November the Central Bank announced the results of its review into the macro-prudential measures, which were introduced in 2015. Overall, the framework is broadly unchanged; the 3.5 times ceiling on the loan-to-income (LTI) ratio remains. However, the ceiling on the loan-to-value (LTV) ratio for all first time buyers will be set at 90 per cent. This is a shift from the current requirement, which puts the ceiling at 90 per cent for loans up to €220,000 but at 80 per cent for the balance of loans above €220,000. As a result, first time buyers will be able to borrow up to 90 per cent of a value of a home, with a requirement for a 10 per cent minimum deposit.

In terms of the debt requirements of the Irish State, the funding plan for 2016 was relatively light, especially when compared with previous years. This was due to the reduced Exchequer deficit and the next bond redemption is in October 2017. Overall, €7.6 billion has been issued so far this year and the NTMA plans to issue up to €10 billion over the course of 2016. Yields continue to be particularly low; in May, €750 million of the 2022 bond was auctioned at a yield of 0.157 per cent; in September and October, the 2026 bond was released twice for €1 billion at yields of 0.33 and 0.495 per cent. The investor base for Irish bonds continues to expand: In January international investors bought 88 per cent of the bonds on offer, with the UK (32 per cent), the Nordics (13 per cent) and Germany (11 per cent) being the main participants.

Prices and Earnings

Figure 14 shows the trend in annual inflation over the last few years for both Consumer Price Inflation (CPI) and the Harmonised Index of Consumer Prices (HICP). It is clear that annual inflation was on a downward trend for much of 2013 and 2014 and has been quite subdued for much of 2015 and 2016. More recently, there was a moderate pick-up in Q2 2016 largely due to price increases in the services component. Since the Brexit vote however, inflation growth has declined back to levels seen at the start of the year, due in part to the Euro appreciating against the Pound. In Q3 of this year the average growth rate of the HICP was -0.2 per cent while for the CPI it was 0.1 per cent.

FIGURE 14 Annual Growth in CPI (%)

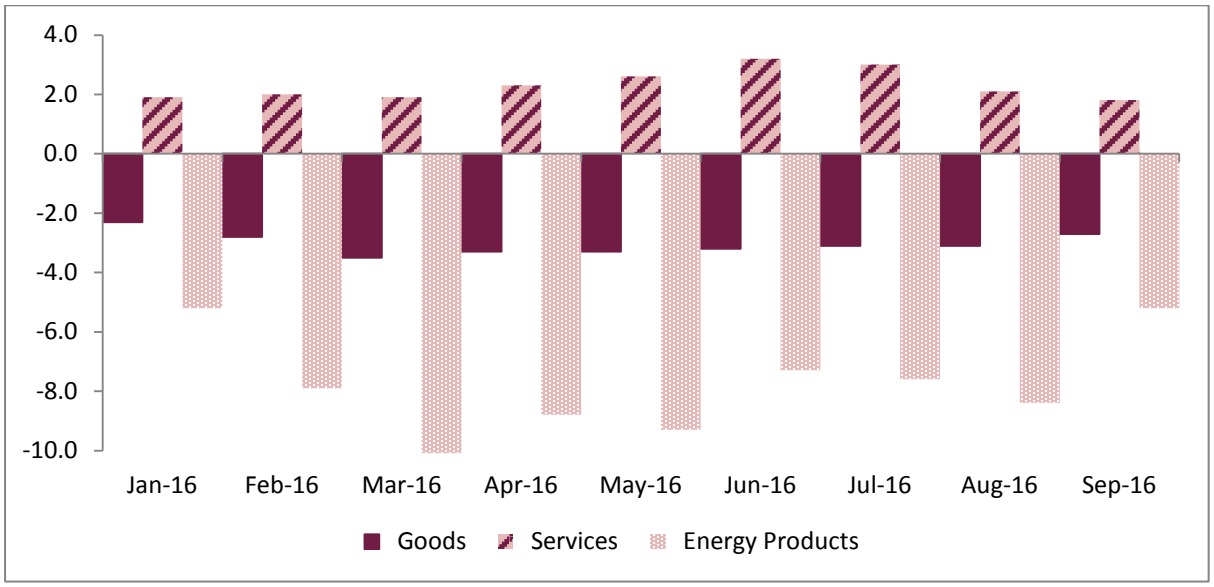


Source: Central Statistics Office.

From Figure 15 we can see the trends in annual inflation for some of the main components of the CPI in 2016. Weak energy prices are still having a significant negative impact on CPI growth. The decline in the goods component is reflecting both weak global commodity prices as well as the appreciation of the Euro against the Pound since June of this year. Much of this has been offset by a strong performance in the services component driven by annual price increases in areas such as Education, rents and restaurants and hotels.

The most recent inflation data release from the CSO shows that the Services sub-indices rose by 1.8 per cent in the year to September while the Goods component registered a decrease of 2.7 per cent.

FIGURE 15 Decomposition of the CPI into Selected Components 2016 (%)



Source: Central Statistics Office.

Our outlook for inflation for the rest of the year and 2017 remains the same as the previous *Commentary.* We expect that the improvements in the labour market should support wage increases in 2016 and 2017. As well as this, OPEC's decision to cut oil supply should provide support to moderate increases in oil prices over the next year easing downward pressure on the energy component of inflation. Consequently, we expect CPI to reach an annual average growth rate of 0.5 per cent in 2016 and 1 per cent in 2017 (Table 1).

TABLE 1 Inflation Measures

	2014	2015	2016	2017
	Annual Change			
	%	%	%	%
CPI	0.2	-0.3	0.0	0.6
Personal Consumption Deflator	1.7	0.7	1.0	1.0
HICP	0.3	0.0	-0.2	0.3

Sources: Central Statistics Office and ESRI forecasts.

The latest earnings and labour costs data from the CSO show that annual Average Hourly Earnings increased marginally by 0.2 per cent or from €21.51 to €21.55 in the year to Q3 2016. There was an increase in Average Hourly Earnings observed in nine of the 13 sectors. The sector with the highest Average Hourly Earnings was Education with a rate of €33.63, followed by the Information and Communication sector with €28.96. The Accommodation and Food sector experienced the largest increase in Average Hourly Earnings over the year,

growing by 3.1 per cent, whereas the Education sector saw the largest fall, decreasing by 2 per cent.

In terms of private and public sector wages, Average Hourly Earnings in the private sector in the year to Q3 2016 rose by 0.9 per cent and earnings in the public sector increased by 0.1 per cent in the same period.

Due to the robust performance of the economy and in particular the labour market, we expect wages to continue to increase over the forecast period. In line with our unemployment forecasts, as the labour market begins to tighten further over the forecast horizon we expect to see increasing upward pressure on wages. We therefore think that in both 2016 and 2017 we should see growth in Average Hourly Earnings of 2.3 per cent.

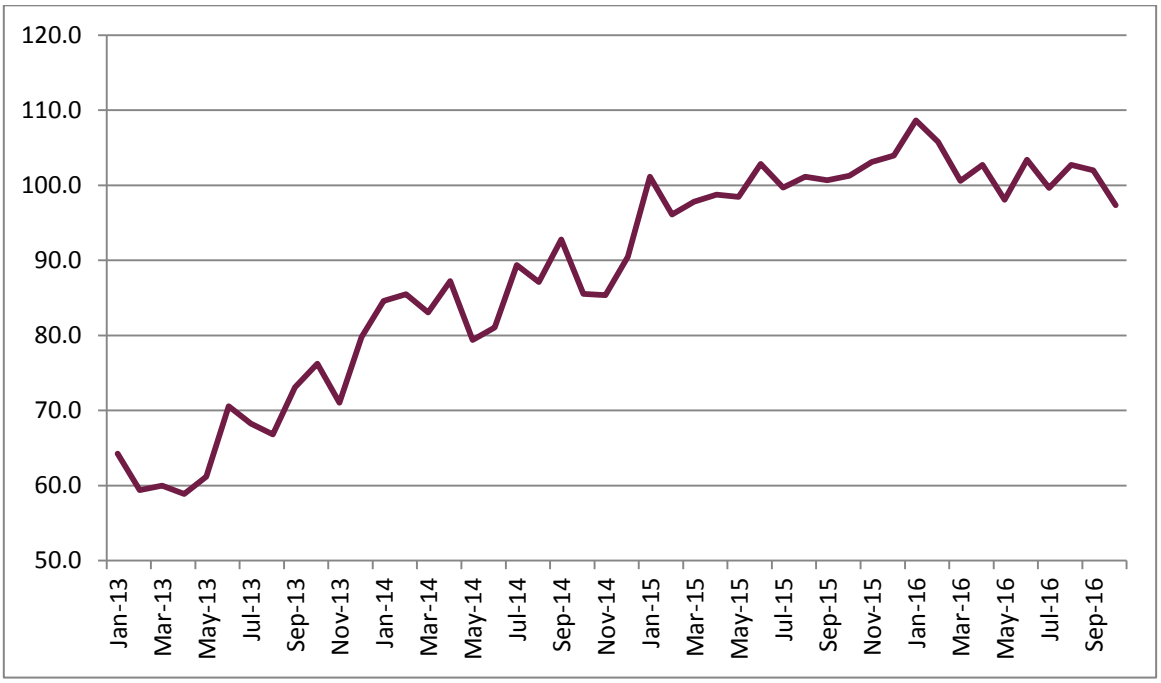
Demand

Household Sector Consumption

Household consumption continues to be one of the most important components of Irish growth in 2016. In the year to September, the 'all retail businesses' category experienced an annual rate of growth of 5 per cent, with motor vehicles, furniture and fittings and the Hospitality sector witnessing the largest increases at 12, 7 and 6 per cent respectively. This comes after an increase in consumption of 4.5 per cent in 2015.

The ESRI/KBC Consumer Sentiment indicator plotted in Figure 16 illustrates that sentiment has remained relatively static since the start of the year. A slight decline is noticeable in recent months; this may be due to the growing uncertainty concerning the impact of Brexit, however, overall sentiment levels are still quite high on a historical basis.

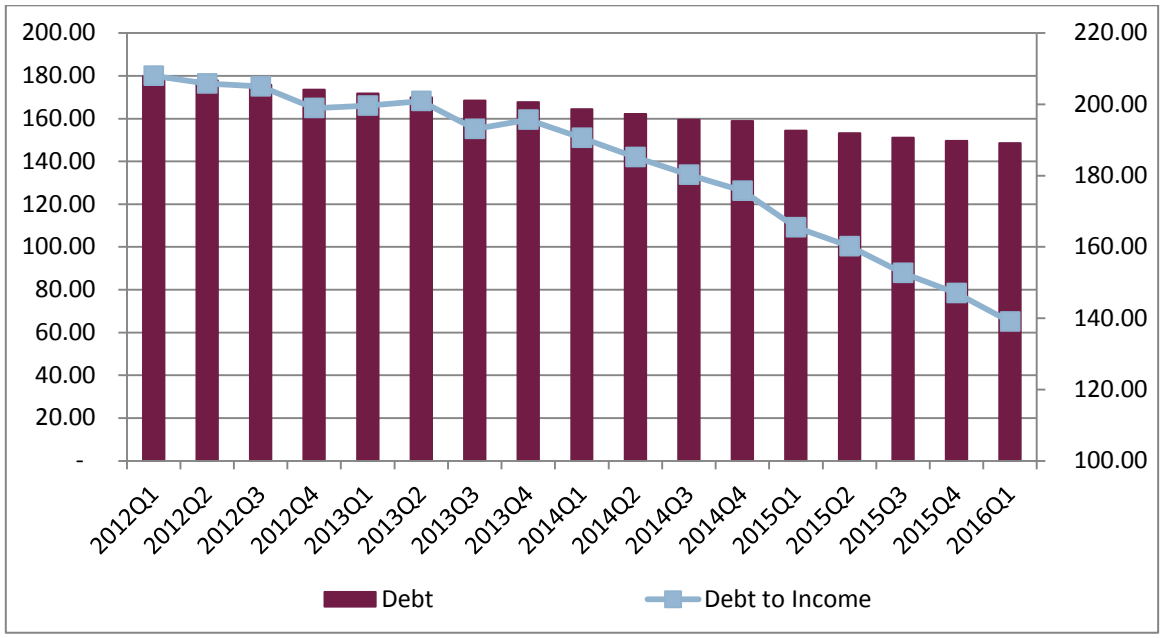
FIGURE 16 ESRI/KBC Consumer Sentiment Indicator



Source: QEC calculations.

The ongoing improvement in Irish households' balance sheets can be observed from Figure 17 as the debt-to-disposable income ratio declines in a persistent manner. This improvement in the overall financial position of households is one of the central reasons for the increases in consumption over the past two years in the domestic economy. Consequently it is, arguably the key determinant of Irish growth at present.

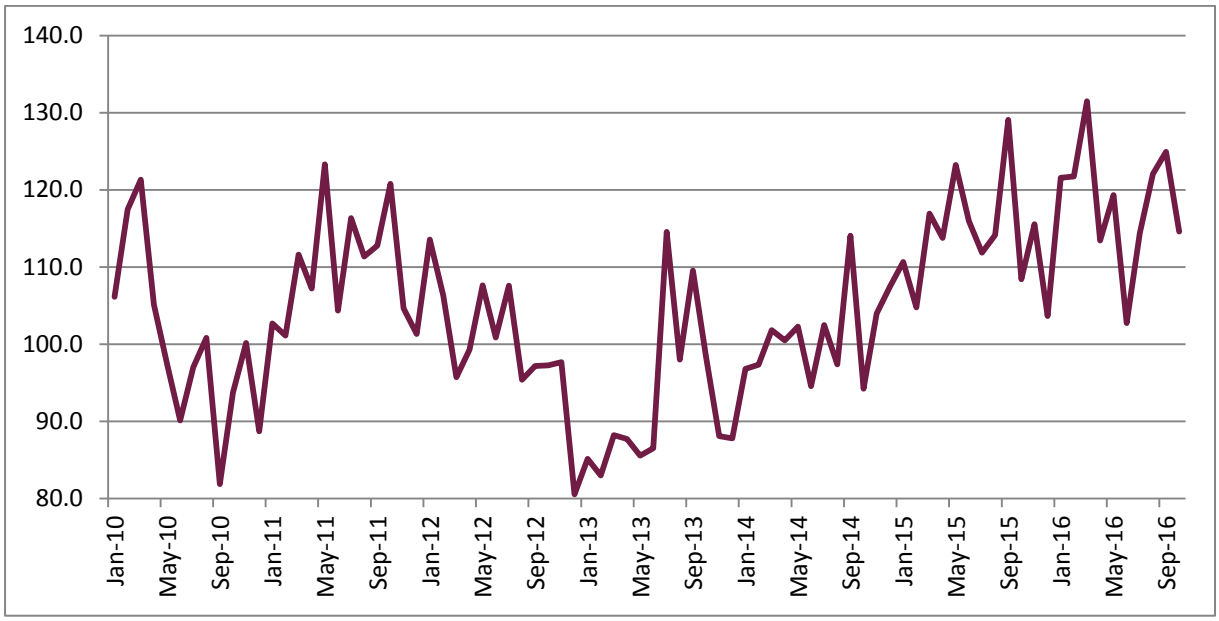
FIGURE 17 Irish Household Debt



Source: Central Bank of Ireland.

Information concerning households' intentions can also be gauged from the ESRI/Nationwide savings index, which provides a significant amount of information on savings patterns on a timely basis amongst Irish households. The overall savings index (Figure 18) shows that savings rates are trending upwards since the start of 2013.

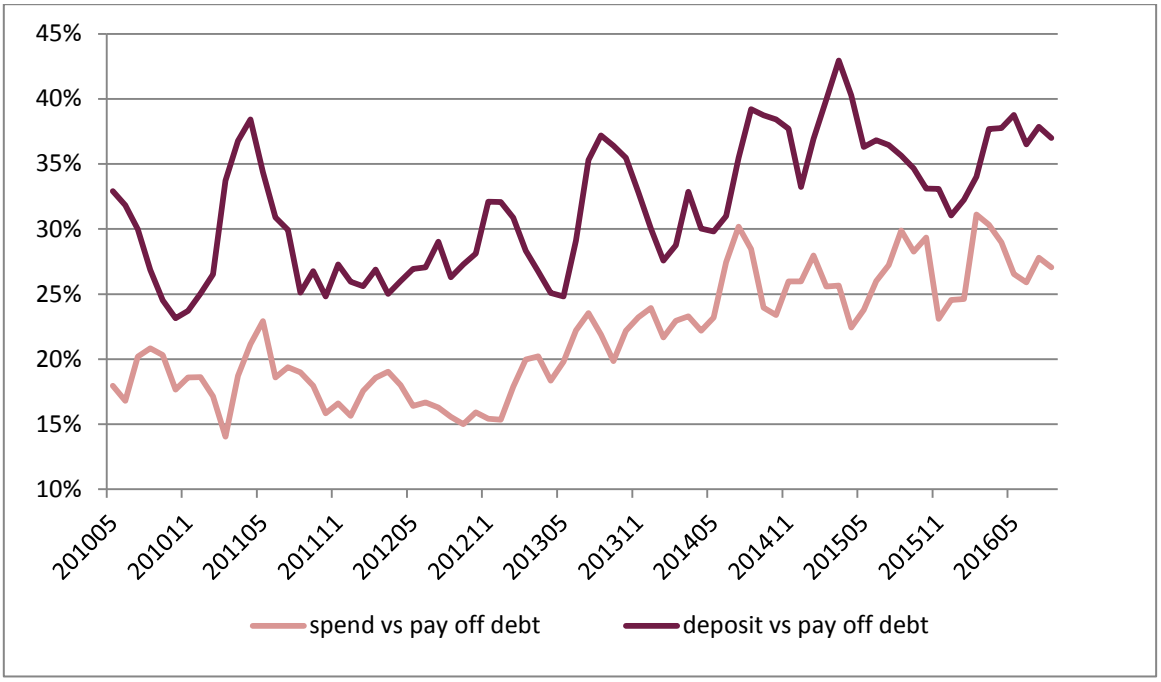
FIGURE 18 ESRI/Nationwide Savings Index



Source: Nationwide/ESRI data.

However, it is interesting to look at the responses to some of the additional questions within the survey to see what might be prompting this increase in savings. In Figure 19 we plot two series capturing the ratio of households' decision to save for spending and their decision to save for a deposit versus their decision to pay off debt. In both instances we can see that the ratios are increasing indicating that households are increasing their savings for consumption as opposed to using savings for debt reduction purposes.

FIGURE 19 Savings Preferences if had Money Left Over



Source: Nationwide/ESRI data.

While Brexit may have some marginal impact on consumer sentiment, in general given the continued improvement expected in the labour market and the ongoing strength of the Exchequer tax receipts observed so far this year, we expect growth in personal consumption to be 3.4 per cent in volume in 2016. As one of the main reasons for the present increases in consumption is the improvement observed in household balance sheets, we expect to see a further strong contribution to growth in 2017; we see no reason to change our forecast of 3.5 per cent in the volume of personal consumption.

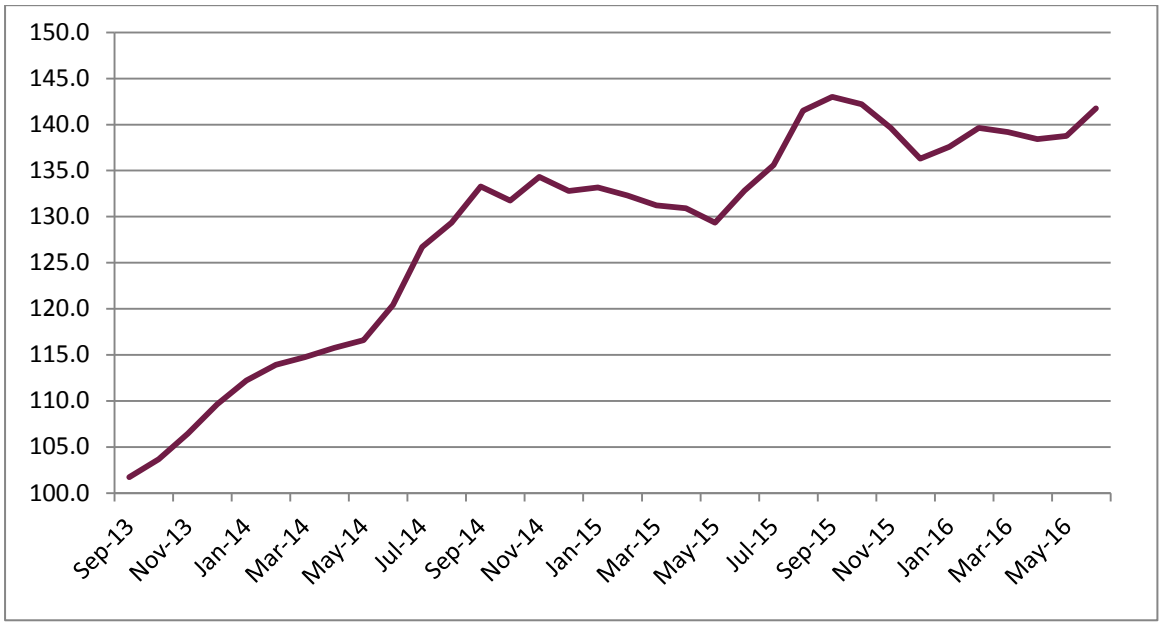
Property Market Developments

House price growth nationally increased through Q3 2016 with prices averaging annual increases of approximately 7 per cent; this compared with price increases of 4 per cent in Q4 2015. Increases in Dublin house prices, by contrast, appear to

have stabilised at approximately 4 per cent per annum since mid-2015. Rental growth continues to exceed that of house prices reflecting a shift in the tenure decisions of Irish households. The latest data from the RTB rental index indicate that rents grew by 8.6 per cent in Q3 2016.

The outlook for the domestic housing market continues to look positive as the results of the latest ESRI/AIB housing market indicator suggest (Figure 20). The index, which comprises of questions on market participants' attitudes to buying and selling property as well as expectations of house prices 12 months from now, has been trending upwards continuously since 2013.

FIGURE 20 ESRI/AIB Housing Market Index



Source: ESRI/AIB housing market indicator.

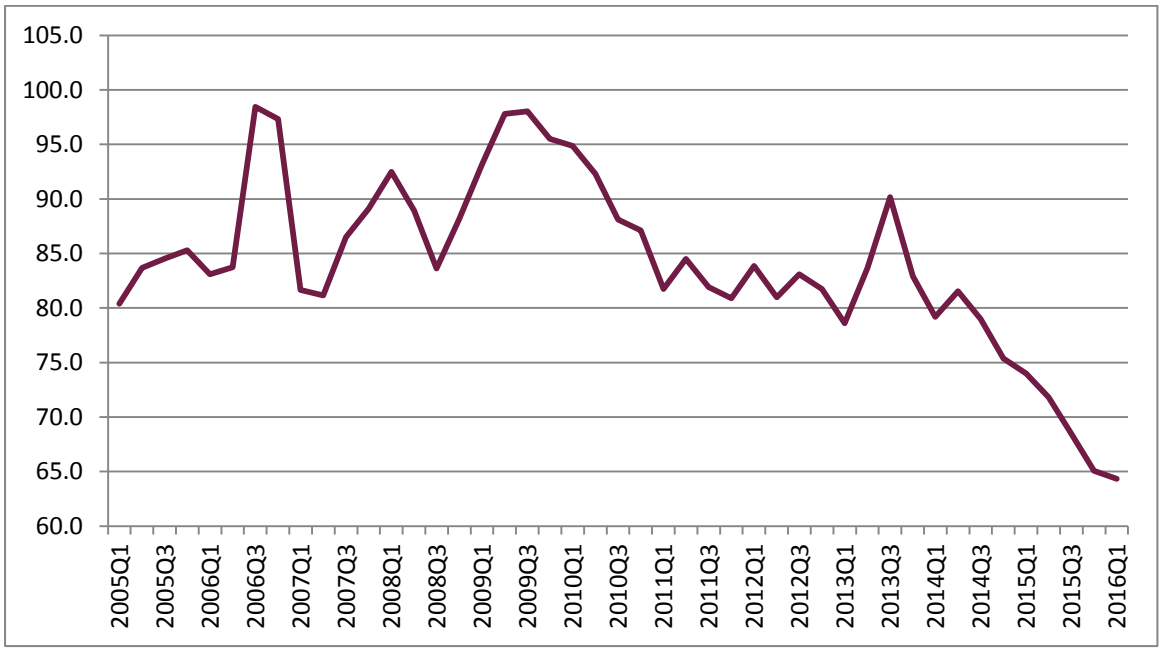
The greater relative rate of house price growth outside the Dublin area and the apparent shift in tenure decision towards renting most likely reflects the impact of the macro-prudential measures on the housing market. The measures are particularly binding in Dublin as house prices are on average higher than the rest of the country. Figure 21 plots the level of average loans approved in the Irish Financial sector since 2005.

FIGURE 21 Average Loan Level Approved (€'000)

Source: Department of Housing.

As can be seen, average loan level amounts increased significantly up to 2008 before falling thereafter. Since early 2014, loan level amounts have remained relatively static. Accordingly, it is interesting to examine the most recent relationship between the average loan level approved and house price levels. This provides an indication of the degree of household leverage in a market with persistent house price increases. Figure 22 plots the relationship for the two variables up to Q1 2016.

FIGURE 22 Ratio (%) of House Prices to Average Loan Levels Approved

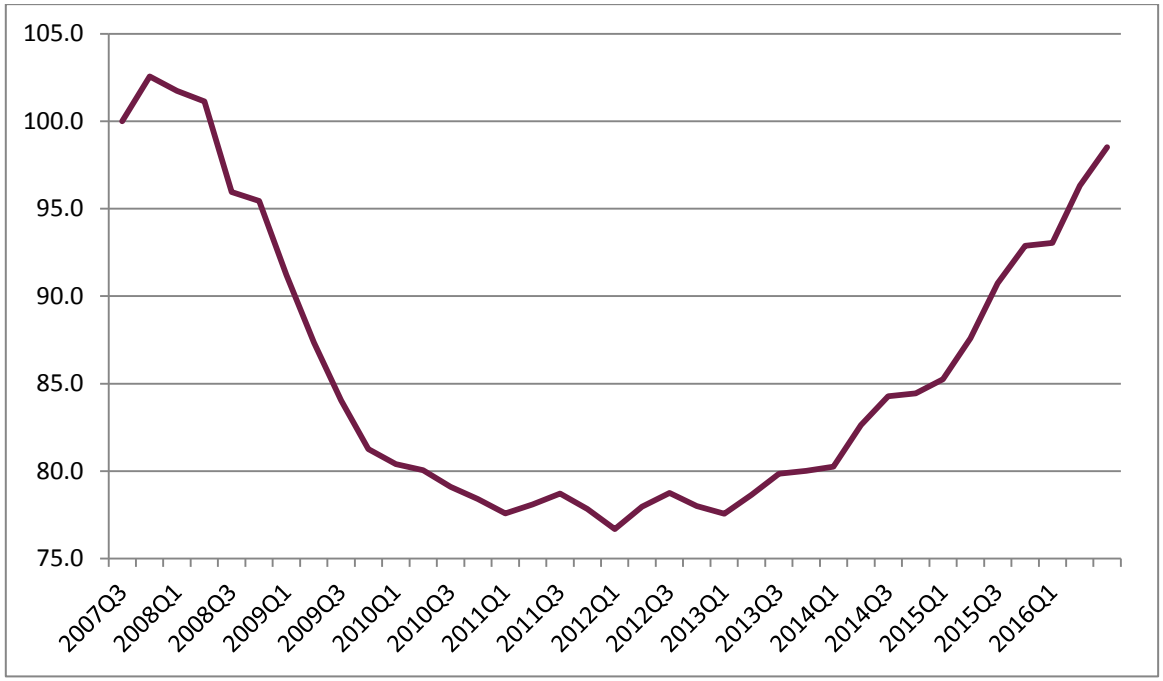


Sources: CSO, Department of Housing and QEC calculations.

The extent to which this ratio increased in the run-up to 2008 can be observed; however, what is particularly apparent from the graph is the sharp fall in the value of average loans approved relative to house prices from Q3 2014 onwards. The current ratio of loan size to house prices is the lowest in over 11 years. Therefore while house price levels are increasing in a significant fashion, it would appear that households' exposure to mortgage debt is not increasing to the same extent.

The latest data from the RTB rental index confirm that rents nationally continue to increase at a significant rate. Q3 rents increased nationally by nearly 9 per cent on an annual basis continuing the rise that has been observed since early 2013 as can be seen from Figure 23.

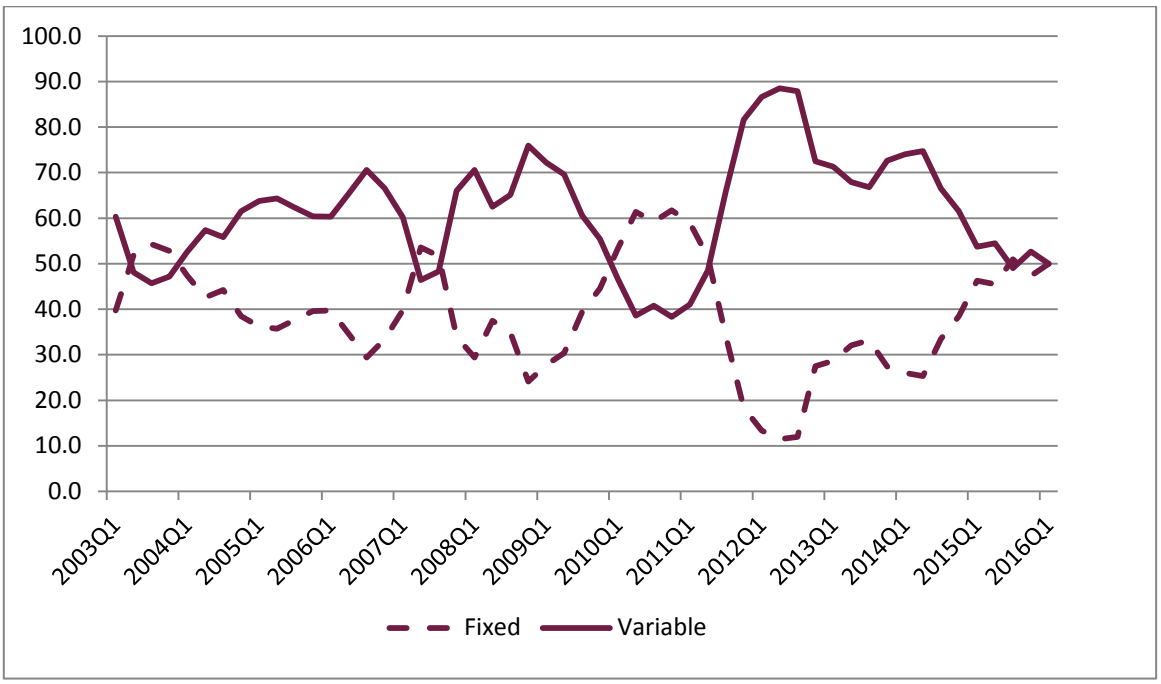
FIGURE 23 Residential Tenancies Board National Rental Index: Q3 2007 = 100



Source: Residential Tenancies Board (RTB).

Recent data from the Department of Housing concerning the interest rate choice of Irish households for new mortgages issued by Irish financial institutions reveal some interesting trends. As can be seen from Figure 24 the composition of mortgages between fixed and variable rate mortgages tends to fluctuate quite significantly. Just before house prices started to increase (late 2012) up to 90 per cent of new mortgages approved (albeit a small number) were being taken out with variable rate mortgages. The proportion of variable rate mortgages has fallen quite persistently since 2013. At present (Q1 2016) there is approximately a 50:50 split between fixed and variable rates for new mortgages in the Irish market.

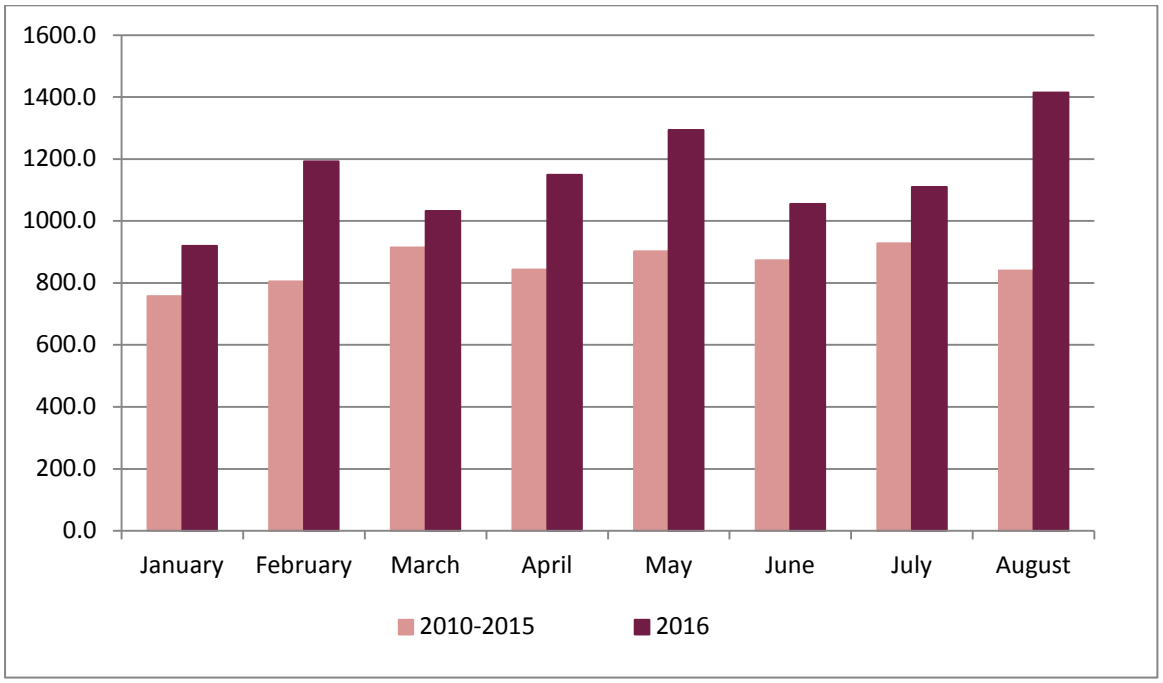
FIGURE 24 Breakdown of Interest Rate Choice of Households for New Mortgages Approved (%)



Source: Department of Housing.

Recent estimates for housing completions confirm the trend noted in the previous *Commentary* that housing supply appears to be increasing somewhat, albeit from a very low level. Figure 25 plots the monthly supply of housing for the present year and compares this with the average over the 2010-2015 time period. From the graph it is evident that for each month, the degree of supply in the present year exceeds the average over the earlier period. Accordingly we have increased our forecast for housing completions for the present year; we now believe that just over 15,000 units will be built in 2016 with 17,500 being constructed in 2017.

FIGURE 25 Monthly Levels of Housing Supply



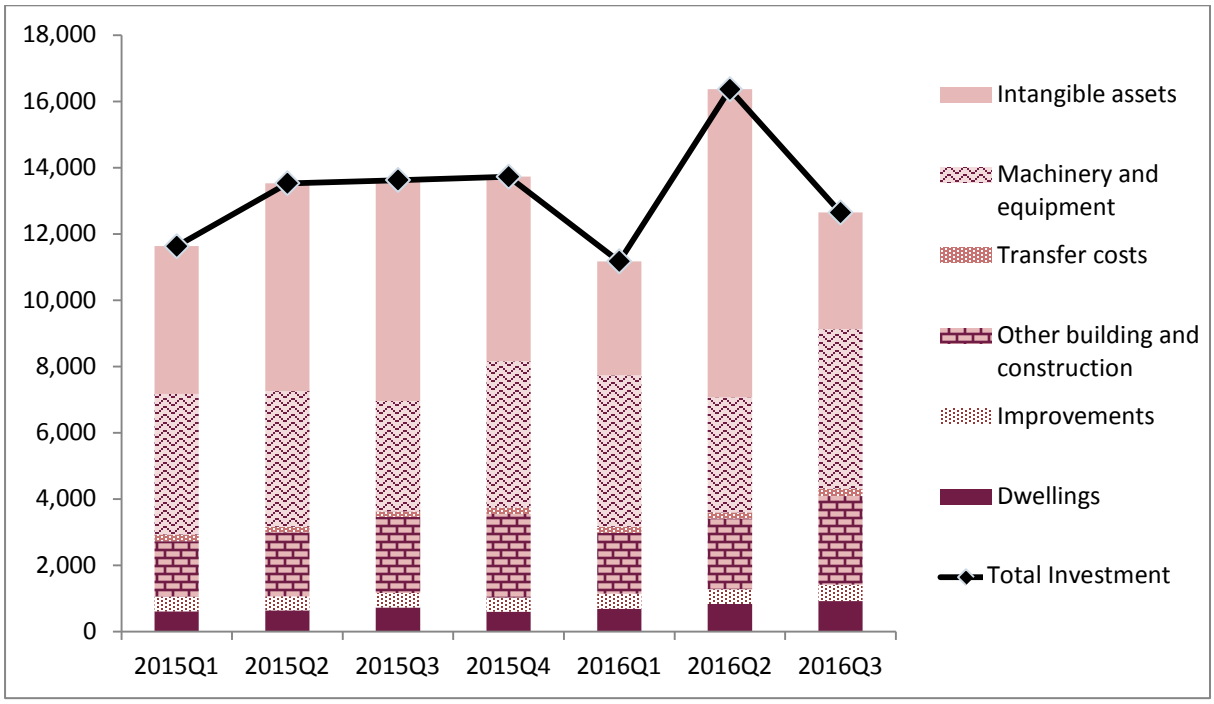
Sources: Department of Housing Planning and Local Government and QEC calculations.

Supply

Investment

Gross fixed capital formation was one of the strongest sources of growth in the Irish economy in 2015. In 2015, annual growth in gross fixed capital formation averaged 32.8 per cent. This significant growth level was largely affected by multinationals and particularly in the intangibles component of investment. Figure 26 shows the components of investment as a proportion of the total. Machinery and equipment accounted for the largest percentage in Q3 and was approximately 38 per cent of the total. The graph highlights the significant volatility present in the data and this is largely due to the movement of intellectual property of multinationals in Ireland. Growth in the intangibles component has continued to be volatile with annual growth in Q2 and Q3 of 48.2 and -47.2 per cent respectively. Due to this, it is much more informative for forecasting purposes to concentrate on the other components of investment as they are relatively more stable.

FIGURE 26 Components of Investment as a Proportion of Total.

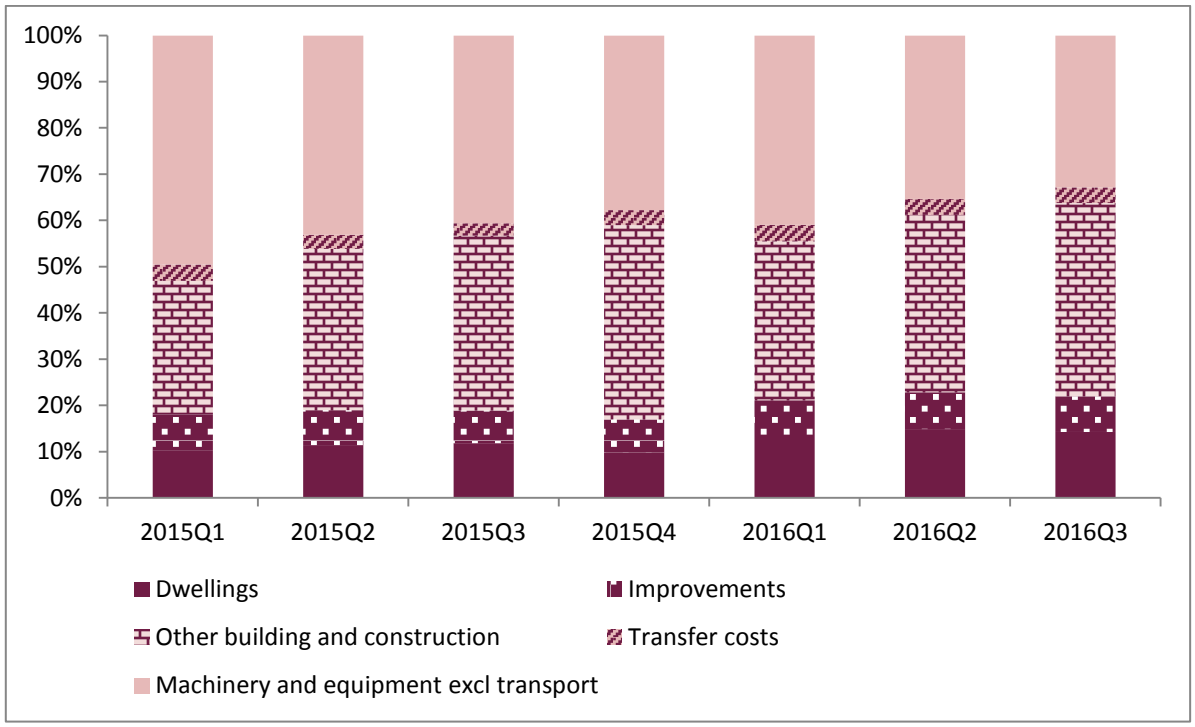


Sources: Central Statistics Office and QEC calculations

Figure 27 shows the proportions of investment for each of the components excluding the volatile intangibles and aircrafts over the last few quarters on a non-seasonally-adjusted basis.[13] In Quarter 3, other building and construction accounted for a significant proportion of total investment at 42 per cent. Dwellings accounted for approximately 14 per cent, an increase of 2 percentage points over this time last year. We believe there will be a pick-up in the supply of housing in 2016 and 2017 and we have raised our forecasts to reflect this. In particular, we forecast the number of completions to reach 17,500 units by the end of 2017. This is, however, still below the level of structural demand, therefore, supply could increase at a faster rate than we expect.

[13] A breakdown at this level is not available on a seasonally-adjusted basis as some of the components individually do not have identifiable seasonality present.

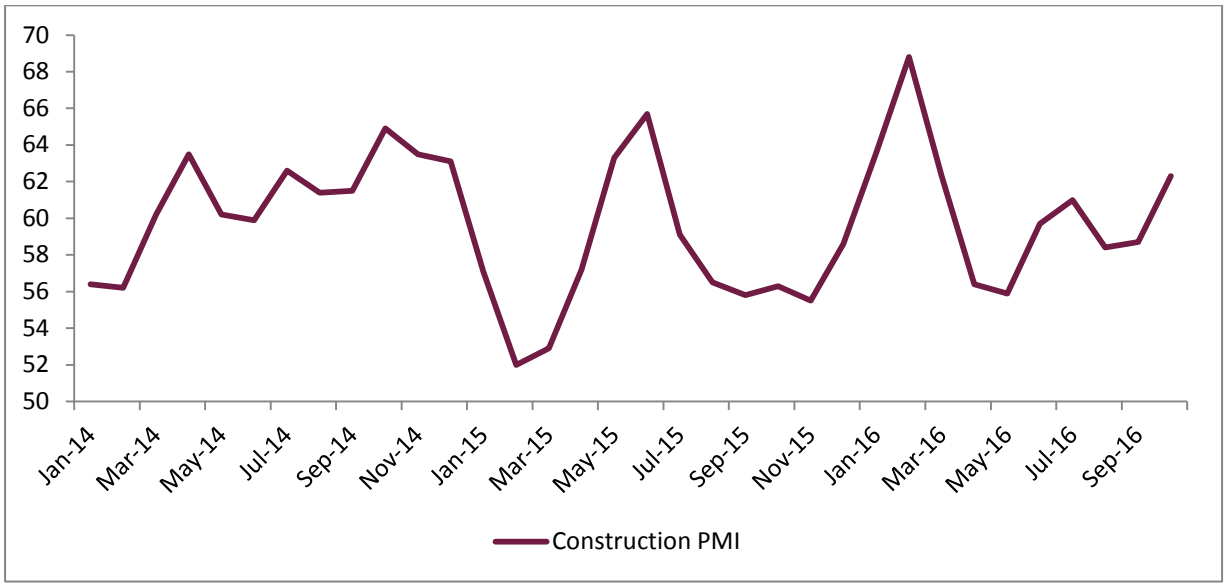
FIGURE 27 Investment in Building and Construction, and Machinery and Equipment, as Percentage of Investment Excluding Intangibles and other Transport Equipment



Sources: Central Statistics Office and QEC calculations

On the basis of the first three quarters of 2016, it is our view that the growth in building and construction will be faster than previous years. This is also supported by higher frequency Purchasing Manufacturing Index (PMI) data. Figure 28 plots the Construction PMI for Ireland. In October the overall index was 62.3, comfortably above the threshold level of 50 which indicates an expansion. Within the index, activity seems to be picking up in both commercial and housing activity with both indices trending upwards over the last year. This is also above its average reading of 56.9 over the last three years. We, therefore, estimate that the volume of growth in building and construction will be 17 per cent this year and 10.0 per cent in 2017.

FIGURE 28 Construction PMI for Ireland



Source: Markit.

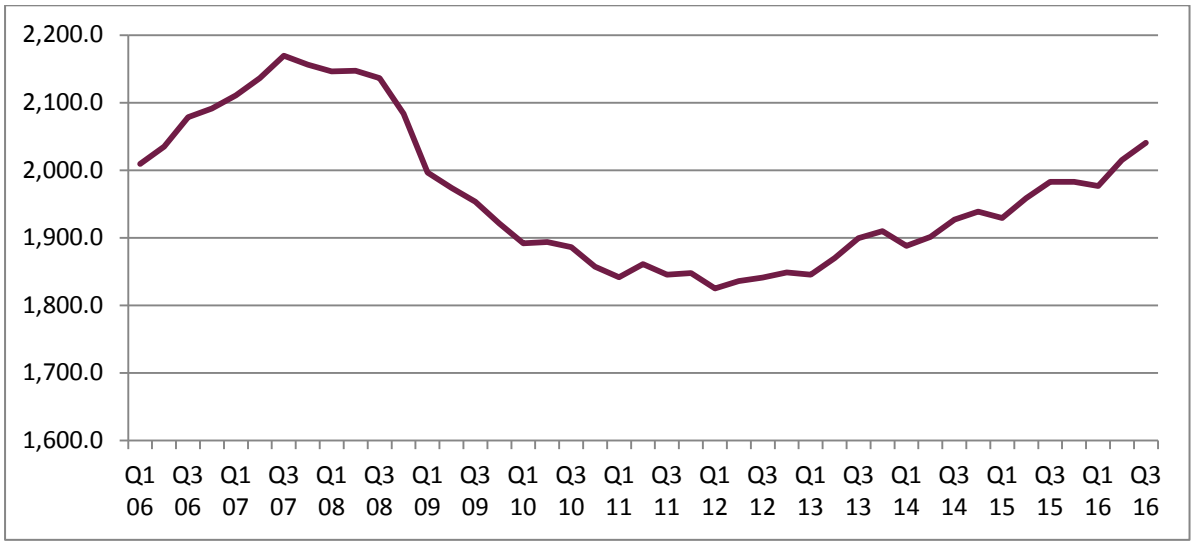
Although the growth in intangibles has been significantly volatile this year, the average annual growth rate is significantly below the level this time last year. It is unlikely that increases in intangible assets in 2016 will be on the same scale as in 2015. In the first half of the year, the growth rate of some of the other components of capital formation appear to be performing strongly. On the basis of recent trends in the investment data, we think overall investment growth will be 16 per cent in 2016, growing a further 18.7 per cent in 2017.

Labour Market

Employment

The most recent Quarterly National Household Survey (QNHS) labour market data show that employment has continued to grow in the third quarter of 2016 (see Figure 29), increasing by 2.9 per cent (57,500) in the year (i.e. since Q3 2015) to bring total employment to 2,040,500. This is the highest level of employment that has been recorded since Q4 2008. The peak in employment was reached in Q3 2007 when the numbers in work stood at 2,169,600.

FIGURE 29 Numbers in Employment: Q1 2006 – Q3 2016



Source: Central Statistics Office.

The increase in total employment over the year to Q3 2016 was made up of an increase in full-time employment of 44,800 (2.8 per cent) and in part-time employment of 12,800 (2.8 per cent). The number of employees was up by 54,100 (3.3 per cent) to 1,698,300 over the year, while the number of self-employed increased by 4,300 (1.3 per cent) to 327,400.[14]

Regarding the sectoral distribution of employment (Table 2), employment increased in 12 of the 14 NACE[15] economic sectors over the year, with the largest increases recorded in Accommodation and Food Services, Construction, Industry and Transportation. Employment declined in Administrative and Support Services and Public Administration and Defence. However, the QNHS Public Administration and Defence employment numbers need to be interpreted with caution as the Central Statistics Office (CSO) believe that the Earnings, Hours and Employment Costs Survey (EHECS) provides a more reliable source for public sector employment estimates over time. Based on the most recent EHECS data, apart from Defence, employment increased in all components of the public sector between Q3 2015 and Q3 2016: Defence experienced a small decline from 9,500 to 9,400 over the year. Overall, the largest sectors of employment in Q3 2016 were Wholesale and Retail, Industry, and Human Health and Social Work, each of which employed over 250,000 individuals. The numbers employed in the Construction sector have been growing since Q1 2014; however, the current figure of 136,700 is still less than half what the employment numbers were in this sector at its peak in Q2 2007 (273,900).

[14] The remaining 14,800 in employment (to give the full employment figure of 2,040,500) were classified as 'assisting relatives'.

[15] NACE Rev. 2.

TABLE 2 Change in Sectoral Employment between Q3 2015 and Q3 2016

	Q3 2015	Q3 2016		Change (%)
Agriculture, forestry and fishing	112.7	116.0		2.9
Industry	252.3	267.7		6.1
Construction	127.4	136.7		7.3
Wholesale and retail trade	273.8	279.0		1.9
Transportation and storage	90.0	95.2		5.8
Accommodation and food service activities	139.9	153.2		9.5
Information and communication	83.7	86.7		3.6
Financial, insurance and real estate activities	99.8	101.7		1.9
Professional, scientific and technical activities	122.6	125.3		2.2
Administrative and support service activities	68.0	66.0		-2.9
Public administration and defence	101.3	99.7		-1.6
Education	146.6	148.5		1.3
Human health and social work activities	253.4	253.7		0.1
Other NACE activities	104.8	105.4		0.6

Source: Central Statistics Office.

In relation to the occupational distribution of employment, we can see from Table 3 that most of the employment growth over the last year has been in the Process, Plant and Machine Operatives, Managers, Directors and Senior Officials, and Caring, Leisure and Other Services occupations. The Skilled Trades, Professionals and Associate Professionals and Technical occupations recorded the lowest levels of employment growth between Q3 2015 and Q3 2016. The occupations in Q3 2016 with the largest employment levels were Professionals, Skilled Trades, Associate Professionals and Technical and Elementary.

TABLE 3 Change in the Occupational Distribution of Employment between Q3 2015 and Q3 2016

	Q3 2015	Q3 2016	Change (%)
Managers, directors and senior officials	162.4	170.4	4.9
Professionals	357.7	363.0	1.5
Associate professional and technical	234.3	238.2	1.7
Administrative and secretarial	208.7	213.4	2.3
Skilled trades	315.2	316.1	0.3
Caring, leisure and other services	161.8	169.0	4.4
Sales and customer service	165.0	168.9	2.4
Process, plant and machine operatives	149.9	158.3	5.6
Elementary	216.6	224.9	3.8
Other/Not stated	11.4	18.3	60.5

Source: Central Statistics Office.

When we examine the regional distribution of employment (Table 4), we can see that the highest percentage growth in employment between Q3 2015 and Q3

2016 took place in the South West, South East, Mid-East, Mid-West and the West. The Border and Midland regions recorded the lowest rates of employment growth over the period. Outside of Dublin, the largest regions of employment in Q3 2016 were the South West, the Mid-East and the South East.

TABLE 4 Change in the Regional Distribution of Employment between Q3 2015 and Q3 2016

	Q3 2015	Q3 2016	Change (%)
Border	195.4	196.3	0.5
Midland	119.2	120.1	0.8
West	180.2	186.4	3.4
Dublin	605.6	621.5	2.6
Mid-East	231.2	239.5	3.6
Mid-West	157.4	162.4	3.2
South-East	207.4	215.1	3.7
South-West	286.5	299.1	4.4

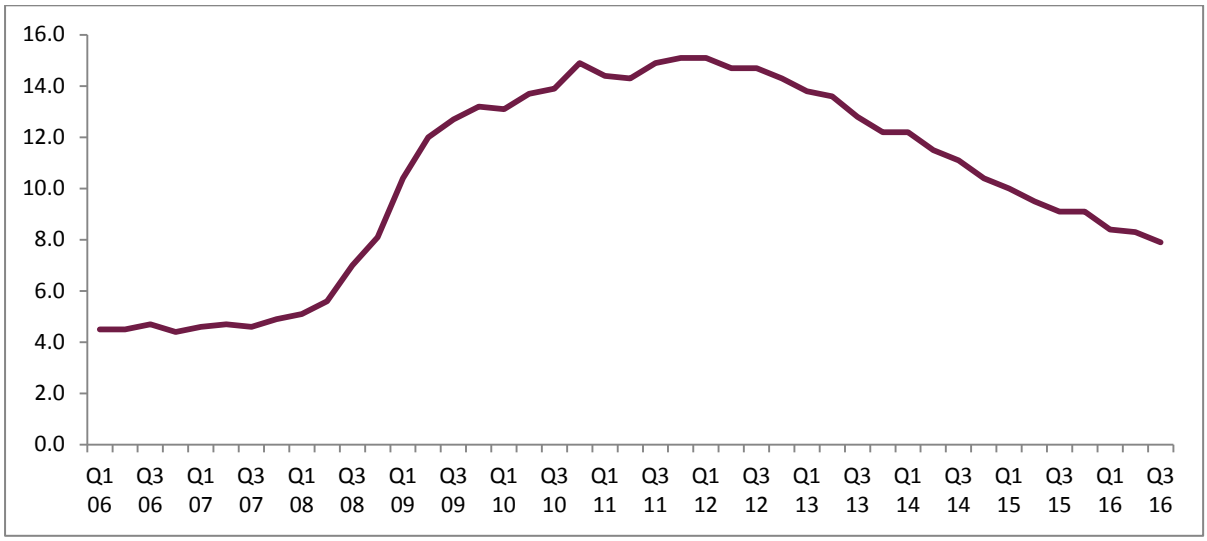
Source: Central Statistics Office.

Unemployment

Unemployment continued on its downward trajectory in the third quarter of 2016 (see Figure 30), with the seasonally-adjusted rate falling from 8.3 to 7.9 per cent between Q2 and Q3 2016. The numbers unemployed decreased by 25,300 (-12.5 per cent) in the year to Q3 2016, with the number unemployed now standing at 177,700. This is the lowest the number has been since Q4 2008, when the number unemployed was 173,800. Based on the CSO Monthly Unemployment publication,[16] the unemployment rate was 7.3 per cent in November. Since Q3 2015, male unemployment has declined by 13.4 per cent (17,100), while female unemployment has declined by 10.8 per cent (8,200).

[16] This measure is primarily based on QNHS data, with Live Register data used to adjust trends for periods for when no QNHS data are available.

FIGURE 30 The Unemployment Rate: Q1 2006 – Q3 2016



Source: Central Statistics Office.

The long-term unemployment rate has also declined over the year, falling from 5 per cent in Q3 2015 to 4.2 per cent in Q3 2016. Long-term unemployment now accounts for 52 per cent of total unemployment compared to 54.1 per cent in Q3 2015. While this decline is a positive development, long-term unemployment is still accounting for over 50 per cent of total unemployment. Depending on the characteristics of those who are long-term unemployed, this may result in a slowdown in the fall in the unemployment rate over the next year or so. To take a closer look at this issue, we examined the CSO Quarter 2 2016 microdata to identify the gender, age, education and previous employment sector profiles of the long-term unemployed.

As can be seen from Table 5, over 70 per cent of the long-term unemployed are males. Regarding their age distribution, over two-thirds are aged between 25 and 54, with almost 50 per cent aged between 25 and 44.

TABLE 5 Gender and Age Profile of the Long-Term Unemployed: Q2 2016

	%
Gender	
Male	71.1
Female	28.9
Age	
15-19	2.2
20-24	8.9
25-34	24.2
35-44	24.7
45-54	23.7
55-64	15.8
65-74	0.7
	100

Source: Central Statistics Office QNHS Q2 2016 Microdata.

When we look at the education profile of the long-term unemployed (Table 6), we can see that almost 70 per cent have a Leaving Certificate or lower qualification, with only just over 20 per cent possessing a third-level or higher qualification.

TABLE 6 Educational Attainment of the Long-Term Unemployed: Q2 2016

	%
Educational Attainment	
Primary or Below	14.0
Lower Secondary	19.6
Upper Secondary	28.3
Post Secondary Non-Tertiary	15.1
Third-Level Non-Honours Degree	7.6
Third-Level Honours Degree or Above	13.0
Other/Not Stated	2.6

Source: Central Statistics Office QNHS Q2 2016 Microdata.

In relation to their previous sector of employment (Table 7), the first interesting point to note is that just over 42 per cent of long-term unemployed individuals have not worked in the last eight years. For those who have worked at some stage in the past eight years, Construction was the main sector that they were previously employed in (12 per cent), followed by Wholesale and Retail (9.9 per cent), Industry (8.2 per cent), and Accommodation and Food Storage (4.8 per cent).

TABLE 7 Previous Sector of Employment of the Long-Term Unemployed: Q2 2016

	%
Eight Years or More Since Person Last Worked	42.4
Agriculture, Forestry and Fishing	1.1
Industry	8.2
Construction	12.0
Wholesale and Retail	9.9
Transportation and Storage	3.3
Accommodation and Food Storage	4.8
Information and Communication	1.4
Financial, Insurance and Real Estate	0.9
Professional, Scientific and Technical	2.8
Administrative and Support Services	3.9
Public Administration and Defence	1.6
Education	1.7
Health and Social Work	3.6
Creative, Arts and Entertainment	0.9
Other Services	1.1
Unknown	0.5
	100.0

Source: Central Statistics Office QNHS Q2 2016 Microdata.

Finally, when we examined the duration for which long-term unemployed people have been unemployed (Table 8), we found that just over 70 per cent were unemployed for two years or more, with 46.6 per cent of these individuals unemployed for four years or more. We know from research that being unemployed for 12 months or more can have long-term scarring effects on an individual, which would suggest that those who have been unemployed for four years or more will find it very difficult to find employment and reintegrate back into the labour market.

TABLE 8 Duration of Unemployment for the Long-Term Unemployed: Q2 2016

	%
12-17 months	18.8
18-23 months	10.6
24-47 months	24.0
4 years or longer	46.6
	100.0

Source: Central Statistics Office QNHS Q2 2016 Microdata.

Labour Market Forecasts

Table 9 sets out our forecasts for the labour market for 2017. Based on the most recent QNHS labour market results (Q3 2016), and our expectations for the

performance of the Irish economy as set out in the *Commentary*, we forecast further increases in the labour force in 2017. We are also forecasting that the total number of people in employment will continue to grow, albeit at a slower pace in the second half of 2017. We expect unemployment to continue to fall as well, but again for the pace of the decline to moderate in 2017. Thus, we are forecasting the unemployment rate to be 7.0 per cent for 2017, with the total number of people in employment standing at 2,058,000.

TABLE 9 Labour Market Forecasts

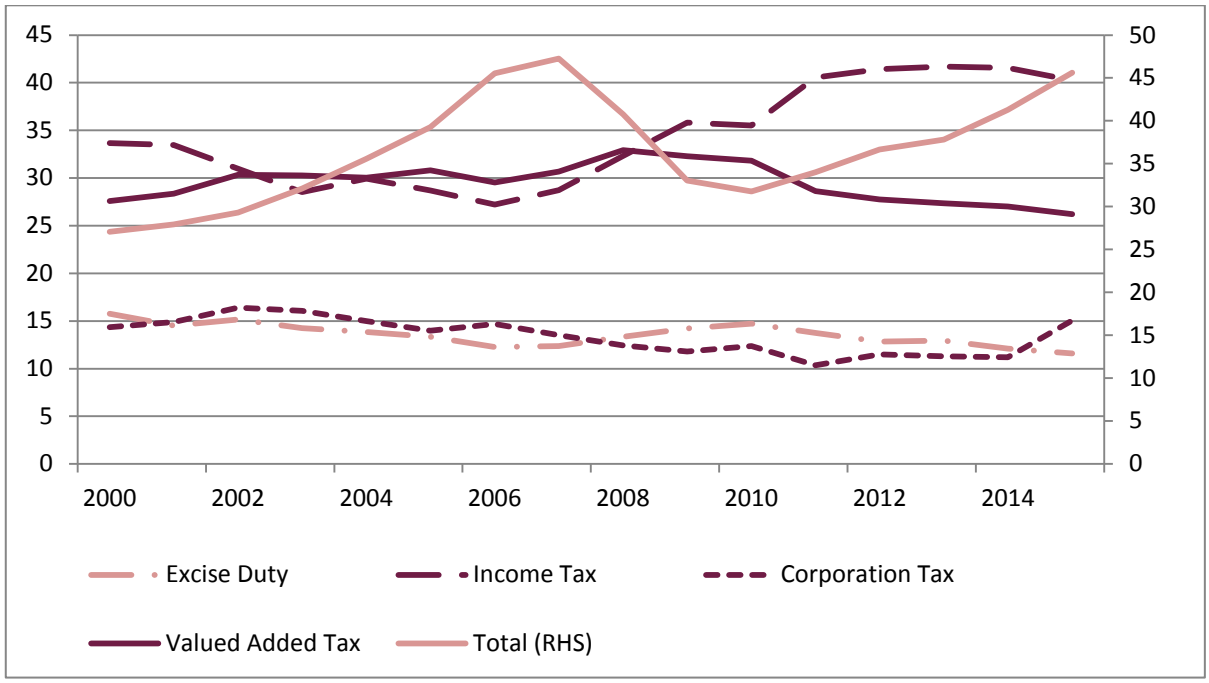
	2012	2013	2014	2015	2016	2017
Agriculture	86	107	109	110	113	114
Industry:	336	343	348	374	396	409
Construction	102	102	109	125	136	142
Other Industry	234	241	239	248	260	267
Services:	1,414	1,430	1,453	1,474	1,504	1,535
Total Employment ('000)	1,835	1,880	1,914	1,964	2,018	2,058
Employment Growth Rate (%)	-0.5	2.4	1.8	2.6	2.8	2.0
Unemployed	316	282	243	204	175	154
Reduction in Unemployment (%)	-0.3	-10.7	-14.0	-16.1	-14.0	-12.0
Unemployment rate	14.7	13.1	11.3	9.4	8.0	7.0
Labour Force	2154	2163	2157	2167	2193	2212

Source: Central Statistics Office and ESRI Forecasts.

Public Finances

The public finances continue to improve with most of the major tax headings likely to register growth in 2016. This follows significant increases in overall Exchequer receipts in 2015 and 2014 of 10 and 9 per cent respectively. Figure 31 plots the total tax take over the period 2000-2015 along with the percentage contribution coming from the four major subheadings; income tax, corporation tax, VAT and excise duty.

FIGURE 31 Total Tax Take (€ billion) and Contributions from Four Major Sub-Components (%)



Source: QEC calculations.

The significant fluctuations in the total tax are evident, with revenues rising sharply up to 2007 before declining significantly thereafter. The recovery in the Exchequer taxation receipts in 2010 coincides with the proportion of income tax becoming larger with the contribution from VAT returns declining somewhat over the 2008-2015 period. This may be attributable to the role increases in income taxation played in stabilising the public finances after 2007, while the decline in construction-related activity would have impacted on the relative importance of VAT receipts. Corporation tax, which experienced a significant increase in 2015 can now be seen to contribute its average rate in the 2000-2007 period of approximately 15 per cent.

As 2016 has progressed and particularly during Q3 some concerns have been expressed about the level of the tax take in 2016. The strong increase in particular items such as corporation tax in 2015 has given rise to the concern that receipts may fall back in 2016. In Table 10 the increase of individual taxation headings for the year to date is presented for each month of the present year.

TABLE 10 Changes in Individual Taxation Items for the Year to Date (%)

	Excise Duty	Income Tax	Corporation Tax	VAT	Total
January	28.7	8.7	-51.9	6.6	7.3
February	21.6	8.7	-6.3	1.8	7.1
March	29.3	2.7	17.9	2.6	6.4
April	28.7	6.2	20.8	3.4	9.1
May	30.9	5.7	9.3	5.5	9.0
June	29.2	5.6	15.0	3.7	9.2
July	24.7	5.4	13.7	4.2	8.5
August	19.4	4.2	5.8	3.9	6.2
September	16.3	4.1	5.4	5.1	5.7
October	15.2	4.2	0.6	4.7	4.7
November	14.9	4.4	3.3	4.7	5.0

Source: Department of Finance.

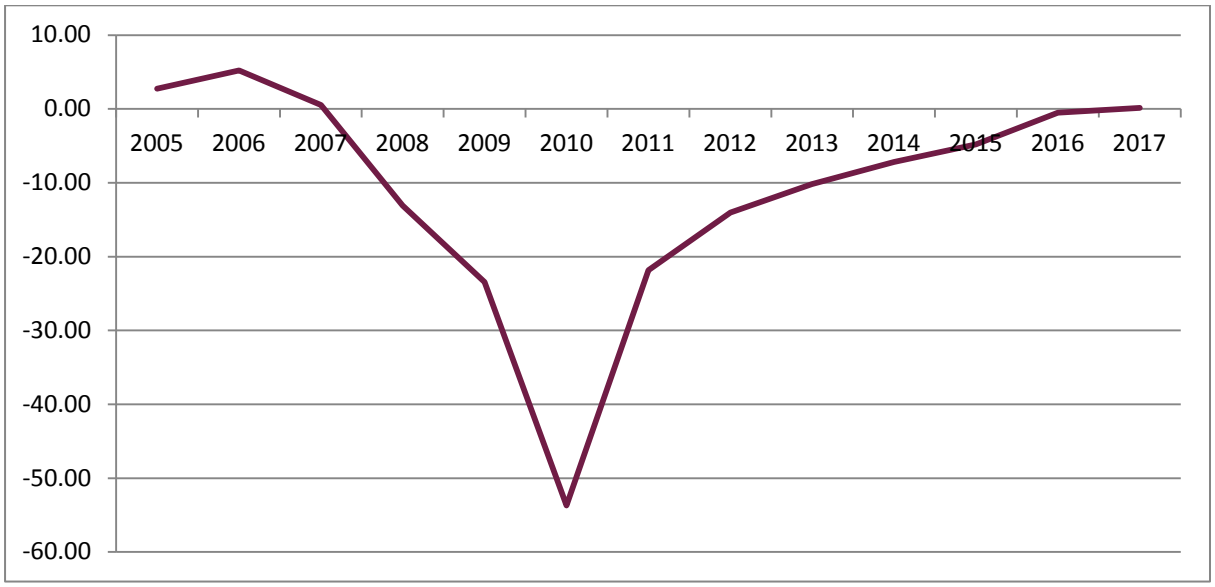
From the table it can be seen that while the increase in taxation receipts is moderating through the year, overall revenues are still set to experience growth of approximately 4 per cent for the year. Overall, we believe total Government current and capital receipts will increase by 4.2 and 1.6 for 2016 and 2017 respectively.

One-off items[17] in the lead-up to Budget 2016 increased the level of government expenditure allocated to the year 2015. Consequently, our expectation is that the level of expenditure in 2016 will be lower than in 2015. In 2017 our expectation is that the increasing upward pressures on government expenditure will see both current and capital expenditure increase by 1 per cent.

On this basis, the general government deficit should fall to €500 million this year, having been over €4 billion in 2015. For 2017, we expect to see a mild Government surplus of approximately €143 million. Figure 32 charts the path of the general government balance (excluding the cost of bank bailout) over the past 12 years.

[17] Expenditure in 2015 was 'inflated' by a EuroStat ruling in 2016 which indicated that a preference share conversion in the nationalised AIB should be classified as a government expenditure. The transaction, in December 2015, yielded a €1.6 billion dividend for the State.

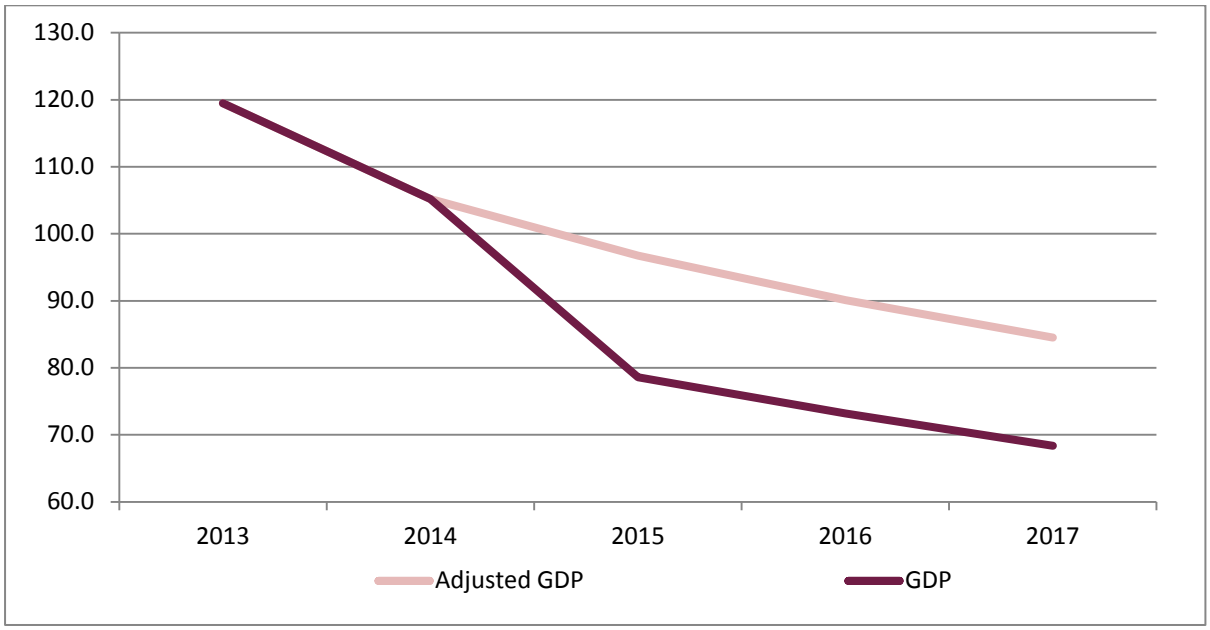
FIGURE 32 Irish General Government Balance: 2005-2017 (€ billion)



Source: QEC calculations.

In Figure 33, we plot the debt-to-GDP ratio over the period 2013 to 2017. As suggested in the previous *Commentary*, we present two sets of ratios; one with the official GDP series and one with the estimated series for 2015. It is important to use the estimated series given the inflated nature of the 2015 official GDP figure. Calculating the important debt-to-GDP fiscal metric with the official GDP series arguably suggests that the domestic economy is better able to sustain present debt levels than it actually is. Based on the adjusted series, we expect to see the debt-to-GDP ratio fall to just under 85 per cent in 2017.

FIGURE 33 Alternative Debt-to-GDP Ratios (%)



Source: QEC calculations.

General Assessment

Notwithstanding a significant degree of uncertainty owing to both international trade and national accounting considerations, the Irish economy still looks set to experience significant real growth in 2016 and 2017. As has been noted since the start of 2016, domestic sources of growth are now the main contributors to the overall performance of the economy and the strong expected increases in both investment and consumption will result in GDP growing by 4.2 per cent in 2016 and 3.5 per cent in 2017. One issue of note with respect to changes in investment is the large role now played by variations in the intangible assets category, which is closely associated with activities in the multinational sector. To put the recent Irish performance in an international context, between 2013 and 2016 the European Union and the Euro Area grew by an annual average of 1.2 and 1 per cent respectively, whereas the Irish economy grew by 4.8 per cent for the same period.[18] This will ultimately result in the unemployment rate falling to 6.7 per cent by the end of 2017.

The most significant international development to emerge for the Irish economy in 2016 is the outcome of the Brexit referendum. What is increasingly apparent at this stage is that it may take some time before the necessary trade arrangements are concluded. Therefore, before such arrangements are finalised, variables such as exchange rates, stock market returns, producer and consumer sentiment may continue to display heightened volatility. This, inevitably, impacts on our assessment of the trade performance of the Irish economy. An additional development over the past quarter has been the increased commentary centering on the likelihood of a 'hard Brexit' policy option by UK authorities. In particular, it would appear the prospect of the UK remaining in the Single European Area (SEA) after Brexit is looking less likely. Bergin et al. (2016),[19] using the new macro-econometric model COSMO, examine the possible implications for the Irish economy of three different trade outcomes from any Brexit negotiations; the results confirm that the Irish economy will be particularly adversely affected by these different outcomes. Overall, Bergin et al. estimate that the Irish economy, over the longer run, will be between 2.3 and 3.8 per cent below what it would otherwise be due to Brexit.

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18 Note this includes our estimate of 5.5 per cent for the Irish economy in 2015 as opposed to the official estimate of 26 per cent.

19 'Modelling the Medium to Long-Term Potential Macroeconomic Impact of Brexit on Ireland', Bergin et al. (2016). ESRI Working Paper No. 548, November.

The policy agenda of the incoming administration in the United States is also likely to exacerbate the downside risk facing Irish trade. In particular, the possibility of greater trade hostility between the United States and China and the prospect of greater US protectionism in general would certainly damage the global economy. However, until we have greater clarity on the incoming administration's policy priorities, it is still too early to assess the impact of these policy issues.

The growth performance of the Irish economy in 2016 is notable given the degree of international uncertainty which arose during the year; ongoing concerns about the stability of the Chinese economy grew sharply in the latter half of 2015. While some of the more pessimistic assessments of the Chinese economy have not materialised, it is evident that most international agencies attach a substantial downside risk to their assessments of Chinese growth in 2017. This reflects the challenges befalling the Chinese economy as it experiences ongoing substantial changes; moving from export to domestic-led growth, from manufacturing growth to services-based growth, and generally transitioning from being high to a lower growth economy. Although the direct impact on Ireland from a slowdown in China would be small, we are likely to experience a more significant impact on the economy through the slowdown affecting our major trading partners such as the US and the UK who have more direct exposure to China.

Overall, in light of the greater uncertainty, we have modified down our outlook for the Irish traded sector in 2017. This results in our outlook for GDP in 2017 being slightly less than that presented earlier in the year.

Given the strong rates of productivity growth and falling levels of unemployment in the domestic economy at present, it would appear that the Irish economy is at or is very near to its potential level of output. From the public finances perspective, the most significant outcome of the recent growth performance is the likelihood of a balanced budget in 2016 with the prospect of a modest surplus in 2017. This represents an impressive improvement in the budgetary position, given the difficulties with the public finances experienced since 2008.

The recent budgetary process was characterised by a significant increase in political oversight, especially given the establishment of the Committee for Budgetary Scrutiny. In many respects this resulted in a budgetary package which was arguably more predictable than previous years and which reflected the incoming Government's commitment on the one-third / two-thirds allocation of the available fiscal space between reductions in taxation and increases in expenditure. In the Autumn *Commentary* we outlined that, given the ongoing, positive growth performance of the economy, a neutral fiscal stance was the

most appropriate position to take at this point. The actual budgetary stance was broadly in line with this. Our forecasts suggest that the budget is likely to be in balance in 2016 with a mild budgetary surplus possible in 2017. From an overall macro perspective, running a mild budgetary surplus in 2017 constitutes prudent fiscal policy at a time when the Irish economy is set to operate at its full potential level.

In a Special Article to this *Commentary* Savage et al. provide the customary analysis of the distributive impact of the budget. Under a baseline budgetary policy which is neutral in distributional terms, the ESRI tax-benefit 'Switch' model is used to measure the distributional impact of Budget 2017. The impact of policy as announced in Budget 2017 is compared with policy as announced in Budget 2016. This is then termed a 'Budget-to-Budget' comparison. The model is based on the CSO Survey on Income and Living Conditions. For most income groups, the impact of Budget 2017 changes is rather small. The greatest gains are seen in the lowest income quintile – the poorest section of the population. On a Budget-to-Budget basis, the gain is about three-quarters of 1 per cent, or about half of that level on a year-on-year basis. For other income groups, changes are very close to zero on a year-on-year basis, with small gains (close to 0.2 per cent) on a Budget-to-Budget basis. Overall, it would appear that Budget 2017 is close to distributionally neutral overall, but with some additional resources targeted towards those on the lowest incomes.

In the previous *Commentary*, a significant amount of attention was devoted to deriving an output-based estimate of growth for the Irish economy in 2015. This arose due to the exceptionally large official estimate of GDP released by the Central Statistics Office (CSO) for that year. In the present *Commentary* we continue to use the estimated level of activity as opposed to the official estimate for 2015. While this does not have implications for the forecast growth rates of the economy in 2016 and 2017, it is particularly relevant in the context of different ratios such as the debt-to-GDP ratio or the current account balance, both of which are expressed in terms of the level of GDP.

The recent *Economic Outlook* also raised significant question marks about the ability of the domestic financial sector to meet the future requirements of the supply side of the Irish housing market. In particular, Duffy et al. (2016),[20] using a recently developed model, forecast the future structural demand for housing. The forecasts of the structural demand for housing are closely related to demographic trends. Using COSMO, the financing requirements associated with

[20] 'Demographic Change, Long-Run Housing Demand and the Related Challenges for the Irish Banking Sector', Duffy et al. (2016). ESRI Ireland's *Economic Outlook*.

this level of housing both in terms of mortgage and construction credit are also forecast over the same period. The results demonstrate that the Irish banking sector will have to experience significant growth in terms of credit provision over this period if this level of activity is to be funded. Of course any substantial increase in credit provision in the domestic context does give rise to the possible emergence of another credit-fuelled bubble. It is in this context that macro-prudential policy will be especially important in safeguarding against such an outcome.

The latter half of 2016 has seen a number of high profile industrial disputes centering on the wage claims of certain trade union and employee representative groups. Many of the disputes are concerned with pay issues prompted by the emergency measures taken to stabilise the public finances. Central to any assessment of public sector wage claims, in particular, is an understanding of the differential between public sector and private sector wage levels in the Irish economy. The Irish economy being one of the most open economies in Europe and the OECD is, accordingly, particularly sensitive to changes in relative wage levels and costs. Therefore any changes in the non-traded sector of the Irish economy can have significant implications for the traded sector. While there have been a number of studies over the years which have sought to quantify the public-private sector pay premium, the relevant literature has been characterised by a wide dispersion of estimates. It is fair to suggest that the lack of clarity and consistency in the approaches adopted to estimate the relationship will have resulted in complicating the policy discussion. Consequently, it is important that any assessment of this crucial wage dynamic in the Irish economy should strive to generate a reliable estimate of the public-private sector pay premium and that the estimate be based on a rigorous methodology consistent with economic theory.

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	114.3	70.9	55.5	195.5	8.2	4.0	211.4	5.6	3.0	223.2
Tourism	3.7	18.2	17.3	4.3	6.1	5.0	4.6	5.0	4.0	4.8
Other Services	101.7	15.4	11.4	117.3	13.8	10.5	133.5	11.2	8.0	148.5
Exports Of Goods and Services	219.8	44.3	34.4	317.2	10.2	6.4	349.6	7.7	5.0	376.7
FISM Adjustment	0.0			0.0			-0.3			-0.3
Adjusted Exports	219.8	44.3	34.4	317.2	10.1	6.4	349.3	7.7	5.0	376.3

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	4.1	12.3	5.2	4.6	38.0	38.0	6.3	19.0	5.1	7.5
Other Building	7.7	15.8	9.9	8.9	12.4	7.5	10.0	18.6	13.5	11.8
Transfer Costs	0.7	6.7	-2.1	0.8	8.2	3.0	0.9	11.3	6.0	1.0
Building and Construction	12.5	14.1	7.7	14.2	20.4	17.0	17.1	18.4	10.0	20.3
Machinery and Equipment	27.1	47.1	44.2	39.9	3.8	1.7	41.4	17.2	14.7	48.5
Total Investment	39.6	36.7	32.7	54.1	8.2	5.6	58.5	17.6	13.4	68.8

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	3.3	-0.9	0.0	3.3	2.5	0.1	3.4	3.5	0.1	3.5
Non-Agricultural Wages	73.4	5.7	4.2	77.6	5.1	4.0	81.6	4.4	3.6	85.2
Other Non-Agricultural Income	15.3	15.2	2.3	19.0	10.7	2.0	21.0	2.0	0.4	21.4
Total Income Received	92.1	7.1	6.5	99.9	6.1	6.1	106.0	3.9	4.1	110.1
Current Transfers	23.7	-2.6	-0.6	23.1	-1.3	-0.3	22.8	0.5	0.1	22.9
Gross Personal Income	115.8	5.1	5.9	123.0	4.7	5.8	128.8	3.3	4.2	133.0
Direct Personal Taxes	27.3	3.3	0.9	28.2	4.3	1.2	29.4	3.3	1.0	30.4
Personal Disposable Income	88.5	5.6	5.0	94.8	4.8	4.6	99.4	3.3	3.3	102.6
Consumption	87.8	5.3	4.6	92.4	4.4	4.1	96.5	4.5	4.4	100.8
Personal Savings	0.7	49.0	0.3	2.4	20.4	0.5	2.9	-38.6	-1.1	1.8
Savings Ratio	0.8			2.5			2.9			1.7
Average Personal Tax Rate	23.5			22.8			22.8			22.8

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	73.6	15.3	13.6	84.8	11.3	7.0	94.4	9.8	7.5	103.6
Tourism	4.8	6.1	-0.5	5.1	6.6	2.5	5.5	4.3	2.8	5.7
Other Services	106.6	36.8	28.3	145.8	18.3	7.5	172.5	11.8	7.5	192.8
Imports of Goods and Services	185.2	27.4	0.0	236.0	15.5	0.0	272.5	10.9	0.0	302.4
FISM Adjustment	0.0			0.0			-0.3			-0.4
Adjusted Imports	185.2	27.4	21.7	236.0	15.3	7.0	272.2	10.9	7.4	302.0

FORECAST TABLE A5 Balance of Payments

	2014	2015	2016	2017
	€ bn	€ bn	€ bn	€ bn
Exports of Goods and Services	219.8	317.2	349.6	376.7
Imports of Goods and Services	185.2	236.0	272.5	302.4
Net Factor Payments	-29.7	-53.2	-43.6	-46.7
Net Transfers	-2.7	-2.9	-2.9	-2.9
Balance on Current Account	2.1	25.2	32.3	24.9
As a % of GNP	1.3	12.5	14.1	10.9

FORECAST TABLE A6 Employment and Unemployment, Annual Average

	2014	2015	2016	2017
	000s	000s	000s	000s
Agriculture	109.0	109.9	113.5	114.2
Industry	348.4	373.7	396.2	408.5
Of which: Construction	109.4	125.5	135.8	141.5
Services	1,453.2	1,474.1	1,503.8	1,535.4
Total at Work	1,913.8	1,963.5	2,018.3	2,058.1
Unemployed	242.6	203.6	175.1	154.0
Labour Force	2,156.8	2,167.2	2,193.3	2,212.1
Unemployment Rate, %	11.3	9.4	8.0	7.0

Special Article

Special Articles are substantive articles that are typically of immediate policy relevance and often directly relevant to the associated *QEC.*

This Article has been accepted for publication by the Institute, which does not itself take institutional policy positions. Special Articles are subject to refereeing prior to publication. The authors are solely responsible for the content and the views expressed.

Distributional Impact of Tax and Welfare Policies: Budget 2017

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Abstract

The distributional impact of budgetary policies is a matter of continuing interest. This article examines the impact of the tax and welfare changes introduced in Budget 2017 using SWITCH, the ESRI tax-benefit model. The model now includes more than 8,000 households, drawn from the CSO's nationally representative Survey of Income and Living Conditions for 2013 and 2014 – the most recent available. The impact of policy is measured against a distributionally neutral benchmark – a budget which would index the money value of tax credits and welfare payment rates in line with expected growth in wages of about 2.4 per cent.

Key findings include the fact that while overall impacts are small, the greatest gains are focused on the lowest income groups. Average gains for the one-tenth of households with the lowest incomes are close to 1 per cent, while gains for other households are less than half of one per cent, and typically close to one quarter of one per cent. Analysis at family unit level reveals that the majority of family types will also have small gains – between ¼ and ½ of one per cent. The family types with the largest gains are non-earning lone parents and unemployed couples (approximately 2 per cent of income), though together these family types represent just 3 per cent of the population.

[1] We thank Brian Ring and the SILC team at CSO for access to SILC data on which the SWITCH tax-benefit model is based. We thank anonymous referees for comments; any remaining errors or obscurities are the responsibility of the authors.

Introduction

In this article we examine the distributional impact of the main tax and welfare measures in Budget 2017. We also consider the impact of some changes which were introduced during 2016, and were not therefore part of either Budget 2016 or Budget 2017; specifically the suspension of the water charges from end-March 2016, and the increase in the maximum rent limits for the Rent Supplement Scheme in July 2016.

Analysis of the distributional impact of budgetary measures is commonly done on a Budget-to-Budget basis. This means that a given year's budgetary policy is compared with a wage-growth indexed version of the policy announced in the previous year's budget (see for example, Callan et al., 2015; Keane et al., 2014). Budget 2017, and policy reform during 2016, raised a number of issues relating to the timing of policy changes. For example, the suspension of water charges in March 2016, and the move to have welfare payment rates increase in March 2017 are particularly relevant in the context of analysing Budget 2017. The impact of policy changes on household incomes can be somewhat different depending on whether analysis is conducted on a Budget-to-Budget basis, or whether we account for the part-year impact of policy reform implemented during the year.

We take account of this issue by presenting two different perspectives on the distributional impact of Budget 2017. We look first at the impact of policy as announced in Budget 2017 as compared with policy announced in Budget 2016: a 'Budget-to-Budget' comparison. The second view takes account of the fact that some policies change within the calendar year. Here the focus is on comparing policies over the whole calendar year 2017 with those in force over the calendar year 2016. We refer to this as a 'year-on-year' comparison.

The analysis uses SWITCH, the ESRI tax-benefit model,[2] to ensure that we obtain a nationally representative picture based on SILC (Survey of Income and Living Conditions), the CSO's main survey of household income. The scale, depth and diversity of this survey allows it to provide an overall picture of the impact of the budget on Irish households, which cannot be gained from selected example cases. This year, for the first time, we have 'pooled' the 2013 and 2014 waves of the survey in order to increase the effective sample size to almost 8,000 households, as compared with a figure closer to 4,500 households in last year's analysis. This helps to improve the accuracy of the estimates of policy impact.[3]

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

3 Due to the longitudinal component of SILC, some households are in both waves of the survey. Where a household is present in more than one of these waves, we use the most recent observation. For close to 70 per cent of

The final sample on which the analysis is based contains almost 8,000 households, or over 20,000 individuals; an increase in sample size of more than 70 per cent from previous analyses.

To ensure that these pooled data are nationally representative, weights are calibrated using information from demographic projections, the Revenue Commissioner's Income Distribution Statistics, Department of Social Protection estimates of the number of recipients of a range of social welfare schemes, and a number of other sources to represent the 2017 situation.[4]

The areas covered by SWITCH, including income tax, PRSI, USC, property tax, welfare benefits and public service remuneration, account for the bulk of the impact of budgetary policy changes on households' cash incomes in recent years. The model was also recently extended to take account of water charges and the water conservation grant. There are, however, some taxes (e.g. indirect taxes, which affect the purchasing power of cash incomes) which cannot at present be integrated fully within the modelling framework. In recent work, Savage and Callan (2015) examined the feasibility of including indirect taxes in analysis of budgetary policy using data from the CSO's Household Budget Survey in combination with SILC. In the coming year, the SWITCH team plan to expand on this work and include indirect tax analysis in future budgetary analysis.

Tax-benefit models do not, in general, attempt to measure the impact of cuts in public services on households at different income levels.[5] While this is an important area, there is no standard methodology for the attribution of benefits from public spending to households. Thus, there is no agreed international approach which can simply be applied to Ireland. In recent years the UK Treasury (HM Treasury, 2014) has begun to publish analyses which seek to distribute the value of public spending across the household income distribution. O'Dea and Preston (2012) raise some important questions about the assumptions made and propose some alternative methods, but these methods have yet to be implemented.

households it is the 2014 data which is used; 2013 data is used only where a household is not reinterviewed. By design, SILC does not reinterview 25 per cent of households, and a further significant proportion cannot be contacted or refuse to respond. This structure means that the households in the pooled sample are not automatically representative of the 2014 population, but this issue is dealt with by the reweighting procedure described in the text, which ensures the SWITCH database is representative of the 2017 situation.

4 A technical adjustment for sample size differences between years of SILC also applies.

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

The results we obtain relate to the 'cash' or 'first round' effects of policy changes, before any adjustments in individual behaviour such as changes in employment status or hours of work. This is by far the most common approach internationally. Indeed, Adam et al. (2015) omit behavioural responses from their analysis of UK tax and benefit reforms between 2010 and 2015. In the absence of a structural model of utility, they argue that 'measuring changes in household incomes before behavioural responses is preferable to analysing them afterwards', as the first-round income change better approximates the welfare effect of a policy change. For example, suppose a child benefit cut resulted in an individual choosing to work more hours. The person's net income might rise after the behavioural change, yet their welfare may have reduced as their income, at any given choice of working hours, would be lower than before the policy change.

In this article, our focus is on the impact of Budget 2017 at different income levels. In previous analyses of budgetary policy (see for example Callan et al., 2015; Keane et al., 2014), we have also examined the net impact of the set of budgets since 2007. As the economic recovery continues in Ireland, and the underlying population and distribution of market incomes continues to change, the appropriateness of continuing to group budgets since 2007 together as a set of 'austerity budgets' needs to be carefully considered. In work planned for the forthcoming year, we will examine the issues involved in such a cumulative analysis of budgetary policy during and after the Great Recession, using decomposition methods proposed by Bargain and Callan (2010). Applying the Bargain and Callan decomposition will allow us to quantify the relative role of policy changes compared to all other factors, such as changes in market incomes and changes in the underlying population.

Measuring the Distributional Impact of Policy

What has been the overall impact of Budget 2017 at different income levels and on different family types? Analysis based on a large-scale nationally representative sample of households is essential in answering such questions. Calculations for selected example households cannot give an accurate picture of the impact of the budget for the population as a whole. This requires calculations for large numbers of real households in a nationally representative sample. The ESRI tax-benefit model (SWITCH) allows us to do this: it estimates the impact of direct tax and welfare changes using anonymised data from the CSO's Survey on Income and Living Conditions. Basing the analysis on a pooled sample of two waves of SILC allows for greater precision of estimates reported in this paper, as well as the impact of policy reform on more refined groups of individuals and families where necessary.

The impact of policy change must be measured against an alternative specifying what would happen if the policy change did not take place (a 'counterfactual' policy). In the construction of budgets, the practice in Ireland has been to construct an 'opening budget' against which changes are measured. For tax and welfare, Ireland's conventional opening budget simply freezes tax rates, credits and welfare payments at their existing levels, whereas the UK and the US have adopted differing forms of indexation with respect to prices and/or wages (see Callan et al., 2015, for more details). While the frozen benchmark is useful in accounting terms, it would be highly misleading in an analysis of distributional impact.[6] With nominal wages, prices and real wages all showing positive growth, implementing the conventional opening budget would lead to real income *losses* for those dependent on welfare, while further up the income distribution incomes would *rise*. (Callan et al., 2001; Bargain and Callan, 2010).[7] Furthermore, using the opening budget as a basis to measure policy impact would mean that measured policy impact would depend on government's definition of this default policy – something which varies across countries, and can change over time.

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

We use forecasts of wage growth (or decline) to implement this approach on a prospective basis. Results examining the impact of Budget 2017 are based on forecast wage growth of 2.4 per cent – an average of the forecast wage growth from the current *Quarterly Economic Commentary* (McQuinn et al., 2016, 2.3 per cent) and the Central Bank's *Quarterly Bulletin* (Central Bank of Ireland, 2016, 2.5 per cent).

Results shown are at the household level unless otherwise specified and are based on household disposable income (after taxes and benefits), adjusted for

6 For a more detailed exposition, see Callan et al. (2001).

7 When wages are falling, the conventional benchmark would give rise to income gains for welfare recipients and income losses for those in employment.

household size and composition, i.e. income per adult equivalent or 'equivalised income'.[8]

Budget 2017

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

- €5 increase in the weekly rates of payment for pensioners aged 66 and over, with proportional increases for qualified adults and those on reduced rates;
- €5 increase in the weekly rates of payment for working age (under 66 years of age), with proportional increases for qualified adults, Jobseekers Allowance (JA) recipients who are aged under 26 years of age and other recipients on reduced rates;
- €20 per week increase in the income disregard for One Parent Family Payment and the Jobseeker's Transition payment;
- an increase in the Social Welfare Christmas Bonus, from 75 per cent to 85 per cent;
- €100 increase in the Home Carer Tax Credit;
- €400 increase in the Earned Income Credit;
- 0.5 per cent reduction in the lowest two rates of Universal Social Charge, and a €104 increase in the income threshold at which the second rate becomes payable.

We also include the 10 cent per hour increase in the National Minimum Wage (NMW) in the analysis throughout.[9] As this is paid for by employers, it can be argued that it should not be included on a par with tax and welfare adjustments. We have therefore run the analysis without the increase in the minimum wage; differences in results from those presented here are barely perceptible.

The analysis also includes two tax and welfare reforms that occurred during 2016, after Budget 2016 was announced. First are the increases in the maximum rent limits for the Rent Supplement Scheme that were introduced in July 2016. Also included in the analysis are the suspension of the water charges and the related suspension of the Water Conservation Grant.

As described in the introduction, we analyse the impact of Budget 2017 using two approaches. First, we take the usual approach of analysing policy changes on a Budget-to-Budget basis. The second approach accounts for the fact that some

8 This adjusts income to take account of household size. The scale used is the scale used in official monitoring of poverty in Ireland, i.e. 1 for the first adult, 0.66 for subsequent adults and 0.33 for children aged 14 or under.

9 Some individuals in the sample have wages below the minimum wage. In our simulations, these cases are treated as if they had the minimum wage, and benefited from an increase. Alternative approaches to modelling the 10 cent per hour rise in the NMW also have very little overall impact on the outcomes measured here.

policies were introduced, or were planned to be introduced, part-way through the calendar year, so that incomes in that year will only be partly affected by the policy change. This is what we term 'year-on-year' analysis.

The key differences between the Budget-to-Budget analysis and the year-on-year analysis regard the treatment of water charges and the water conservation grant, and the treatment of increases to social welfare payments. The Budget-to-Budget analysis contains the full impact of the suspension of the water charges and the water conservation grant. As water charges were only payable for the first quarter of 2016, and the water conservation grant was not paid to any households in 2016, in the year-on-year analysis households are liable only for one-quarter of water charges in 2016, and do not receive the water conservation grant in either 2016 or 2017.[10] Similarly, as the increase to social welfare payments announced in Budget 2017 is due to be implemented from 10 March 2017, the year-on-year analysis allows for a reduced impact of this reform on household incomes in 2017, compared to the full year impact in the Budget-to-Budget analysis.[11]

Overall, the SWITCH model provides excellent coverage of the main policy changes in Budget 2017. The items included in the SWITCH analysis account for over €470 million of the tax and social insurance changes in the budget, representing over 95 per cent of the cost of all tax changes in Budget 2017. On the welfare side, SWITCH coverage is over €300 million or approximately 75 per cent of the cost of the welfare changes.

While the majority of changes announced in Budget 2017 are included in the analysis, some changes are too complex to be included in the model at this stage. Chief among these are changes to excise duties on cigarettes, the introduction of a 'Help-to-Buy' scheme aimed at first-time-buyers, and changes to Capital Gains Tax, Capital Acquisitions Tax and DIRT. Many of the welfare reforms not included in the analysis, such as extended dental and optical benefits, are not due to be implemented until the last quarter of 2017, so will have a relatively small impact on households in 2017.

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10 The standard approach in tax-benefit modelling is to simulate tax liabilities and welfare entitlements. Similarly, here we simulate the water charge liabilities. Low rates of payment of water charges in Q1 2016 mean that 'cash flow' impact on households would be smaller than the impact on liabilities which is modelled here.

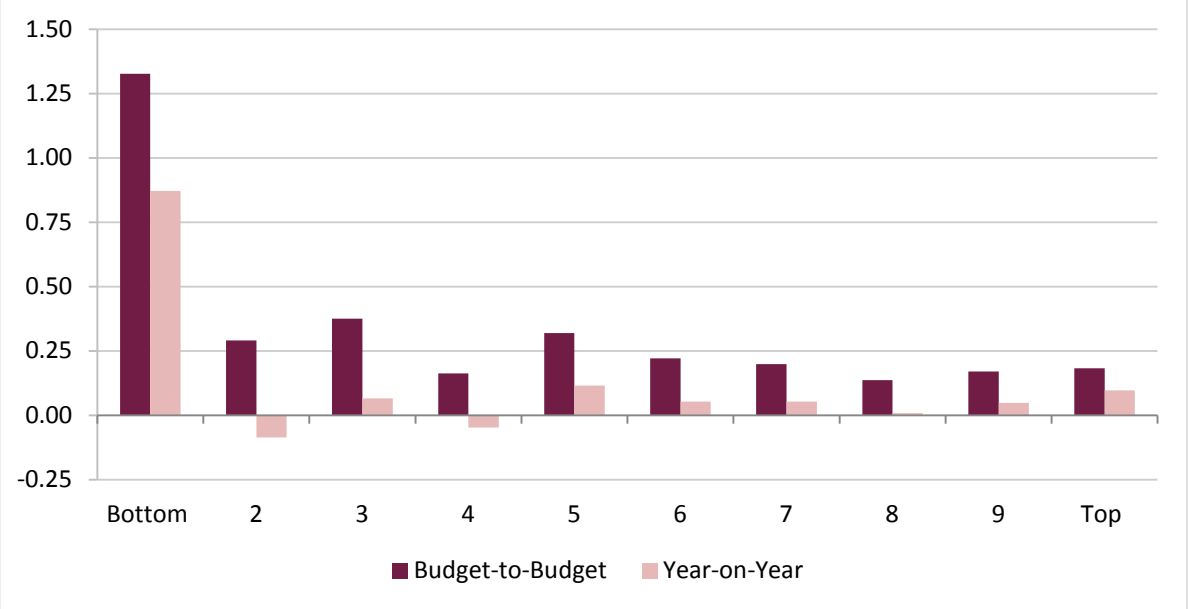
11 The increase in the maximum rent limits for the Rent Supplement Scheme was implemented mid-2016, so could also be treated differently in the year-on-year analysis. However, the full impact of the rent limit increases is included in both analyses, as it represents an approximation of the additional HAP expenditure in the year-on-year results.

In addition, neither the €105 million allocated to the Housing Assistance Payment (HAP) scheme nor the introduction of the Affordable Childcare Scheme can be included in the present analysis. Work aimed at including these schemes in the SWITCH model is ongoing, and will be reported on in detail during 2017. The additional HAP expenditure is likely to be targeted at a similar group of individuals as the Rent Supplement scheme, so the increase in the maximum rent limits from July 2016 is included in full in both the Budget-to-Budget and year-on-year analyses to approximate this expenditure. Of all the items not covered, some will have a positive impact on lower income groups (e.g. increased expenditure on HAP), others will have an unfavourable impact (e.g. excise duties), and the impact of others is uncertain (e.g. the Help-to-Buy scheme).

Figure 1 shows the impact of Budget 2017, relative to a neutral, wage-indexed budget, across ten equally sized income groups (deciles) ranked from the lowest to the highest incomes, after adjustment for household size. Results are shown on both a 'Budget-to-Budget' and 'year-on-year' basis. In both cases, the bottom decile is the primary beneficiary of the policy changes. The bottom decile gains by about 1¼ per cent on a 'Budget-to-Budget' basis, or just over ¾ per cent on a 'year-on-year' basis. The higher than average increase in income in the bottom decile is due largely to the increase in maximum rent limits, with a further gain in income due to the suspension of water charges. Increases in personal rates of payment for social welfare payments in Budget 2017 were broadly in line with forecast wage growth, which means their impact is similar to that of a wage-indexed budget.

The impact of Budget 2017, compared to a wage-indexed budget, was much more limited across the remaining 90 per cent of households. On a 'Budget-to-Budget' basis there were gains averaging close to 0.3 per cent for the rest of the bottom half of the income distribution, and about 0.2 per cent for the upper half. On a 'year-on-year' basis, which takes account of the timing issues discussed earlier, policy changes between 2016 and 2017 resulted in little to no change in household incomes across deciles 2 to 10.

FIGURE 1 Impact of Budget 2017 – Percentage Change in Disposable Income by Income Decile Relative to Wage-Indexed Budget



Source: Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2016 incorporating for 2017 the main changes in direct tax, welfare, water charges, and the National Minimum Wage. Each income group contains one-tenth of all households, ranked from lowest to highest incomes, adjusted ('equivalised') to take account of the numbers of adults and children in each household. Budgetary impacts are assessed relative to a neutral budget with tax bands, tax credits and welfare payments increased in line with expected wage growth of 2.4 per cent.

Impact by Family Type

The preceding analyses have examined the impact of Budget 2017 across the income distribution. Here we examine how different family types have been affected by budgetary policy changes. The analysis is conducted at the level of what is termed a 'tax unit', i.e. an individual or couple, together with dependent children, if any. Young adults including third-level students are treated as independent tax units.

Table 1 shows that, on a Budget-to-Budget basis, income for each family type either increased modestly or remained stable as a result of Budget 2017. No family type, on average, suffers losses in income as a result of policy changes announced in Budget 2017. The largest gains, at about 2 per cent of income, are for non-earning couples and non-earning lone parents. Together, however, these family types represent only 3 per cent of all tax units. Gains in income of less than ½ per cent are most common, with single employed individuals, couples with at least one earner, and retired individuals and couples all seeing income gains in this range.

The second column of Table 1 compares how incomes were affected by policy over the calendar year 2016 (again indexed by 2.4 per cent) with policy over the

calendar year 2017. Again, the largest gains are for unemployed couples and non-earning lone parents. On a 'year-on-year' basis, some family types experience small falls in income as a result of policy in 2017, compared with a wage-indexed version of policy in 2016. Retired individuals and couples, as well as single earner couples with children, experience falls of 0.2 per cent in income on a year-on-year basis. The pattern of small gains in income for all other family types remains similar to the Budget-to-Budget results, though income gains are slightly less pronounced on a year-on-year basis. As indicated earlier, the basic contrast here arises from two factors. First, the fact that gains which arose *before* the introduction of Budget 2017 are already included in 2016 incomes, and so have a lesser impact on 2017 over 2016 comparisons. Second, the fact that welfare increases are to be introduced from March 2017 rather than for the full calendar year.

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

	Budget 2017: Budget-to-Budget	Budget 2017: Year-on-Year	Proportion of Families
	% change	% change	%
Single Retired Tax Unit	0.1	-0.2	10
Retired Couple	0.1	-0.2	8
Single Employed without Children	0.2	0.2	32
All Other Tax Units	0.8	0.3	10
Single Earner Couple without Children	0.4	0.2	6
Employed Lone Parent	0.3	0.2	5
Dual Earner Couple without Children	0.4	0.2	5
Dual Earner Couple with Children	0.2	0.1	9
Single Earner Couple with Children	0.0	-0.2	8
Non-Earning Lone Parent	2.2	1.9	2
Unemployed Couple	2.0	1.3	1
Single Unemployed without Children	0.9	0.3	3

Source: Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2016 incorporating for 2017 the main changes in direct tax, welfare, water charges, and the National Minimum Wage.

Conclusion

Our analysis provides a nationally representative picture of the impact of the main tax and welfare changes in Budget 2017, taking into account the increase in the National Minimum Wage and a number of 'mid-year' policy reforms. The analysis is undertaken relative to a distributionally neutral budget, implemented via indexation of tax and welfare parameters in line with expected wage growth.

We analysed the impact of Budget 2017 using two approaches. The first approach, which we term a 'Budget-to-Budget' approach, compares how incomes are affected by policies announced in Budget 2017 compared with a wage-growth

indexed version of the policy announced in Budget 2016. Compared with this wage-indexed benchmark, we find that Budget 2017 led to a modest increase – a quarter of 1 per cent – in aggregate household disposable income (i.e. incomes including welfare payments and net of income tax, USC and PRSI). On average, Budget 2017 is most favourable to the 10 per cent of households with the lowest incomes, who gain over 1 per cent in income. For most other income groups, changes in Budget 2017 will lead to small gains of up to half of 1 per cent, as compared with a neutral or wage-indexed budget.

The second approach, which we term a 'year-on-year' approach, compares policies over the whole calendar year 2017 with those in force over the calendar year 2016, again indexed by expected wage growth. On this basis, incomes in deciles 2 to 9 were largely unaffected by policy announced for 2017 compared to policy in 2016. Again, largely due to the suspension of water charges and the increase in maximum rent limits for the Rent Supplement scheme, those in the bottom decile stand to gain most, at just over three-quarters of 1 per cent.

Analysis at family unit level reveals that the majority of family types will gain between 0.2 per cent and 0.5 per cent as a result of Budget 2017. Single employed individuals, with or without children, gain between 0.2 per cent and 0.4 per cent of income on a 'Budget-to-Budget' and 'year-on-year' basis. Retired tax-units, either single individuals or couples, make small losses (-0.2 per cent) on a 'year-on-year' basis, but make modest gains on a 'Budget-to-Budget' basis. The family types with the largest gains are non-earning lone parents and unemployed couples (approximately 2 per cent of income), though together these family types represent just 3 per cent of the population.

New perspectives on how incomes changed over the recession, and how policy influenced these changes, are currently being analysed and we plan to report on these in a future publication.

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