

Quarterly Economic Commentary

David Duffy
Kieran McQuinn
David Byrne
Ciara Morley

Winter 2014



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The forecasts in this *Commentary* are based on data available by 12 December 2014. Draft completed 12 December 2014.

Special Articles

Research Notes

A subscription to the *Quarterly Economic Commentary* costs €327 per year, including VAT and postage. This includes online access to the full text on the day of publication.

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

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

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Edgar Morgenroth.

Summary Table

	2011	2012	2013	2014	2015
Output (Real Annual Growth %)					
Private Consumer Expenditure	-1.2	-1.2	-0.8	1.5	2.0
Public Net Current Expenditure	-2.1	-2.1	1.4	0.0	0.0
Investment	-2.9	5.0	-2.4	14.3	12.8
Exports	5.5	4.7	1.1	5.6	5.1
Imports	-0.6	6.9	0.6	4.4	4.5
Gross Domestic Product (GDP)	2.8	-0.3	0.2	5.0	4.7
Gross National Product (GNP)	-0.8	1.1	3.3	4.9	4.6

Prices (Annual Growth %)					
Consumer Price Index (CPI)	2.6	1.7	0.5	0.3	0.5
Growth in Average Hourly Earnings	2.1	0.9	2.4	0.0	1.0

Labour Market					
Employment Levels (ILO basis (000s))	1,855	1,842	1,880	1,913	1,962
Unemployment Levels (ILO basis (000s))	317	316	282	244	210
Unemployment Rate (as % of Labour Force)	14.6	14.7	13.0	11.3	9.7

Public Finance					
General Government Balance (€ bn)	-21.6	-13.9	-10.0	-6.5	-4.7
General Government Balance (% of GDP)	-12.6	-8.0	-5.7	-3.5	-2.4
General Government Debt (% of GDP)	111.1	121.7	123.3	113.4	106.1

External Trade					
Balance of Payments Current Account (€ bn)	0.1	1.5	6.6	8.5	10.2
Current Account (% of GNP)	0.1	1.1	4.5	5.5	6.2

Demand					
Final Demand	2.7	2.4	0.5	4.8	4.6
Domestic Demand	-0.7	-0.6	-0.3	3.7	4.0
Domestic Demand (excl. Stocks)	-1.7	-0.2	-0.7	3.7	4.0

Summary

The Irish economy has seen significant growth in 2014 with improvements observable across a broad set of key indicators. Output growth (both GNP and GDP) is set to increase by approximately 5 per cent while unemployment will fall to just over 11 per cent. A key feature of economic developments in 2014 has been the particularly strong performance of taxation receipts with all major items reporting significant year-on-year increases. The net consequence of this is a fiscal deficit of approximately 3.5 per cent for this year; this is a full percentage point better than was expected this time last year.

We expect the recovery and strong output growth rates to continue into 2015. The Research Note by Byrne and McQuinn suggests that, notwithstanding the recent improvements, the Irish economy still appears to be operating at somewhat below its potential level. While the continued poor performance of the Euro Area constitutes a significant downside risk for future domestic growth prospects, we expect continued strong foreign demand for Irish goods and services next year. This will almost certainly be complemented by a significant contribution to growth from domestic sources. Investment, in particular, will see sizeable increases next year, albeit from a low base, while the outlook for consumption is also positive despite the still sizeable levels of household and corporate debt prevalent in the economy.

Previous *Commentaries* have discussed at length various difficulties with interpreting Irish national accounts. Contract manufacturing has emerged as another such issue. Overall, because of this and other reasons, we continue to use GNP, rather than GDP, as our main economic indicator. We expect output growth of 4.6 per cent in 2015 with unemployment set to fall to 9.7 per cent.

The 2015 budget is the subject of some analysis in this *Commentary*. From a macroeconomic perspective, we feel the budget, by being quite expansionary in nature, was less cautious than we would have preferred. In the previous *Commentary* we had suggested a neutral fiscal policy, which would have resulted in a greater margin of error in achieving the 3 per cent deficit target next year. We now forecast the deficit in 2015 to be 2.4 per cent. In the Special Article by Keane, Callan, Savage, Walsh and Colgan, the regressive nature of the budget is highlighted with estimates suggesting the poorest 10 per cent of households will experience a decline of 1 per cent in income due to the budgetary measures. Middle income groups saw little change in their incomes, while there were small

gains for high income households; just over half of one per cent for the top income group. Using the same approach, the analysis also estimates that, for budgets over the period 2009 to 2015, the highest income groups have experienced the most significant income losses, while the next most affected group was those on the lowest incomes.

The *Commentary* also contains a special Appendix outlining an assessment of the Central Bank's proposed macro-prudential measures. While the adoption of a macro-prudential system is in principle a welcome and highly sensible development in an Irish context, the Appendix argues that in the interests of efficient policy implementation and transparency, such measures should be applied on a *counter-cyclical* rules basis. Additionally, the Appendix notes that were such a rule applied in the Irish market at present, it is unlikely that the counter-cycle measures proposed in the Appendix would be applied in the current context. Finally, it is suggested that regular analysis of relevant indicators in the housing and property market should be both conducted and published in framing a macro-prudential system.

National Accounts 2013

A: Expenditure on Gross National Product

	2012	2013	Change in 2013		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	82.5	83.3	1.1	1.9	-0.8
Public Net Current Expenditure	25.9	26.0	0.1	-1.2	1.4
Gross Fixed Capital Formation	26.9	26.5	-1.4	1.0	-2.4
Exports of Goods and Services	182.5	184.1	0.8	-0.3	1.1
Physical Changes in Stocks	0.3	0.8			
Final Demand	318.1	320.7	0.8	0.3	0.5
less:					
Imports of Goods and Services (M)	147.1	147.7	0.4	-0.2	0.6
Statistical Discrepancy	1.7	1.8			
GDP at Market Prices	172.8	174.8	1.2	1.0	0.2
Net Factor Payments (F)	-31.5	-27.3			
GNP at Market Prices	141.2	147.5	4.4	1.1	3.3

B: Gross National Product by Origin

	2012	2013	Change in 2013	
	€ bn	€ bn	€ bn	%
Agriculture	3.0	3.0	0.0	0.3
Non-Agriculture: Wages, etc.	69.5	71.9	2.3	3.4
Other	63.7	61.1	-2.6	-4.1
Adjustments: Stock Appreciation	-0.1	0.6		
Statistical Discrepancy	-1.7	-1.8		
Net Domestic Product	134.5	134.8	0.4	0.3
Net Factor Payments	-31.5	-27.3	4.2	-13.4
National Income	102.9	107.5	4.6	4.5
Depreciation	23.0	23.7	0.6	2.6
GNP at Factor Cost	126.0	131.2	5.2	4.1
Taxes less Subsidies	15.2	16.3	1.1	6.9
GNP at Market Prices	141.2	147.5	6.3	4.4

C: Balance of Payments on Current Account

	2012	2013	Change in 2013
	€ bn	€ bn	€ bn
X - M	35.5	36.3	0.9
F	-31.5	-27.3	4.2
Net Transfers	-2.4	-2.5	
Balance on Current Account	1.5	6.6	5.1
as % of GNP	1.1	4.5	3.5

National Accounts 2014

A: Expenditure on Gross National Product

	2013	2014	Change in 2014		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	83.3	85.0	2.0	0.5	1.5
Public Net Current Expenditure	26.0	25.7	-1.0	-1.0	0.0
Gross Fixed Capital Formation	26.5	31.1	17.3	2.6	14.3
Exports of Goods and Services	184.1	195.5	6.2	0.6	5.6
Physical Changes in Stocks	0.8	0.8			
Final Demand	320.7	338.2	5.4	0.6	4.8
less:					
Imports of Goods and Services (M)	147.7	155.6	5.4	0.9	4.5
Statistical Discrepancy	1.8	1.8			
GDP at Market Prices	174.8	184.4	5.5	0.4	5.0
Net Factor Payments (F)	-27.3	-29.0			
GNP at Market Prices	147.5	155.4	5.3	0.4	4.9

B: Gross National Product by Origin

	2013	2014	Change in 2014	
	€ bn	€ bn	€ bn	%
Agriculture	3.0	3.1	0.1	2.5
Non-Agriculture: Wages, etc.	71.9	73.1	1.2	1.7
Other	61.1	67.3	6.1	10.0
Adjustments: Stock Appreciation	0.6	0.6		
Statistical Discrepancy	-1.8	-1.8		
Net Domestic Product	134.8	142.2	7.4	5.5
Net Factor Payments	-27.3	-29.0	-1.7	6.3
National Income	107.5	113.2	5.7	5.3
Depreciation	23.7	24.0	0.3	1.4
GNP at Factor Cost	131.2	137.2	6.0	4.6
Taxes less Subsidies	16.3	18.1	1.8	11.1
GNP at Market Prices	147.5	155.4	7.8	5.3

C: Balance of Payments on Current Account

	2013	2014	Change in 2014
	€ bn	€ bn	€ bn
X - M	36.3	39.9	3.6
F	-27.3	-29.0	-1.7
Net Transfers	-2.5	-2.5	0.0
Balance on Current Account	6.6	8.5	1.9
as % of GNP	4.5	5.4	1.2

National Accounts 2015

A: Expenditure on Gross National Product

	2014	2015	Change in 2015		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	85.0	87.6	3.0	1.0	2.0
Public Net Current Expenditure	25.7	25.8	0.5	0.5	0.0
Gross Fixed Capital Formation	31.1	36.0	15.8	2.6	12.8
Exports of Goods and Services	195.5	207.6	6.2	1.1	5.1
Physical Changes in Stocks	0.8	1.0			
Final Demand	338.2	358.0	5.9	1.2	4.6
less:					
Imports of Goods and Services (M)	155.6	164.1	5.4	0.9	4.5
Statistical Discrepancy	1.8	1.8			
GDP at Market Prices	184.4	195.7	6.2	1.4	4.7
Net Factor Payments (F)	-29.0	-30.9			
GNP at Market Prices	155.4	164.8	6.1	1.4	4.6

B: Gross National Product by Origin

	2014	2015	Change in 2015	
	€ bn	€ bn	€ bn	%
Agriculture	3.1	3.2	0.1	2.5
Non-Agriculture: Wages, etc.	73.1	75.8	2.8	3.8
Other	67.3	74.6	7.4	10.9
Adjustments: Stock Appreciation	0.6	0.6		
Statistical Discrepancy	-1.8	-1.8		
Net Domestic Product	142.2	152.4	10.2	7.2
Net Factor Payments	-29.0	-30.9	-1.9	6.6
National Income	113.2	121.5	8.3	7.3
Depreciation	24.0	24.5	0.5	2.1
GNP at Factor Cost	137.2	146.0	8.8	6.4
Taxes less Subsidies	18.1	18.8	0.7	3.7
GNP at Market Prices	155.4	164.8	9.5	6.1

C: Balance of Payments on Current Account

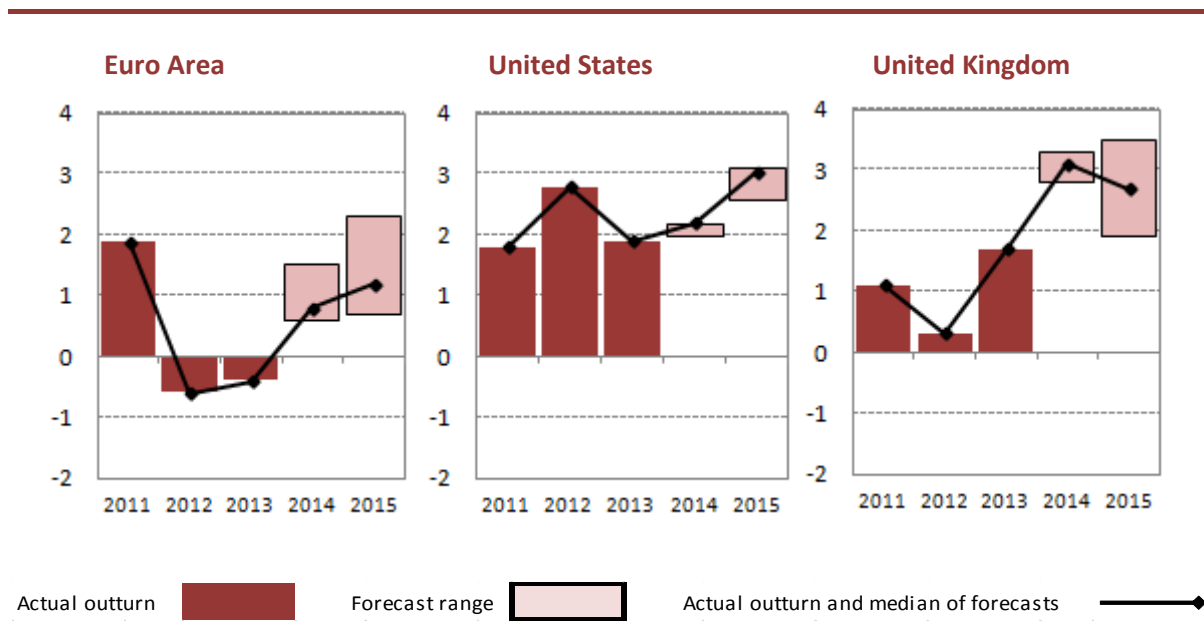
	2014	2015	Change in 2015
	€ bn	€ bn	€ bn
X - M	39.9	43.5	3.6
F	-29.0	-30.9	-1.9
Net Transfers	-2.5	-2.5	0.0
Balance on Current Account	8.5	10.1	1.7
as % of GNP	5.4	6.2	1.0

1

The International Economy

Since the last *Commentary*, the United States and United Kingdom have continued to grow robustly. In these economies, discussion has seen the return of monetary policy to more normal settings, after a prolonged period of very low interest rates and of substantial asset purchases. With declining spare capacity, particularly in the US, inflationary pressures are set to return. The European economy is markedly different. It faces stagnation in growth with very low inflation, and outright deflation in some countries. Thus while the outlook for two of Ireland’s main trade partners is conducive to export growth, we have lowered our export forecast due to the ongoing difficulties concerning European economic performance.

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



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

The Euro Area Economy

Real GDP in the Euro Area grew by 0.2 per cent quarter-on-quarter and by 0.8 per cent year-on-year in the third quarter of 2014. The fact that the bloc narrowly avoided falling back into recession should not be mistaken for a success. Whether the growth rate proved to be slightly above, or slightly below, zero is not of particular importance. In practical terms, the Euro Area remains in a downturn

which started in 2008, and now appears to be on the verge of stagnation. It faces low growth and low inflation, with policy responses proving to be slow and, as yet, insufficient.

Nowcasts¹ suggest Euro Area growth of 0.01 per cent in the fourth quarter of 2014. For France, Germany and Italy they estimate growth of 0.2 per cent, 0.1 per cent and -0.2 per cent respectively. As argued in previous *Commentaries*, an investment programme for Europe would help to stimulate growth. A practicable plan does not seem to be forthcoming, however. Germany, a country with sufficient “fiscal space” to pursue investment, in the words of European Central Bank (ECB) President Mario Draghi, has announced its intentions to pursue a balanced budget instead. The European Commission, under newly-elected President Jean-Claude Juncker, has produced a €315 billion investment plan, aspects of which have already drawn heavy criticism. The plan has an ambitious official leverage ratio of 15; the total announced figure is the sum of €21 billion in European funds and a target for attracting supplementary private funds. However, the details of the plan reveal that the European funds are guarantees rather than cash and include some previously-announced guarantees. It is also possible that the selection of investment projects could be problematic, being limited to infrastructure projects from which private gains could be realised.

Meanwhile, inflation as measured in the Harmonised Index of Consumer Prices (HICP) in the Euro Area was 0.3 per cent in November. Core inflation, excluding energy, food, alcohol and tobacco, was stable at 0.7 per cent in November. A further issue arises from the possibility of inflation expectations de-anchoring from the ECB’s inflation target of just under 2 per cent. In August, the ECB’s preferred indicator of medium-term inflation expectations, the 5Y5Y Inflation Forward Swap Rate, fell below 2 per cent for the first time since 2011. It remains at approximately 1.6 per cent in November. The ECB recently cut its inflation rate forecasts for 2015 and 2016 to 0.7 per cent and 1.3 per cent respectively, before fully taking into account the recent decline in oil prices. The unemployment rate in the Euro Area was stable at 11.5 per cent in October, as a result of reductions in unemployment in some states being offset by an increase in Italy from 12.9 per cent to a record 13.2 per cent.

¹ Now-Casting.com, November 2014.

As discussed in previous *Commentaries*, the ECB has introduced new policy measures to return inflation to target and to stimulate growth. These have included cuts to interest rates and the expansion of the ECB's balance sheet through asset purchases. In November, ECB President Mario Draghi stated that the inclusion of government bonds as part of the ECB's asset purchase programme would fall within the ECB's mandate. In addition he stated that staff had been tasked with the preparation of further measures, which the ECB would be ready to introduce, if the previously-announced measures are insufficient.

The US Economy

The advanced estimate of third quarter growth in the United States shows that real GDP grew by an annualised 3.9 per cent, following growth of 4.6 per cent in the previous quarter. There was growth in private consumer expenditure, investment, exports and government expenditure, while inventory investment and imports fell. GDP growth in the second and third quarters represent the strongest six months of growth in the US in the last decade. It is worth noting, however, that the second quarter growth rate may have involved an element of rebounding from a weather-hit first quarter which proved to be surprisingly weak.

The unemployment rate in the United States was unchanged at 5.8 per cent in November. It had been 7.0 per cent in November 2013, and the unemployment rate has now fallen to pre-crisis levels. Employment grew by 320,000 in November, the largest monthly increase since January 2012. While the labour force participation rate remains at historic lows, it appears that the problem of under-utilisation of labour has eased somewhat. There were falls in some wider measures of unemployment which incorporate discouraged workers or those marginally attached to the labour force. The number of long-term unemployed also fell by 1.2 million year-on-year to 2.8 million.

After more than five years, the Federal Reserve ended its \$4.5 trillion asset purchase programme in October. At its October meeting, it also revised its policy outlook to reflect the possibility of raising interest rates in the first half of 2015. Given the relatively strong nature of the US recovery, and diminishing spare capacity, it appears likely that the target for the Federal Funds Rate will rise from its current window of 0 to 0.25 per cent relatively soon. Inflation rose by 1.7 per cent annually in October, factoring in a fall of 1.6 per cent in energy prices.

The UK Economy

Real GDP in the United Kingdom grew by 0.7 per cent quarter-on-quarter in Q3 and by 3 per cent compared with the same quarter of 2013, according to the Office for National Statistics. Growth from the second quarter was revised up to 0.9 per cent. Recent historical revisions to the UK's National Accounts reduced the size of the peak-to-trough loss in output during the crisis to 6 per cent. UK output is now estimated to exceed the pre-crisis peak by 3.4 per cent. Questions remain about how balanced the recovery is, however; the majority of growth has come from the domestic economy with little contribution from trade. Consumption growth is the largest contributor and is primarily debt-fuelled given the lack of increase in wages. The UK's trade deficit also widened in the third quarter, while growth in industrial production was revised down from 0.5 per cent to 0.2 per cent. Growth in services of 0.7 per cent again represented the biggest contribution to GDP growth.

The unemployment rate fell to 6 per cent in the third quarter, from 6.3 per cent the previous quarter and from 7.6 per cent the previous year. The participation rate in the UK has remained roughly constant over the last year, with 22.2 per cent of the working age population inactive. Thus, the fall in unemployment is in large part attributable to increasing employment. The employment rate rose to 73 per cent in Q3 from 71.6 per cent in the same quarter last year. Real wages continued to fall in the UK, with inflation of 1.3 per cent outweighing the growth of 1 per cent in nominal wages.

It appears unlikely that the Bank of England will increase interest rates in the first half of 2015, in contrast to expectations for the Federal Reserve. Inflation in the UK is on a downward trend attributable to falling oil prices and subdued wage pressures. A slight interruption in that trend during October has been put down to one-off factors. As part of the Bank of England's Monetary Policy Framework, the Governor is required to send an open letter to the Chancellor to explain a deviation from the inflation target of 1 percentage point in either direction. This would be triggered in November 2014 if the forecast for 1 per cent annual inflation in that month should come to pass.

The World Economy

In December, the price of crude oil fell to US\$66 a barrel, a four-year low, following OPEC's announcement that it would not reduce supply until the second half of 2015, at the earliest. Oil prices have fallen 45 per cent since June. Crude oil

supply has been growing while demand has been weak globally, resulting in falling prices and an increase in crude oil inventories. As has been noted in recent *Commentaries*, energy prices have been contributing to falling levels of inflation in the Euro Area, the US and the UK. Based on these forecasts, this is likely to continue to be the case. The majority of oil-producing countries require the oil price to be significantly higher than its current level to balance their budgets, with countries such as Venezuela and Russia particularly affected.

The latest *Global Economic Forecast* from the UK's National Institute of Economic and Social Research revised down its forecast of world GDP growth to 3.3 per cent in 2014 and 3.5 per cent in 2015. It focuses on the worsening situation in the Euro Area and "policy gridlock" in response. Among emerging markets, Brazil entered recession in the first half of 2014, while growth in China continues to slow down.

2

Growth, Output and Investment

Over the course of 2014 we have seen some rebalancing in the drivers of economic growth in Ireland, with domestic demand starting to make a contribution to growth. This reflects increases in personal consumption and particularly stronger growth in investment than had previously been anticipated. It now seems likely that real GDP growth will be 4.9 per cent in 2014 with real GNP growing at a similar rate. We expect strong growth again in 2015, driven by a similar set of factors. However, our earlier forecast for Irish economic growth in 2015 has been revised down to 4.6 per cent in GNP terms and 4.7 per cent for GDP. Based on our forecasts it seems likely that the growth in final demand will be similar to the growth expected for GNP in both 2014 and 2015. The improving performance of the domestic economy is expected to be reflected in domestic demand growth of 3.7 per cent in 2014 and 4 per cent in 2015.

The Department of Finance in material accompanying the Budget, and the Irish Fiscal Advisory Council in its recent report, drew attention to the issue of how “contract manufacturing”² may be flattering recent growth in GDP. This, along with other national accounting issues, has been the subject of much analysis in recent *Commentaries*. While our focus both on GNP and the terms of trade may not completely address these issues, using these indicators does help to mitigate somewhat the impact of these anomalies in achieving an accurate assessment of Irish economic developments.

Data from the Central Statistics Office (CSO) show that output across a range of sectors of the economy has continued to increase in the third quarter. Taking these indicators into account means that we are forecasting output growth of 4.5 per cent this year and 5 per cent in 2015. The pick-up in activity in general, coupled with an increase in construction output, is reflected in stronger growth in gross value added from the Industrial sector in 2015. As has been the case in recent years, growth in Service sector output will be an important driver of activity levels in the economy. We expect that the output from the combined Distribution, Transport, Software and Communications sectors could increase by

² Contract manufacturing occurs where an Irish resident firm (but not necessarily an Irish-owned one) contracts a manufacturer abroad to produce a good for supply to an end client abroad. The sale of the good is recorded as an Irish export of goods, while the contracted production is considered a service import.

9 per cent in 2015, while output from other services is forecast to grow by close to 3 per cent.

TABLE 1 Industry and Output

	2012	2012	2013	2014	2015
	Value	Volume Change			
	€ bn	%	%	%	%
Agriculture	3.8	-12.6	16.5	10.0	7.0
Industry	39.6	-2.1	-2.3	1.3	3.0
Distribution, Transport, Software and Communications	41.0	1.0	-5.2	10.0	9.0
Public Administration and Defence	6.5	-2.6	-2.2	1.5	2.0
Other Services	65.7	2.7	2.4	2.4	2.9
GVA at Factor Cost	157.5	-0.5	-0.4	4.5	5.0

Source: ESRI Forecasts.

Available indicators continue to point to strong growth in investment in the Irish economy during 2014. However, it now seems likely that the number of private house completions this year and next will be marginally lower than we had previously anticipated. Taking account of the recently announced investment in social housing our forecast completions for 2015 is 16,000. As we have previously discussed, this is below the forecast rate of new household formation and so points to a continuing gap between the demand for and supply of housing over the forecast period. Other building and construction output is also expected to increase, reflecting higher domestic activity levels and increased FDI flows. These factors, as well as the undertaking of previously deferred investment, will also underpin growth in machinery and equipment investment, both in 2014 and 2015. On the basis of this, we expect that overall investment will grow by 14.3 per cent this year and by 12.8 per cent in volume terms in 2015.

TABLE 2 Gross Fixed Capital Formation

	2012	2012	2013	2014	2015
	Value	Volume Change			
	€ bn	%	%	%	%
Housing	3.0	-22.6	3.5	5.5	24.3
Other Building	6.0	12.7	18.3	26.5	18.6
Total Building and Construction	9.4	-1.5	14.1	19.9	19.7
Machinery and Equipment	17.6	8.8	-11.2	10.6	7.7
GVA at Factor Cost	26.9	5.0	-2.4	14.3	12.8

Source: ESRI Forecasts.

3

The Labour Market, Earnings, Prices and Consumption

The Labour Market

Given the continued improvements in overall economic activity, employment grew by 1.5 per cent in the year to Q3 2014. On a seasonally-adjusted basis, the Live Register recorded a standardised unemployment rate of 10.7 per cent in November, down from 10.9 per cent one month previous. Although the Live Register is not designed to measure unemployment, this rate mirrors that of the official measure from the *Quarterly National Household Survey (QNHS)* for Q3 2014 of 11.1 per cent. This is the ninth quarter in succession (since Q1 2013) that unemployment has declined on an annual basis. Since June 2014 the number of persons classified as long-term unemployed has also continued to fall with a decrease of 15.7 per cent in the year to Q3 2014.

The overall employment rate among persons aged 15-64 now stands at 62.2 per cent compared to 61.1 per cent in Q3 2013. Employment increased in ten of the 14 economic sectors over the year with the largest rate of increase recorded in Construction which is up 6.7 per cent annually and 3.8 per cent quarterly. It is worth noting that employment in Construction is still 60 per cent below the peak reached in Q2 2007. The majority of new jobs created continue to be full-time positions, with an increase of 1.8 per cent over the year following an annual increase of 2.4 per cent in Q2 2014.

The total number of persons in the labour force in the third quarter of 2014 decreased by 0.1 per cent compared to the second quarter. This follows 0.4 per cent quarter-on-quarter fall in the labour force in Q2 and a 0.3 per cent quarter-on-quarter decline in Q1 2014. Overall, the participation rate is up 0.1 per cent this quarter, compared to both Q1 and Q2 when falls were recorded.

Table 3 outlines the labour market forecasts for the remainder of 2014 and 2015. Based on the results from the most recent *QNHS* and our overall assessment of the economy, we forecast increases in the total number at work in 2014 and 2015. The unemployment rate will decrease further this year, and we forecast a rate of 9.7 per cent for 2015. We anticipate that growth in both external demand and in investment will continue to drive employment in both the Services and

Construction sectors. It is worth noting the labour-intensive nature of the Construction sector, thus, any significant pick-up in activity will have a sizable impact on unemployment rates. The decrease in net migration between 2014 and 2015 is primarily due to the forecast growth in employment.

TABLE 3 Employment, Unemployment and Net Migration

	Annual Averages, 000s			
	2012	2013	2014	2015
Agriculture	86	107	110	110
Industry	336	342	347	368
of which: Construction	102	102	109	118
Services	1,421	1,431	1,453	1,485
Total at work	1,842	1,880	1,913	1,962
Employment Growth Rate, %	-0.7	2.0	1.8	2.6
Unemployed	316	282	244	210
Labour Force	2,154	2,163	2,157	2,172
Unemployment Rate, %	14.7	13.0	11.3	9.7
Participation Rate, %	59.9	60.2	60.0	60.5

Sources: Central Statistics Office and ESRI Forecasts.

Earnings

Preliminary estimates from the CSO on Earnings and Labour Costs for Q3 2014 reveal that Average Hourly Earnings continue to decrease and are down a further 1.4 per cent over the year. This compares with a revised decrease of 2.2 per cent in Average Hourly Earnings in the year to Q2 2014 from €22.01 to €21.53 per hour.

In the year to Q3 2014 Average Hourly Earnings have increased in five of the 14 sectors. The largest percentage increase was recorded in the Industry sector, up 2 per cent while the largest percentage decrease in Average Hourly Earnings was recorded in the Professional, Scientific and Technical Activities sector, down 6.1 per cent.

The estimated number of persons employed in the public sector showed a reduction of 1.6 per cent over the year to Q3 2014 with the largest percentage decrease recorded in the Health sector (3.7 per cent). As in previous *Commentaries*, we assume that the falling numbers in the public sector may help

to explain the aforementioned falling Average Hourly Earnings. If those leaving employment earned above the average wage then this change in the composition of the public sector workforce would inevitably lower the average earnings in this sector.

We forecast growth in average earnings of 1 per cent for 2015. It is worth noting that in the case of Agriculture, Forestry and Fishing estimates of employment are sensitive to sample changes over time. This is a result of the incremental introduction of the new sample based on the 2011 Census of Population over the period Q4 2012 to Q4 2013.³ Some caution is warranted in the interpretation of trends involving the period of its introduction as it lowers non-agricultural employment growth, raising our average earnings forecast. We forecast current transfers (social welfare payments) to fall in 2014 and 2015, in line with the continued increase in employment as well an increase in current disposable income in both years.

TABLE 4 Personal Disposable Income

	2012	2013	2014	2015
	€ bn	€ bn	€ bn	€ bn
Agriculture etc.	3.0	3.0	3.1	3.2
Non-Agricultural Wages	69.5	71.9	73.1	75.8
Other Non-Agricultural Income	14.3	15.2	17.4	19.9
Total Income Received	86.9	90.1	93.5	98.9
Current Transfers	25.1	24.5	24.1	23.7
Gross Personal Income	111.9	114.6	117.6	122.6
Direct Personal Taxes	24.5	25.3	27.0	28.0
Personal Disposable Income	87.4	89.3	90.6	94.6
Consumption	82.5	83.3	85.0	87.6
Personal Savings	4.9	5.9	5.6	7.0
Savings Ratio	5.6	6.6	6.1	7.4
Average Tax Rate (%)	21.9	22.0	22.9	22.7

Sources: Central Statistics Office and ESRI Forecasts

³ See Conefrey, T. and Linehan, S., "Recent Employment Recovery," Central Bank of Ireland *Quarterly Bulletin* Q2, April 2014.

Prices

In October, annual inflation in Ireland fell to 0.2 per cent according to the Consumer Price Index (CPI) and to 0.4 per cent when measured by the Harmonised Index of Consumer Prices (HICP). CPI core inflation, excluding Energy and Unprocessed Food, was 0.5 per cent however, reflecting the impact of falling energy prices discussed in Chapter 1. Inflation in Ireland is also affected by falling mortgage interest payments; excluding these, the inflation rate was 0.8 per cent year-on-year in October. The prevalence of tracker mortgages in Ireland has meant the reductions in the ECB policy rate have resulted in lower mortgage payments for Irish households. Recently, Allied Irish Bank (AIB) decided to also pass through a rate reduction to its variable rate mortgage holders.

The Residential Property Price Index, on the other hand, has seen double-digit rates of inflation in recent months. Nationally, house prices rose by 16.3 per cent annually in October, while in Dublin they rose by 24.2 per cent. The CPI also showed that private rents also rose by 8.9 per cent in the year to October.

Our forecasts for the CPI, HICP and Personal Consumption Deflator for 2014 and 2015 are set out in Table 5. We expect inflation to remain low in Ireland in 2015 but to rise slightly compared with 2014.

TABLE 5 Inflation Measures

	2012	2013	2014	2015
	Annual Change			
	%	%	%	%
CPI	1.7	0.5	0.3	0.5
Personal Consumption Deflator	0.6	1.7	0.5	1.0
HICP	1.9	0.5	0.4	0.6

Sources: Central Statistics Office and ESRI Forecasts.

Consumption

Retail sales rose by 5.6 per cent in volume terms year-on-year in October 2014. There has been annual volume growth in excess of 5 per cent in each month this year, while October 2013 was the last month to register an annual volume fall in sales. Retail sales grew by 4.6 per cent annually in October when car sales are excluded from the total. Car sales have provided a large contribution to the growth in retail sales in 2014; 89,915 new private cars were licensed in the first ten months of 2014, a 29.6 per cent increase over the same period in 2013. In

addition, there has been a 48.4 per cent increase in the licensing of new goods vehicles. In 2014 there has also been a 7.8 per cent increase in the licensing of second-hand (imported) private cars and a 24.8 per cent increase in second-hand goods vehicles.

The three-month moving average of the KBC Ireland/ESRI *Consumer Sentiment Index* fell slightly in November and October. The November value of 87.9 for the moving average compares with values of 73.4 in November 2013 and 61.6 in November 2012, however. There has been a consistent trend towards an increase in consumer confidence over the last two years. The sub-indices which examine perceptions of the current state of the economy and expectations for future developments have also consistently risen over this period.

Our outlook for private consumption is still conditioned somewhat by the relatively high levels of household debt still prevalent in the Irish economy. Consequently, some amount of deleveraging is still set to occur as households continue to repair their impaired balance sheets. Therefore, we expect growth in private consumption of 1.5 and 2.0 per cent in 2014 and 2015 respectively.

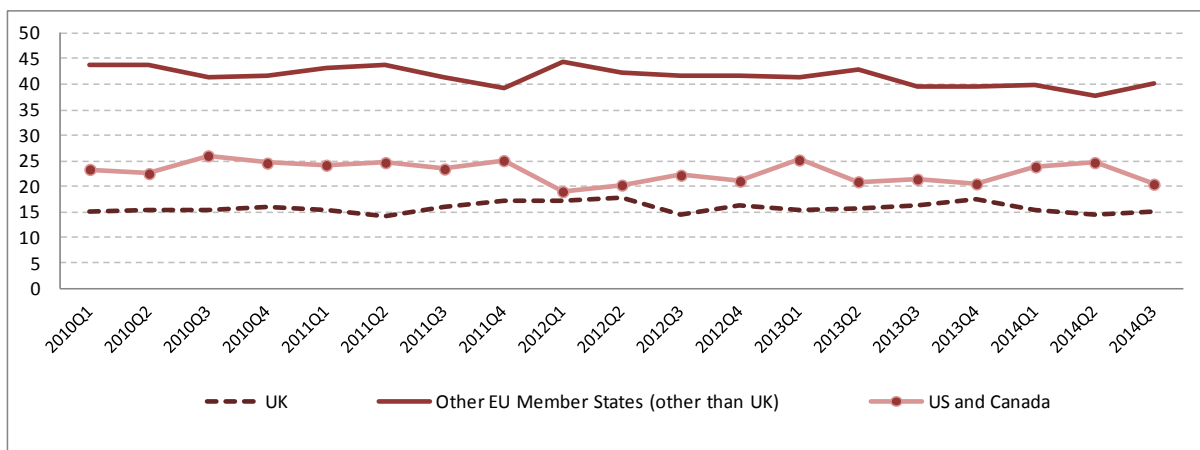
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Exports, Imports and the Balance of Payments

Both exports and imports of goods were down by 4 per cent (in volume terms) in September 2014 from the previous month. Overall, however, the value of goods exports increased by 8 per cent in the year to September 2014, while imports over the same period increased by 10 per cent.

Much of the annual growth in goods exports has been driven by increases in Medical and Pharmaceutical products (22 per cent) and Essential Oils (25 per cent) which is further confirmation of the strong role played by the Pharmaceutical sector in the export led recovery. While the Investec Purchasing Managers’ Index continued to increase in November, indicating a broad improvement in conditions across much of the Irish economy, the sub-index measuring new services exports fell to a five-month low of 60.0 from 60.6 a month earlier. The main drivers behind the annual growth in goods imports are Petroleum and related products which increased by 40 per cent and Machinery Specialised for Particular Industries which grew by 148 per cent.

FIGURE 2 Proportion of Total Exports to UK, USA and Canada and Other EU Member States (%)



Source: Central Statistics Office.

Figure 2 plots the proportion of total Irish exports to the United States and Canada, the United Kingdom and Other EU Member States. As noted in Chapter 1, the outlook for the US and UK is quite positive and provides an added boost for

Irish exporters. Exports to the US, in particular, have continued to strengthen which may be linked to the issue of “contract manufacturing”, discussed in more detail in Chapter 2. Despite the fact that goods exports to the US are down almost 20 per cent quarter-on-quarter, overall there has been growth in this market of over 4 per cent for the period January to September 2014 compared with the same period in 2013.

The outlook for European growth is somewhat different and this constitutes one of the most significant risks to Irish growth in 2015. As can be seen from Figure 2, a significantly higher proportion of Irish exports go to European as opposed to UK or US destinations. For example, in the first nine months of 2014 exports to the Euro Area are down almost 4 per cent compared to the same period in 2013. As noted in Chapter 1, growth prospects for the Euro Area are an increasing concern, with the International Monetary Fund (IMF) now estimating a 40 per cent probability that the currency union will slip into recession for the third time since the financial crisis.

We anticipate that the slowdown in the Euro Area will have some impact on Ireland’s exports in 2015. We forecast growth in merchandise exports of 7.5 per cent in 2014 and 7 per cent in 2015. We also forecast total services exports to grow by 3.6 per cent this year and 3 per cent in 2015. Overall, however, we believe the volume of total exports will increase by 5.6 per cent in 2014 and 5.1 per cent in 2015.

TABLE 6 Exports of Goods and Services

	2012	2012	2013	2014	2015
	Value	Volume Change			
	€ bn	%	%	%	%
Merchandise	97.1	1.0	-4.1	7.5	7.0
Services:					
Tourism	3.0	-3.3	10.6	4.0	3.4
Other Services	82.5	1.2	6.9	3.6	3.0
Total Services	85.5	9.2	7.0	3.6	3.0
Exports of Goods and Services	182.5	4.7	1.1	5.6	5.1

Sources: Central Statistics Office and ESRI Forecasts.

Previous *Commentaries* have noted difficulties with the interpretation of Irish trade data. This is a particular issue for imports at the moment owing to the substantial aircraft purchases by Ryanair. In September 2014, Ryanair began importing 180 new planes which will, over time, add between €1 and €1.5 billion

to the national import. These issues are taken into account in our forecasts and we expect growth of 4.5 per cent in the volume of imports for 2014 and 2015.

TABLE 7 Imports of Goods and Services

	2012	2012	2013	2014	2015
	Value	Volume Change			
	€ bn	%	%	%	%
Merchandise	54.6	7.0	3.7	7.2	7.2
Services					
Tourism	4.6	-7.1	0.5	1.2	1.2
Other Services	87.9	8.9	-1.3	2.8	2.8
Total Services	92.5	6.8	-1.2	2.7	2.7
Imports of Goods and Services	147.1	6.9	0.6	4.5	4.5

Sources: Central Statistics Office and ESRI Forecasts.

A Balance of Payments current account surplus of 6.3 per cent of GDP was recorded in Q2 2014. In 2014 and 2015 we envisage a further improvement in the current account surplus at 5.4 per cent of GNP in 2014 and 6.2 per cent of GNP in 2015. When account is taken of the redomiciled PLCs⁴ (an issue commented upon extensively in the *Autumn Commentary*) the current account surplus is forecast to be 0.7 per cent of GNP in 2014 and 1.7 per cent in 2015. Therefore, notwithstanding the growing relevance of domestic considerations such as investment and consumption over the next year, net foreign demand is expected to continue to be a cornerstone of future growth in the Irish economy.

⁴ Over the last few years a number of companies have relocated their headquarters to Ireland without generating any real activity in the economy in terms of employment or purchases of domestic inputs. These companies, referred to technically as redomiciled PLCs, hold major investments elsewhere in the world but they have established a legal presence in Ireland. This means that their profits are paid to them in Ireland even though, under double taxation agreements, their tax liability arises in other jurisdictions.

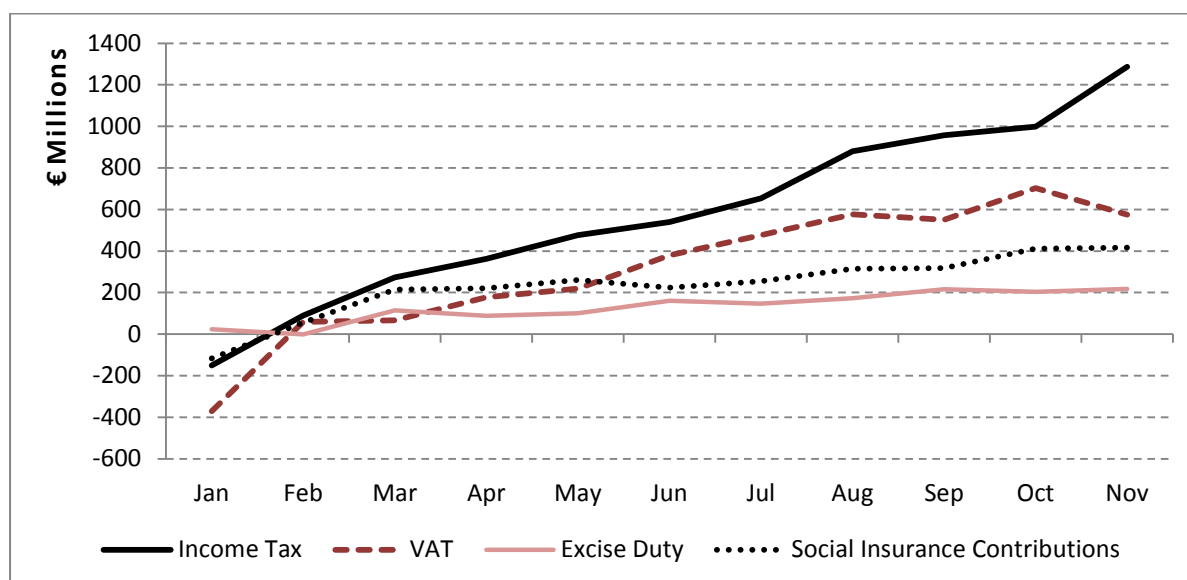
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Public Finances

A feature of the strong performance of the Irish economy in 2014 has been the consistent, better than expected, returns across all of the main taxation categories. Figure 3 shows the cumulative differences between receipts in 2014 and 2013 for Social Insurance Contributions and the three largest tax headings, Income Tax, Value-Added Tax and Excise Duty. The improvement in returns through 2014 is clearly evident. Overall, by end-November 2014, total taxation receipts were €38.2 billion, an increase of 8.5 per cent or approximately €3 billion, compared with the first 11 months of 2013. The significant economic growth forecasts in *Commentaries* to date in 2014 have been underpinned by the evidence of an increasing rate of taxation receipts.

The increasing rate of taxation receipts has been one of the key factors underpinning the significant growth rates in the economy forecast in the *Commentaries* to date in 2014.

FIGURE 3 Year-on-year Changes in Receipts for Key Taxation Items



Source: Department of Finance.

Notes: Receipts are cumulative to the given month. Social Insurance Contributions include PRSI and NTF.

Reasons for Strong Tax Performance in 2014

The increased rate of car sales through 2014 is one of the likely reasons for the strong performance in VAT returns, which are €600 million higher in 2014 than 2013. Positive developments in the labour market are responsible for the relatively high returns in Income Tax and Social Insurance Contributions. This relationship is particularly strong for the latter item. As Figure 3 shows, income tax receipts are approximately €1.3 billion higher thus far in 2014, while Social Insurance Contributions have increased by €400 million.

TABLE 8 Public Finances

	2013	2014	2014	2015	2015
	€bn	€bn	% change	€bn	% change
Income					
Taxes on income incl. Social insurance	30.5	32.1	5.3	33.4	4.0
Taxes on expenditure	19.0	20.9	9.8	21.8	4.4
Gross trading and investment income	4.0	3.3	-15.6	3.1	-6.7
Other Income	3.4	3.1	-8.1	3.2	1.9
Total receipts: Current	56.9	59.5	4.5	61.6	3.5
Total receipts: Capital	0.5	0.6	18.7	0.7	15.6
Total receipts: Current and Capital	57.5	60.1	4.7	62.3	3.6
Expenditure					
Subsidies	1.5	1.6	3.8	1.8	16.0
National debt interest	7.7	7.5	-2.4	7.4	-1.3
Transfer payments	28.2	27.8	-1.5	27.4	-1.3
Expenditure on Goods and Services	26.7	26.1	-2.0	26.3	0.8
Total expenditure: Current	64.1	63.0	-1.7	63.0	0.0
Total expenditure: Capital	3.4	3.7	8.5	4.1	10.7
Total expenditure: Current and Capital	67.5	66.7	-1.2	67.1	0.6
General Govt. Balance	-10.0	-6.5		-4.7	
As % of GDP	-5.7	-3.5		-2.4	

Sources: Central Statistics Office and ESRI Forecasts.

In terms of the outlook for different taxation items in 2015, one key issue is likely to be the performance of the Property sector. Addison-Smyth and McQuinn (2010)⁵ demonstrated a strong link between the housing components of VAT, Capital Gains Tax (CGT) and stamp duties and key housing indicators such as prices and supply levels. Given the price increases forecast in McQuinn (2014),⁶ and the improved outlook for housing supply expected in 2015, these taxation items could also see significant growth in 2015. Table 8 contains our forecasts for

⁵ Addison-Smyth, D. and McQuinn, K. (2010). "Quantifying Revenue Windfalls from the Irish Housing Market", *The Economic and Social Review*, Economic and Social Studies, vol. 41(2), pp. 201-233.

⁶ McQuinn, K. (2014). "Bubble, Bubble Toil and Trouble? An Assessment of the Current State of the Irish Housing Market", Special Article in *Quarterly Economic Commentary*, Summer 2014.

the public finances in 2015. Total receipts are forecast to grow by 3.6 per cent, with taxes on income growing by 4 per cent.

In terms of expenditure, the total cost to the Exchequer of servicing the national debt was €7,385 million at end-October 2014, constituting a year-on-year increase of €178 million or 2.5 per cent. Interest expenditure, which is the largest component of debt servicing costs, was 5.7 per cent below the Budget 2014 consistent profile at end-October 2014. This is primarily due to the December 2013 bond buy-back which resulted in lower interest expenditure in the early part of 2014, lower than expected costs from bond issuance so far this year, and a favourable rate reset on the floating rate bonds post-Budget last December. Transfer payments are forecast to fall by 1.3 per cent in 2015 due to continued labour market recovery.

Budgetary Changes

The Autumn *Commentary* suggested a neutral fiscal budget. This, we felt, struck the right balance between the need to maintain fiscal discipline and in particular meet the 3 per cent deficit target in 2015 with the clear need to encourage and foster the recovery in the economy. We advocated an increase in capital expenditure on social housing of approximately €500 million, which we projected would be offset by the increase in water charges set to be imposed in 2015. While there was a specific commitment to social housing in the measures announced, most of the budgetary changes introduced consisted of reforms to the taxation system. This strategy is somewhat questionable given that the economy is still spending more than it is taking in revenue. It now appears that the budget was stimulatory to the tune of approximately €1 billion.

The revenue impact of water charges is now likely to be less positive than previously expected. Lower revenues from water charges must be offset by a compensatory increased subvention from the Exchequer, as can be seen in the forecast increase in subsidies in Table 8. As a result of these expenditure increases, we have revised our forecast deficit for 2015 to 2.4 per cent of GDP, from a forecast 2.1 per cent in our Autumn *Commentary*. Irish Water is also set to face a market capitalisation test from the European Commission. If it fails to receive at least 50 per cent of its revenue from private sources, its borrowing must be included in the General Government Deficit, which poses a further risk to the 2015 deficit forecast.

6

Monetary and Financial Sector Developments

Stress Testing

The results of the Comprehensive Assessment (CA) carried out by the ECB were released in late October 2014. The assessment comprised three distinct elements (i) an asset quality review, followed by (ii) a supervisory risk adjustment and finally (iii) a stress test. The objective of such an assessment was to enhance the transparency of European banks and to implement necessary corrective actions if required.

The stress test examined the resilience of all banks against two separate scenarios; a baseline and an adverse scenario, starting in 2014 and running to the end of 2016. Under both scenarios, the solvency ratio of each bank was analysed over the period to understand bank sensitivities given prescribed stressed economic conditions. The baseline scenario was provided by the European Commission and reflected the then-prevailing official macroeconomic forecasts while the adverse scenario represented a severe economic downturn triggered by a materialisation of the main economic risks identified by the European Systemic Risk Board.

From an Irish perspective, Permanent TSB was the only institution to fail the stress test under the adverse scenario. All other Irish banks included in the assessment - Bank of Ireland, AIB and Ulster Bank, for example - passed every aspect of the assessment. These results were anticipated in the *Autumn Commentary* given the improvements observed in house prices over the past 18 months. The increase in house prices observed has strengthened the mortgage section of Irish institutions' balance sheets.

While Permanent TSB passed the baseline scenario, it failed under the adverse scenario of the stress test at the end of 2016 leaving it with a minimum capital shortfall of €855 million. The bank claims that it has covered 80 per cent of this capital hole and indicates that it will raise the remaining capital from private investors. Of the 25 European banks that failed the CA, 13 will need to raise €25 billion of new capital. The remaining 12 banks have already covered their

shortfalls, raising more than €55 billion of new capital in the period since the tests were conducted.

In terms of evaluating the success or otherwise of the CA, some concerns have been expressed about the assumptions underpinning the results of the stress test. For example, in the adverse scenario, the outlook for both inflation and growth at 1.0 per cent and 1.2 per cent per annum looks very optimistic at this stage with no real allowance made in the analysis for the possibility of deflation. Secondly the sovereign bond yield rises in the “adverse scenario” are far smaller than the yield spikes seen in the Euro Area periphery during and in the immediate aftermath of the financial crisis.

The major issue facing the Euro Area is to what extent the results of the stress tests will help to increase bank lending to the real economy. There is some suspicion that banks, owing to the prospect of the stress tests and the need for more capital, were reluctant to lend over the past year. Therefore, with banks passing the tests, this may increase lending to some extent. However, the asset quality review component of the CA has demonstrated that European banks still have nearly €1 trillion of non-performing loans on their balance sheets, which inevitably ties up capital, thereby restricting lending capacity. Therefore any significant impact of financial intermediation on European growth is likely to be some way off.

The assessment by the European Banking Authority (EBA) was imposed with the intention of providing clarity about the health of the banking system in preparation for the Single Supervisory Mechanism (SSM) which became fully operational in early November. The SSM is a system of financial supervision comprising the ECB and the national competent authorities of each participating EU country.

The Euro Area’s 120 largest institutions have been categorised into significant institutions and less significant institutions, constituting a further step towards the integration of the European Banking sector. For significant institutions, including the larger banks operating within Ireland, for example AIB, Bank of Ireland, Permanent TSB, KBC, Ulster Bank and Rabobank, a Joint Supervisory Team, led by the ECB and consisting of both ECB and Central Bank supervisors, will directly supervise these firms.

Macro-Prudential

In early October the Central Bank proposed the introduction of restrictions on Loan-to-Income (LTI) and Loan-to-Value (LTV) ratios for Irish residential mortgages. The potential application of macro-prudential measures in the Irish property market is a welcome development since sharp increases in the supply of mortgage credit over the period 2003 - 2007 was almost certainly to blame for the Irish property boom and subsequent bust.

The purpose of an LTV restriction is to impose a requirement for borrowers to provide a minimum level of deposit based upon the value of the property. This type of policy is intended to make lenders less vulnerable in the event of property prices falling by reducing the losses in the event of a default. The Bank has proposed that a maximum of 15 per cent of loans should have LTVs in excess of 80 per cent. On the other hand, the aim of introducing an LTI limit is to reduce the risk of a borrower defaulting on a loan due to a loss of income. As such, it has proposed that a maximum of 20 per cent of loans should have LTI ratios greater than 3.5.

The Appendix to the *Commentary* sets out the submission by Duffy and McQuinn to the consultation process which appraises these proposed measures. In particular, the submission notes the necessity for a “counter-cyclical” rules-based approach to be employed in the application of these macro-prudential measures. This, it argues, is in the interests of transparency for market participants and efficacy of policy implementation. Furthermore, Duffy and McQuinn argue that were such a rule in place at present it is unlikely it would suggest the imposition of the proposed measures at this time. As noted in Duffy (2013)⁷ such rules-based systems have operated for some time in property markets such as Hong Kong.

Credit Risk and Extension

The level of mortgage arrears remains a cause for concern this quarter despite the fact that the number of mortgage accounts for principal dwelling houses (PDH) in arrears continues to decline. This is, however, masking the increasing number of PDHs that are now in arrears over 720 days. In terms of buy-to-let (BTL) mortgages, accounts in arrears of over 90 days increased during the first

⁷ Duffy D. (2013). “Should Loan-to-Value Ratios be Limited? The International Evidence”, in *Using Evidence to Inform Policy*, Lunn, P. and Ruane, F. eds., Gill and McMillan.

nine months of 2014, with a more pronounced increase among those accounts in arrears of over 720 days.

Household loan draw-downs exceeded repayments by €68 million during September 2014. This is the first month since September 2013 and only the third month since the end of 2009 that loan draw-downs have exceeded repayments. In the case of loans for house purchase, draw-downs exceeded repayments by €8 million during September, the first positive number since June 2013. However, repayments have exceeded draw-downs for house purchase by €1.8 billion for the year to date.

Non-financial corporation (NFC) loan repayments exceeded draw-downs by €514 million in September 2014 following a net decline of €367 million in August. Lending to Irish resident NFCs reported a year-on-year decline of 9.1 per cent in September 2014, following an annual decrease of 8.4 per cent in August.

Irish Sovereign Bond Yields

The Irish Government 10-year bond yield decreased to 1.56 per cent in November from 1.73 per cent in October, a significant drop from the record 14.22 per cent recorded in July 2011. Sentiment towards Irish bonds has been further improved in recent months by the prospect of the ECB buying securities to boost growth in the Euro Area economy and speed up inflation.

In light of these record low yields, the sovereign launched a 15-year debt sale in early November, raising money to repay part of its bailout loans from the IMF. The sale was Ireland's longest bond offering since it exited the Troika (European Union and IMF) bailout a year ago. The yield on the 15-year bond issued by the National Treasury Management Agency (NTMA) was 2.487 per cent. This compares to a yield of 5.472 per cent on a 15-year bond issued in October 2009.

In the short term the improvement in borrowing costs is a positive development for Irish sovereign bonds. However, as noted in previous *Commentaries*, any deterioration of international sentiment will have significant implications for the borrowing costs of both the State and domestic financial institutions.

7

General Assessment of the Irish Economy

Our forecasts suggest that the Irish economy is set to grow by almost 5 per cent in 2014 with unemployment likely to fall below 11.5 per cent. The economy has not registered growth of this magnitude since 2005. It is evident as the year has progressed that, while external demand remains a key component of the recovery, domestic contributions, and investment in particular, have become increasingly important. The strong economic performance has been mirrored by robust government receipts with almost all headline items reporting returns ahead of target for the year to November. The general government deficit for 2014 is likely to be around 3.5 per cent.

Despite the strong recovery exhibited this year, output per capita in the Irish economy is still over 6 per cent below its peak in 2006, while the relatively high rates of unemployment coupled with an albeit increasing but low investment rate indicate that there is still spare capacity within the economy. Consequently, for 2015, we believe the Irish economy will experience growth rates of approximately 4.5 per cent in both GNP and GDP with unemployment falling to just over 9.5 per cent. The economy will continue to benefit from a strong export performance while significant increases in investment are also envisaged for 2015.

While we see a significant and positive impact from foreign demand for Irish produced goods and services, we have moderated our forecast for 2015 marginally from the Autumn *Quarterly Economic Commentary* mainly in response to the continued poor outlook for the Euro Area. As noted in Chapter 1 of the *Commentary*, the Euro Area has remained in a downturn since 2008 with recent forecasts of short-term growth suggesting an increase in output of only 0.5 per cent for 2014. The section also references the proposed investment plan by the newly-elected European Commission President Jean-Claude Juncker. While full details of the plan are not yet available, a target of €315 billion has been set for investment over a three-year time horizon. The plan appears to have a significant reliance on private sector funds, which are aimed to supplement €21 billion of European public funds.

In the Research Note by Byrne and McQuinn, Irish economic performance over the period 1987 to 2013 is assessed using a growth accounting framework. The contribution to growth of capital, the labour market and improvements in total factor productivity (TFP) in Ireland is contrasted and compared with that of 14 other European countries. The note highlights the convergence theory of the Celtic Tiger phase, while illustrating the impact on the Irish labour market and investment rates of the financial crisis of 2007/08. From a regional perspective, the Research Note by Morgenroth (2014) assesses the “two-speed” recovery theory which has gained some traction recently. Morgenroth shows that a growing divergence in economic performance across Irish regions had occurred before the present recovery.

Since the Autumn *Commentary*, there have been three significant domestic policy developments:

- Budget 2015;
- the proposed introduction of macro-prudential policy measures by the Central Bank of Ireland; and
- the stress-test results announced by the ECB and EBA.

From a macroeconomic perspective, the budget can be seen as quite expansionary in nature. Reduced revenues from the significant tax reform measures announced coupled with a decline in the anticipated revenues from Irish Water mean a likely deficit in 2015 of 2.4 per cent. In the Autumn *Commentary* we had suggested a neutral fiscal policy, which prioritised expenditure on an investment as opposed to a consumption package. This would have resulted in a deficit of 2 per cent for next year. Undoubtedly, the taxation measures outlined in the budget reduces the margin of error in terms of achieving the 3 per cent deficit target in 2015. Consequently, the attainment of this target relies quite significantly on the economy achieving a strong rate of output growth. Given the downside risk posed to growth by the continued poor performance of the Euro Area, this is less cautious than we would have preferred.

The distributional implications of the budget are analysed in a Special Article in the *Commentary* by Keane, Callan, Savage, Walsh and Colgan. The paper uses a nationally representative sample of Irish households to assess both the distributional impact of the recent budget along with the impact of the set of budgets from 2009 to 2015. Overall, the results indicate that the total impact of Budget 2015, when accompanied by the impact of the revised water charges,

resulted in a decline in income of about 1 per cent for the poorest 10 per cent of households. Middle income groups experienced little change in their incomes, while there were small increases observed for high income households.

The results for the 2015 Budget are in contrast to those for the various budgets of the “austerity era”, 2009 to 2015. All households experienced losses in income due to budgetary changes during this period, with households at both ends of the income spectrum experiencing the most significant declines; the highest income group witnessed declines of about 15 and a half per cent, while the lowest income group saw a reduction of 12 and a half per cent. For most other income groups the declines were slightly less, lying around 11 per cent. Therefore, the analysis would appear to dispel the notion that middle income groups experienced the most significant decline in incomes due to budgetary changes during the economic crisis. Rather, the largest declines have been borne by the top of the income distribution with the bottom group experiencing the next largest losses.

The proposed macro-prudential measures announced by the Central Bank of Ireland in October are assessed in an Appendix to the *Commentary* by Duffy and McQuinn. The submission welcomes the principle of a macro-prudential system in an Irish context and highlights that the changes in international, wholesale finance which precipitated the Irish credit boom and bust in 2007/08 are still in place. Thus, in an increasingly integrated global and European Financial sector, a macro-prudential system is necessary for future Irish financial stability purposes. However, the submission identifies the absence of a rules-based system as a weakness in the proposals. Furthermore, it suggests that any such rules should have a counter-cyclical dimension to them. In that context, were a counter-cyclical rules-based approach adopted at the present time, it is unlikely that it would suggest the imposition of the measures proposed by the Central Bank. This is particularly pertinent, given the possible impact on housing supply which the proposed measures may have. In the interests of both efficient policy implementation and transparency, such a rule should be underpinned by regular analysis of certain key macroeconomic and housing-related indicators with the results published at frequent intervals.

Finally, the results of the Europe-wide comprehensive assessment of financial institutions by the ECB and EBA in October revealed that one Irish institution, Permanent TSB, had failed the adverse scenario of the stress test resulting in a minimum capital shortfall of €855 million. The tests themselves have been the

subject of some criticism in terms of the assumptions underpinning the analysis, particularly the adverse scenario, leading some commentators to ask “how stressful were the stress tests?”. From both a European and Irish perspective, the key issue now is whether the successful outcome for most of the financial institutions will see an increase in credit extension to the real economy through 2015. The Monetary and Financial section notes that despite some marginal increases in mortgage lending, overall credit extension to the Irish real economy remains very low with loan repayments continuing to exceed the draw-down of new loans.

Detailed Forecast Tables

FORECAST TABLE A1 Exports of Goods and Services

	2012	% change in 2012		2013	% change in 2013		2014	% change in 2014		2015
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	97.0	-5.4	-4.1	91.8	7.5	7.5	98.6	7.9	7.0	106.4
Tourism	3.0	11.5	10.6	3.4	4.5	4.0	3.5	4.4	3.4	3.7
Other Services	82.5	7.8	6.9	88.9	5.1	3.6	93.4	4.4	3.0	97.6
Exports Of Goods and Services	182.5	0.9	1.1	184.1	6.3	5.6	195.6	6.2	5.1	207.6
FISM Adjustment	0.0			0.0			0.0			0.0
Adjusted Exports	182.5	0.8	1.1	184.1	6.2	5.6	195.5	6.2	5.1	207.6

FORECAST TABLE A2 Investment

	2012	% change in 2012		2013	% change in 2013		2014	% change in 2014		2015
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Housing	3.0	6.5	3.5	3.2	8.8	5.5	3.5	28.3	24.3	4.5
Other Building	6.0	21.7	18.3	7.3	30.1	26.5	9.5	22.1	18.6	11.5
Transfer Costs	0.4	38.4	36.1	0.5	20.5	17.0	0.6	13.3	10.0	0.7
Building and Construction	9.4	17.4	14.1	11.0	23.4	19.9	13.6	23.3	19.7	16.7
Machinery and Equipment	17.6	-11.5	-11.2	15.5	12.9	10.6	17.6	10.0	7.7	19.3
Total Investment	26.9	-1.4	-2.4	26.5	17.3	14.3	31.1	15.8	12.8	36.0

FORECAST TABLE A3 Personal Income

	2012		% change in 2012		2013		% change in 2013		2014		% change in 2014		2015
	€ bn		%	€ bn	€ bn		%	€ bn	€ bn		%	€ bn	€ bn
Agriculture, etc	3.0		0.3	0.0	3.0		2.5	0.1	3.1		2.5	0.1	3.2
Non-Agricultural Wages	69.5		3.4	2.3	71.9		1.7	1.2	73.1		3.8	2.8	75.8
Other Non-Agricultural Income	14.3		6.0	0.9	15.2		14.3	2.2	17.4		14.4	2.5	19.9
Total Income Received	86.9		3.7	3.2	90.1		3.8	3.4	93.5		5.7	5.3	98.9
Current Transfers	25.1		-2.2	-0.6	24.5		-1.7	-0.4	24.1		-1.6	-0.4	23.7
Gross Personal Income	111.9		2.4	2.6	114.6		2.6	3.0	117.6		4.2	5.0	122.6
Direct Personal Taxes	24.5		3.2	0.8	25.3		6.8	1.7	27.0		3.6	1.0	28.0
Personal Disposable Income	87.4		2.1	1.9	89.3		1.5	1.3	90.6		4.4	4.0	94.6
Consumption	82.5		1.1	0.9	83.3		2.0	1.7	85.0		3.0	2.6	87.6
Personal Savings	4.9		20.3	1.0	5.9		-6.1	-0.4	5.6		25.7	1.4	7.0
Savings Ratio	5.6				6.6				6.1				7.4
Average Personal Tax Rate	21.9				22.0				22.9				22.7

FORECAST TABLE A4 Imports of Goods and Services

	2012		% change in 2012		2013		% change in 2013		2014		% change in 2014		2015
	€ bn		Value	Volume	€ bn		Value	Volume	€ bn		Value	Volume	€ bn
Merchandise	54.6		1.8	3.7	55.6		8.0	7.2	60.0		8.0	7.2	64.8
Tourism	4.6		1.3	0.5	4.7		3.7	1.2	4.8		4.7	1.2	5.1
Other Services	87.9		-0.5	-1.3	87.4		3.8	2.8	90.8		3.8	2.8	94.3
Imports of Goods and Services	147.1		0.4	0.0	147.7		5.4	0.0	155.6		5.4	0.0	164.1
FISM Adjustment	0.0				0.0				0.0				0.0
Adjusted Imports	147.1		0.4	0.6	147.7		5.4	4.5	155.6		5.4	4.5	164.1

FORECAST TABLE A5 Balance of Payments

	2012	2013	2014	2015
	€ bn	€ bn	€ bn	€ bn
Exports of Goods and Services	182.5	184.1	195.6	207.6
Imports of Goods and Services	147.1	147.7	155.6	164.1
Net Factor Payments	-31.5	-27.3	-29.0	-30.9
Net Transfers	-2.4	-2.5	-2.5	-2.5
Balance on Current Account	1.5	6.6	8.5	10.2
As a % of GNP	1.1	4.5	5.5	6.2

FORECAST TABLE A6 Employment and Unemployment, Annual Average

	2012	2013	2014	2015
	000s	000s	000s	000s
Agriculture	85.8	106.8	110.1	109.5
Industry	336	343	348	368
of which: Construction	102	102	109	118
Services	1,421	1,431	1,453	1,485
Total at Work	1,842	1,880	1,913	1,962
Unemployed	316	282	244	210
Labour Force	2,154	2,163	2,157	2,172
Unemployment Rate, %	14.7	13.0	11.3	9.7

Appendix

Assessment of Proposed Macro-Prudential Policy Measures

David Duffy and Kieran McQuinn

Introduction and Background

In this note, we assess the recent macro-prudential measures outlined by the Central Bank of Ireland. The intended policy levers, which are outlined in a Consultation Paper from the Central Bank of Ireland (2014), consist of the following two related proposals:

1. To restrict lending for primary dwelling purchase above 80 per cent loan-to-value (LTV) to no more than 15 per cent of the aggregate flow of all housing loans for principal dwelling purposes and
2. To restrict lending for primary dwelling purchase above 3.5 times loan-to-income (LTI) to no more than 20 per cent of that aggregate value.

These measures come at a time when house prices have been, since early 2013, increasing quite strongly, particularly in the Dublin area. In Figure 1 the year-on-year growth rates in both national and Dublin house prices are plotted. The increased rate of house price inflation is evident from late 2012/early 2013. However, in Figure 2 where the levels of both prices are plotted, it is clear that prices are still approximately 50 per cent below the height of the market in mid-2007.

General Assessment

In principle, the potential application of a macro-prudential suite of measures in the Irish property market is a welcome and prudent development. The Irish property boom and subsequent bust over the period 2003-2013 was almost entirely facilitated by the sharp increase in mortgage credit extended by financial institutions operating in the Irish market. Changes in international finance from 1999/2000 onwards were especially influential in an Irish context. In particular, the advent and growth in international wholesale funding by European financial institutions resulted in a significant shift in the aggregate Irish credit supply curve without any real consequences for interest rates. In Figure 3 the large gap post-2003 between lending by Irish financial institutions and deposit levels is presented, while the substantial increase in the total external debt of the Irish Banking sector is evident from Figure 4.

The far-reaching implications of this credit boom have been well documented with the ultimate consequence being the threat to the solvency of the Irish State. It is important to understand that the developments in international banking finance which led to the Irish credit boom are still in place. It is in that context that the efficient application of a macro-prudential suite of policy levers is essential in safeguarding future financial stability. Gerlach and Peng (2005) examine how regulatory changes reduced the sensitivity of bank lending to property prices in the case of the Hong Kong market, while Duffy (2013) discusses the potential benefits of a macro-prudential system in an Irish context.

However, we feel that in the interests of both efficiency of policy implementation and the transparency with which these measures are communicated to key market participants, these levers should be applied on a counter-cyclical rules basis. This is not the case with the present proposals. In that context we would question both the absence of such rules underpinning the proposed framework and the application of the proposed measures in the Irish market at the present time.

Detailed Observations on the Proposed Measures

1. It is prudent that both loan-to-value ratios and loan-to-income multiples are included in any suite of macro-prudential measures. Research by Campbell and Cocco (2011) argues that regulators and mortgage providers should think about combinations of these concepts rather than controlling these levers in isolation, while McCarthy and McQuinn (2013) provide evidence of differences in the usage of both credit channels (loan-to-values and loan-to-income ratios) by Irish credit institutions during the period 2000 to 2010. In particular, McCarthy and McQuinn (2013) demonstrate that, over the period in question, Irish institutions appear to rely more on the LTI channel as a means of extending increased levels of credit than the loan-to-value concept. In particular McCarthy and McQuinn define the income fraction (κ) as the proportion of gross income which Irish financial institutions allow mortgaged households to allocate to their mortgage repayment. The concept can be related to the LTI as follows

$$\kappa = \frac{LTI}{\left(\frac{1 - (1 + R_t)^{-\tau}}{R_t} \right)}$$

where R_t is the interest rate and τ is the duration of the mortgage. This is plotted for Irish mortgage institutions in Figure 5. The large increase in the proportion is particularly evident between 2005 and 2008.

2. An increasing body of research in the macro-prudential area now argues for the use of rules in implementing these policy levers rather than discretion. Borio and Shim (2007), Goodhart (2004) and Galati and Moessner (2012), amongst others, have highlighted the importance of rules (or built in stabilisers) as opposed to discretion in calibrating macro-prudential policy with the latter noting the necessity of rules for accountability, transparency and efficacy of policy implementation.
3. In that context, it is regrettable that no such rule has been outlined by the Central Bank in proposing these measures. Any such rule, we believe, needs to take into account cyclical patterns within the housing market i.e. the rule should be counter-cyclical in nature with policy measures being tightened if the rule indicates the presence of too much credit, for example, in the market and loosened if the opposite is the case.
4. Such a rule should be based on a number of key housing and property market related indicators. For example, a rule could be based on the following:
 - The observed growth in house prices;
 - The relationship between actual house prices and an estimate of a “fundamental” house price. The fundamental price could be based on a rent-price ratio (as in Gallin (2008)) or econometrically estimated as in McQuinn (2014);
 - The observed rate of mortgage credit growth;
 - The level of housing market activity such as the number of housing units built and the ratio of housing construction to overall national output.
5. At this point in the Irish market based on these criteria, it is not clear that the envisaged measures are fully warranted. While house price growth has been significant over the past 18 months, in McQuinn (2014), for example, the results of four standard models of Irish house prices suggest that, as of Q4 2013, Irish house prices still appear to be undervalued. This is mainly due to the very sharp and persistent fall recorded in Irish house prices between 2007 and early 2013. In Figure 6 the degree of undervaluation from the four models is plotted.
6. Furthermore, McQuinn (2014) also examines the stock and flow of mortgage credit in the domestic market. This analysis suggests that credit levels are still very low in the Irish mortgage market and are not a significant determinant of price movements at this point.

7. Finally, housing construction is at historically low levels with an average of just over 9,000 units being built in the Irish market between 2011 and 2013.
8. The key issue then is whether it is appropriate to apply the proposed measures in such a context. Both policy levers (restrictions on LTVs and LTIs) are, as a growing literature suggests, quite powerful in moderating house price inflation, therefore the introduction of these measures sends quite a strong signal to the market.
9. This is important as far as the supply-side of the market is concerned. Most commentators have identified a lack of housing supply as the main policy concern in the Irish housing market at present. Duffy, Byrne and Fitzgerald (2014) estimate that something in the region of 25,000 new households will be formed per annum in the medium-term. Given the already very low levels of housing construction, there is a danger that the adoption of these measures may have additional, adverse implications for future residential supply. Both property developers and financial institutions may be concerned about movements in future prices and the potential affordability of prospective mortgagors.
10. Alternatively, a counter-cyclical rules-based approach to macro-prudential policy could help to anchor house price expectations going forward. A potential range could be identified for both LTVs and LTIs and the maximum amount of each lever on that range permissible by the Regulator would be established at any point in time on the basis of a counter-cyclical rule. From a housing supply perspective, this would have the highly desirable effect of removing significant fluctuations in house price movements and consequently enabling financiers and property developers alike to plan housing supply decisions in a more stable and sustainable manner.
11. Overall, in the interests of policy efficiency and transparency, any such rule should be on the basis of a regular assessment of the indicators discussed in point 4 with the results of the relevant analysis published.
12. Ultimately, if such a rule were successful, it could potentially have quite a significant stabilising influence on price expectations within the market.

References:

Borio, C. and Shim, I. (2007). "What can (macro) prudential policy do to support monetary policy?", Bank of International Settlement (BIS) Working Paper No. 242.

Campbell, J.Y. and Cocco, J.F. (2011). A Model of Mortgage Default, National Bureau of Economic Research (NBER), Working Paper No. 17516.

Central Bank of Ireland (2014). "Macro-prudential policy for residential mortgage lending", Consultation paper CP87, October.

Duffy, D. (2013). "Should Loan-to-Value Ratios be Limited? The International Evidence", Chapter 3 in P. Lunn and F. Ruane (eds.), *Using Evidence to Inform Policy*, Gill & Macmillan.

Duffy, D., Byrne, D. and Fitzgerald, J. (2014). "Alternative Scenarios for New Household Formation in Ireland", Special Article in *Quarterly Economic Commentary*, Spring.

Galati, G. and Moessner, R. (2012). "Macroprudential policy - A literature review", *Journal of Economic Surveys*, published online May 11.

Gallin, J. (2008). "The Long-Run Relationship between House Prices and Rents" *Real Estate Economics*, vol. 36, no. 4, pp. 635-658.

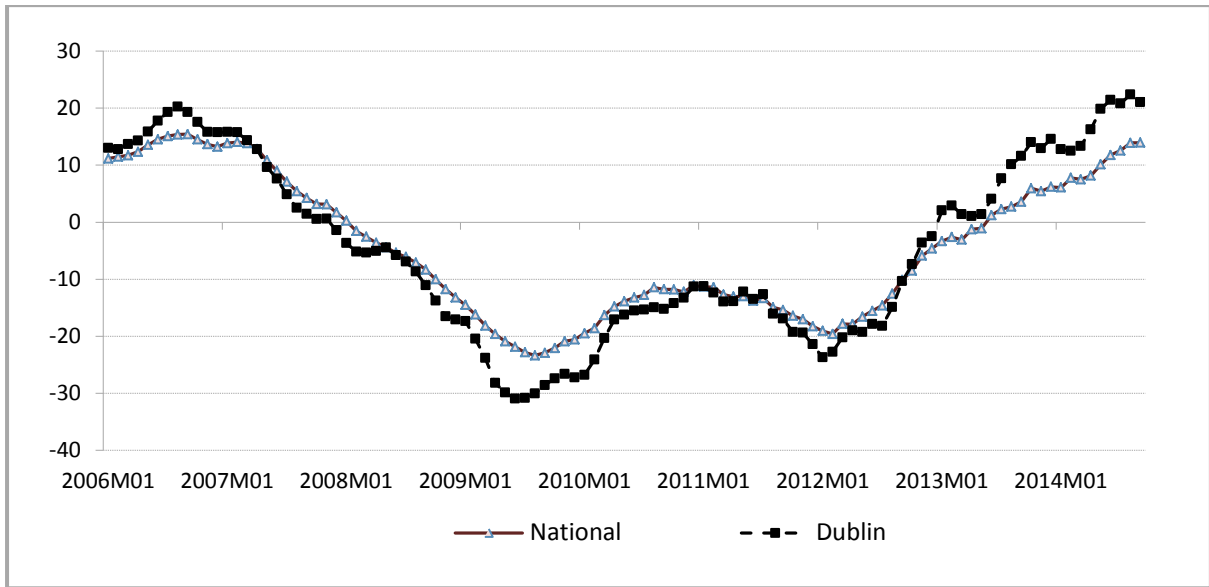
Gerlach, S. and Peng, W. (2005). "Bank lending and property prices in Hong Kong", *Journal of Banking and Finance*, Vol. 29(2), pp. 461-481.

Goodhart, C.A.E. (2004). "Some New Directions for Financial Stability?", The Per Jacobsson Lecture, Zurich, Switzerland, 27th June.

McCarthy, Y. and McQuinn, K. (2013). "Credit conditions in a boom and bust property market", *Central Bank of Ireland Research Technical Paper*, 8/RT/13, 2013.

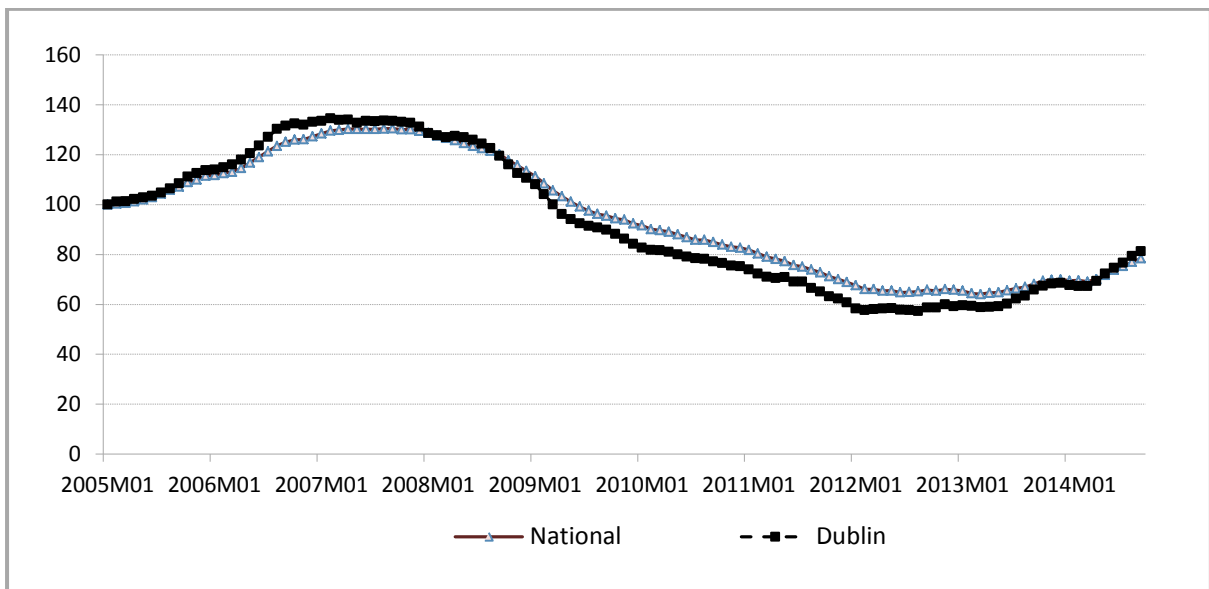
McQuinn, K. (2014). "Bubble, Bubble, Toil and Trouble? An Assessment of the Current State of the Irish Housing Market", Special Article in *Quarterly Economic Commentary*, Summer, Dublin: The Economic and Social Research Institute, August 2014.

FIGURE 1 Year-on-Year Changes (%) in Irish House Prices (Nominal) 2006:1 - 2014:9



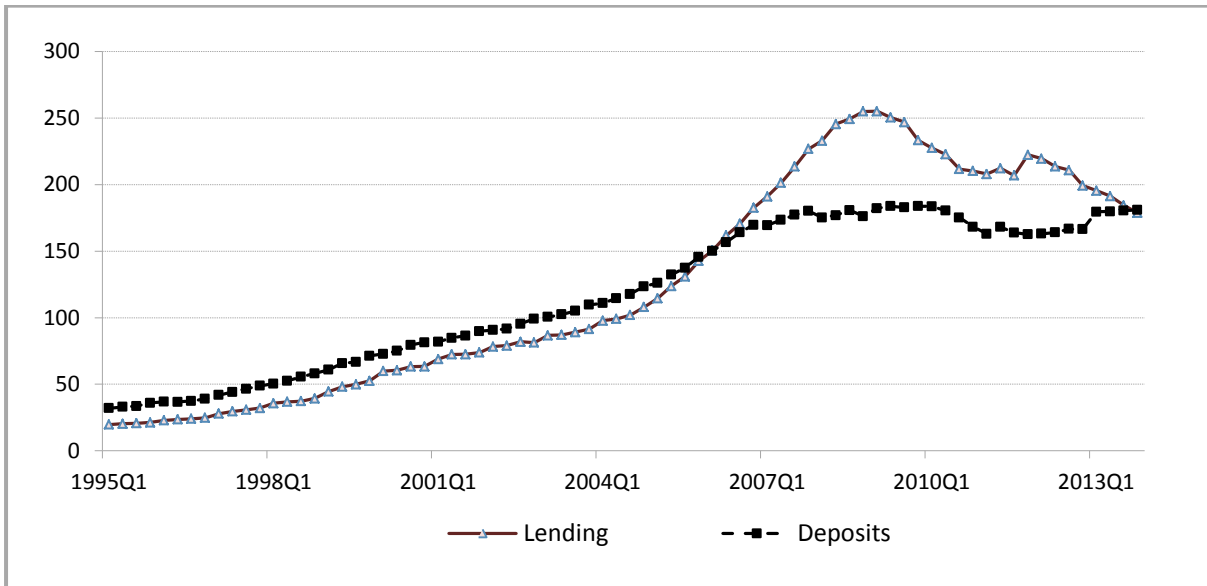
Source: Central Statistics Office.

FIGURE 2 Irish House Price (Nominal) Levels (Index 2005 =100) 2005:1 - 2014:9



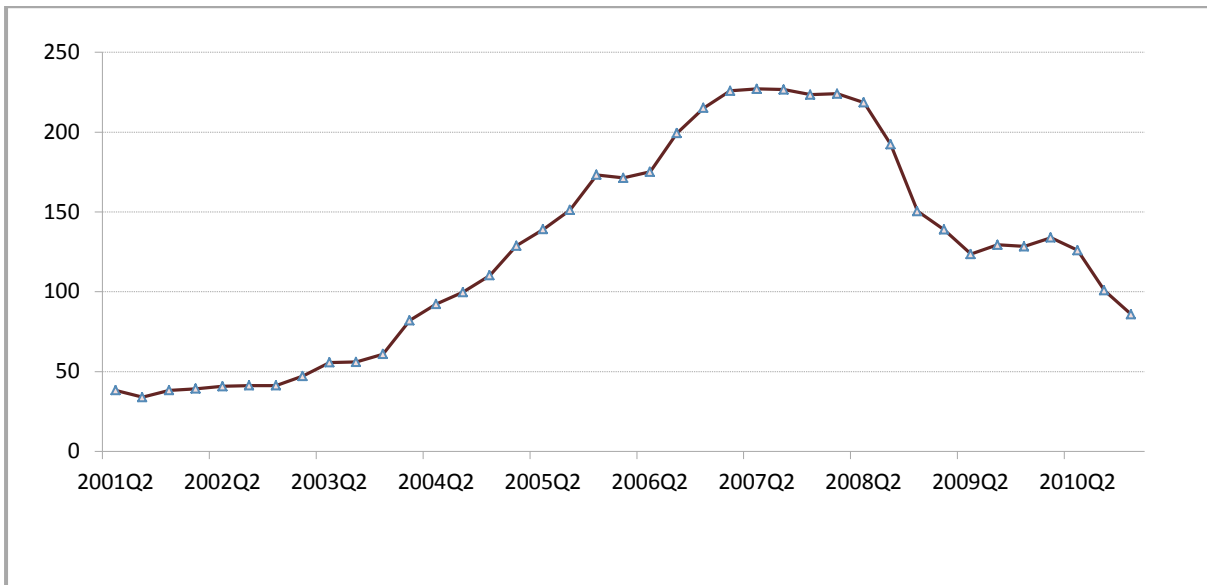
Source: Central Statistics Office.

FIGURE 3 Private Sector Lending and Deposits (€ 000 millions) to the Irish Economy 1995 Q1 - 2013 Q1



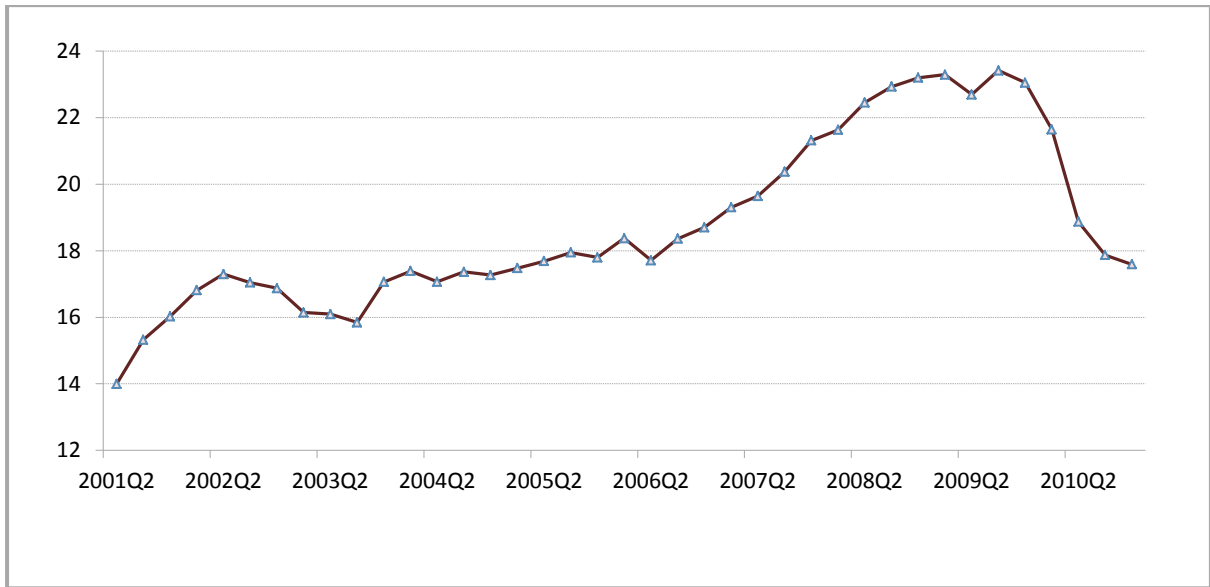
Source: Central Bank of Ireland.

FIGURE 4 Total External Debt of the Irish Banking Sector (€ 000 millions) 2001 Q1 - 2010 Q2



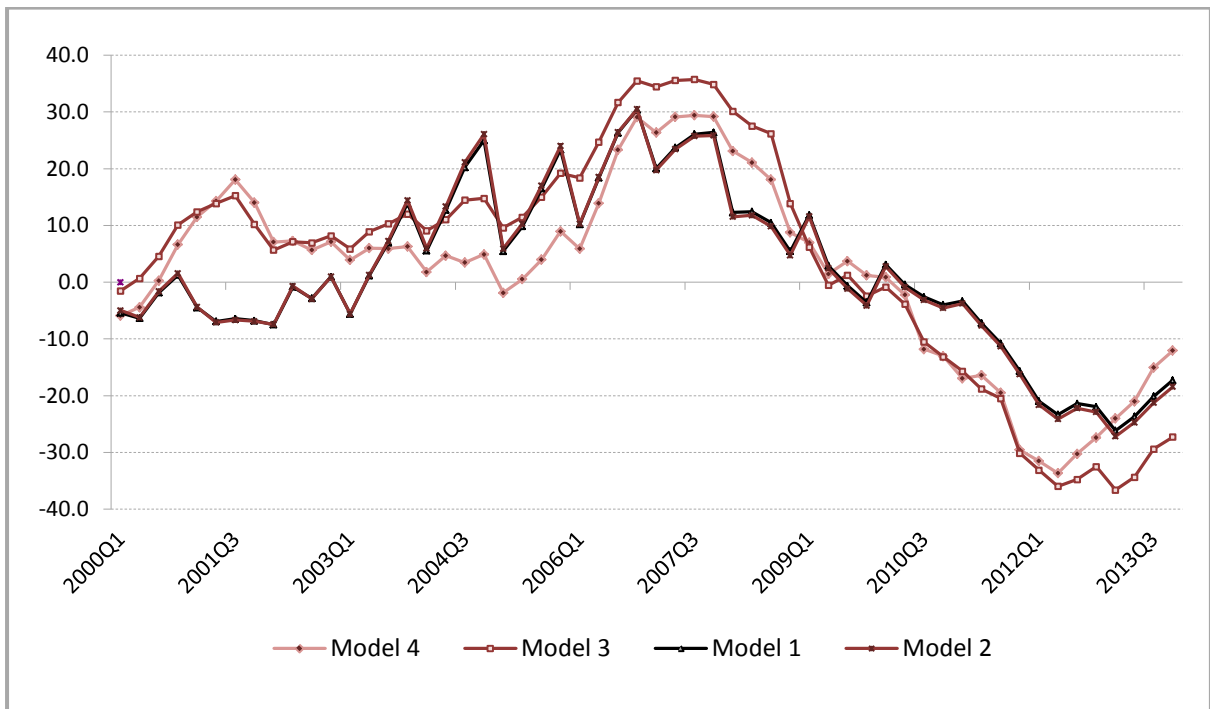
Source: Central Bank of Ireland.

FIGURE 5 Average Mortgage Income Fraction (%) of Irish Financial Institutions 2000 Q2 - 2010 Q4



Source: McCarthy and McQuinn (2013).

FIGURE 6 Percentage Difference between Actual and Fundamental Prices 2000 Q1 - 2013 Q4



Source: McQuinn (2014).

Special Article

Distributional Impact of Tax, Welfare and Public Service Pay Policies: Budget 2015 and Budgets 2009-2015

Claire Keane, Tim Callan, Michael Savage, John R. Walsh and Brian Colgan¹

Abstract

This article analyses the impact of Budget 2015 on a nationally representative sample of households, taking into account the effects of the revised water charges. We also examine the overall impact of budgets since the start of the crisis. We measure the impact by comparing actual policy with a distributionally-neutral budget, indexed in line with expected wage growth. Compared with this benchmark, we find that at an aggregate level, household incomes net of tax, PRSI, USC and water charges were broadly unchanged by Budget 2015. However, there were differences across income groups. Net incomes for the 10 per cent of households with the lowest incomes are expected to be close to 1 per cent lower under 2015 policy than under an indexed 2014 policy. Net incomes for middle income groups will see little change, while there will be small percentage gains for high income households; just over half of one per cent for the top income group.

The overall impact of the set of budgets for 2009 to 2015, is quite different. These budgets led to substantial income losses at all income levels: we call these “policy induced losses” to distinguish them from income losses arising from other sources, e.g., unemployment, lower wages, and falling self-employment incomes. Over much of the income range, there are broadly similar percentage losses for each income group. But the greatest percentage losses are for the highest income group (about 15 and a half per cent) and the lowest income group (close to 13 per cent). For most other income groups, the income loss was in a narrow range, between 10 and 11 per cent.

¹ We thank CSO for access to SILC data on which the SWITCH tax-benefit model is based. We are grateful to Sean Lyons and Anne Pentecost for estimates of the distributional impact of indirect taxes, as described in the Appendix. We thank an anonymous reader for comments; any remaining errors are the responsibility of the authors.

Introduction

In this article we focus on the distributional impact of the main tax and welfare measures in Budget 2015. We also take account of the transition from full tax-financing of water services to a system with water charges, as per the revised system announced on 19 November. Budget 2015 is, of course, the latest instalment in a series of budgets designed to bring the government deficit and debt under control. We look therefore, not just at this latest instalment, but also at the cumulative impact of all budgets from October 2008 onwards.²

We use SWITCH, the ESRI tax-benefit model,³ 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.⁴ The areas covered by SWITCH, including income tax, social insurance, property tax, welfare benefits and public service remuneration,⁵ account for the bulk of the impact of budgetary policy changes on households' cash incomes in recent years. This year the model is further extended to deal with water charges. 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 that framework. Last year we used a number of experimental approaches (Callan *et al.*, 2013) to extend the coverage of the analysis to take account of indirect tax changes and some specific policy changes where direct evidence is not available within SILC.⁶ We continue to use these approaches here in our analysis of budgetary impacts across the income distribution.

Most tax-benefit models internationally focus on income-related taxes, Social Insurance Contributions and cash benefits. As well as capturing these standard elements, the SWITCH model goes beyond this to include a range of issues not commonly dealt with by international models. The model has been extended to include property tax, public service pay and water charges; and post-model adjustments help to deal also with indirect taxes, DIRT and some reliefs related to

² Budget 2015 broke from the pattern of contractionary budgets; when the impact of water charges is taken into account, the overall net impact on household incomes is broadly neutral.

³ See Callan *et al.* (2012) for a full description of the model.

⁴ While selected examples can illustrate particular points, they are unable to provide a broadly representative picture of the impact of tax and welfare policy changes.

⁵ Public sector pay cuts formed part of the austerity package, and are included in our analysis as their structure incorporated a distributional motivation, and their cash impact can be traced. Keane *et al.* (2014) present results which identify the separate impacts of tax increases, welfare cuts and public sector pay cuts.

⁶ The methods referred to deal with the introduction of a carbon tax and a later increase in its rate; changes to VAT; increases in the Deposit Interest Retention Tax (DIRT); restrictions on pension tax reliefs for high income earners; restrictions on tax relief for medical insurance premia; and increases in Capital Gains Tax (CGT). For further details see Callan *et al.* (2013b).

pension contributions and health insurance. The breadth of this analysis compares favourably with most international models.

In this analysis we do not attempt to measure the impact of cuts in public services on households at different income levels. While this is an important area, it raises complex questions as to the appropriate concepts and measures to use, as pointed out by O’Dea and Preston (2012) and by Callan and Keane (2009). Analysis of the impact of changes in public services is at a much less advanced stage internationally. 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 questions about the assumptions made, and propose some alternative methods; but these methods have yet to be implemented. There is no agreed standard methodology for the attribution of benefits from public spending to households. This is an area in which considerable further research is needed, but it is not one in which there is an agreed international approach which can simply be applied to Ireland. Work on the SWITCH Research Programme⁷ in the areas of health and housing can contribute to enhancing understanding of the issues. The present article, like most international assessments of the distributional impact of policy, is focused on taxes and transfers, which have a clearer cash value, rather than on services, for which there are separate and substantial problems of valuation and attribution.

The results we obtain relate to the “cash” or “first round” effects of policy changes, before any adjustments in individual behaviour such as changes in employment status or hours of work. This is by far the most common approach internationally (for example, this is the approach taken by the UK’s Institute for Fiscal Studies in its post-budget assessment, and by the Brookings/Urban Institute’s Tax Policy Center in the US in assessing new policy proposals). In other work (e.g., Savage *et al.*, 2014) we highlight the impact of tax and welfare changes on financial incentives to work such as marginal tax rates and replacement rates. The extent and nature of response to these financial incentives has also been examined in Layte and Callan (2001) and in Callan *et al.* (2009). The findings of such research need also to be taken into account when policy is trying to balance the sometimes conflicting objectives of equity and efficiency.

⁷ See www.esri.ie/research/research_areas/taxation-welfare-and-pens/.

Measuring the Distributional Impact of Policy

Who has gained and who has lost from the measures included in Budget 2015, and the associated water charges? What has been the overall impact of the austerity budgets over the past seven years? Analysis based on selected example households⁸ is common in immediate post-budget commentary, but this can never give us an overall picture of the impact of the budget for the population as a whole: it fails to take into account how common or uncommon these household types are in the population. To get an accurate overall picture of the impact of tax and welfare policy changes we need to do the calculations for large numbers of real households in a nationally representative sample. The ESRI tax-benefit model (SWITCH) allows us to do this: it estimates the impact of direct tax and welfare changes using anonymised data from the CSO's SILC.

The impact of policy change must be measured against an alternative specifying what would happen if the policy change did not take place (a “counterfactual” policy). In the construction of budgets, the official procedure constructs an “opening budget” against which changes are measured. For tax and welfare the conventional opening budget simply freezes tax rates, credits and welfare payments at their existing levels. While this is useful in accounting terms, it would be highly misleading in an analysis of distributional impact.⁹ In normal times, with nominal wages, prices and real wages all showing positive growth, implementing the conventional opening budget would lead to real income *losses* for those dependent on welfare, while further up the income distribution incomes would *rise*. (Callan *et al.* (2001), Bargain and Callan (2008)).¹⁰ 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 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 2015 are based on

⁸ For example, a one-earner couple with two children.

⁹ For a more detailed exposition, see Callan *et al.* (2001).

¹⁰ When wages are falling, the conventional benchmark would give rise to income gains for welfare recipients and income losses for those in employment.

forecast wage growth of 1.4 per cent for 2015. This is an average of wage growth forecasts by the ESRI's *Quarterly Economic Commentary* (Duffy *et al.*, 2014) and the Central Bank's *Quarterly Bulletin* (Central Bank of Ireland, 2014.). Similarly, for income growth between 2008 and 2015 we use figures on wage growth from the CSO's Earnings, Hours and Employment Costs Survey for the available years (2009 to 2013) and the average of the wage forecasts from the ESRI's *Quarterly Economic Commentary* and the Central Bank's *Quarterly Bulletin* for 2014 and 2015. The net result is that growth in wages between 2008 and 2015 is expected to be less than half of one 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 household size and composition, i.e., income per adult equivalent or "equivalised income".¹¹

Water Charges

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

Assessing the net balance between tax cuts and water charges requires a tax-benefit model to arrive at a clear overall picture, as administrative statistics do not permit this. The proposals regarding water announced on Budget day included a payment to those in receipt of a Household Benefit Package or Fuel Allowance, and a tax credit. SWITCH estimates suggested that this would reach 88 per cent of households. The revised water policy now makes provision for what is termed a "Water Conservation Grant" of €100, thus reaching the remaining 12 per cent of households. Charges are now capped at €160 for a one-adult household and €260 for a multi-adult household. The net effect is a low net price to the consumer, with a dual rate structure: when the €100 grant is factored in, this means a net payment of €60 for a one-adult household and €160 for a multi-adult household. Our analysis includes these net costs for each household.

¹¹ 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.

Budget 2015

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

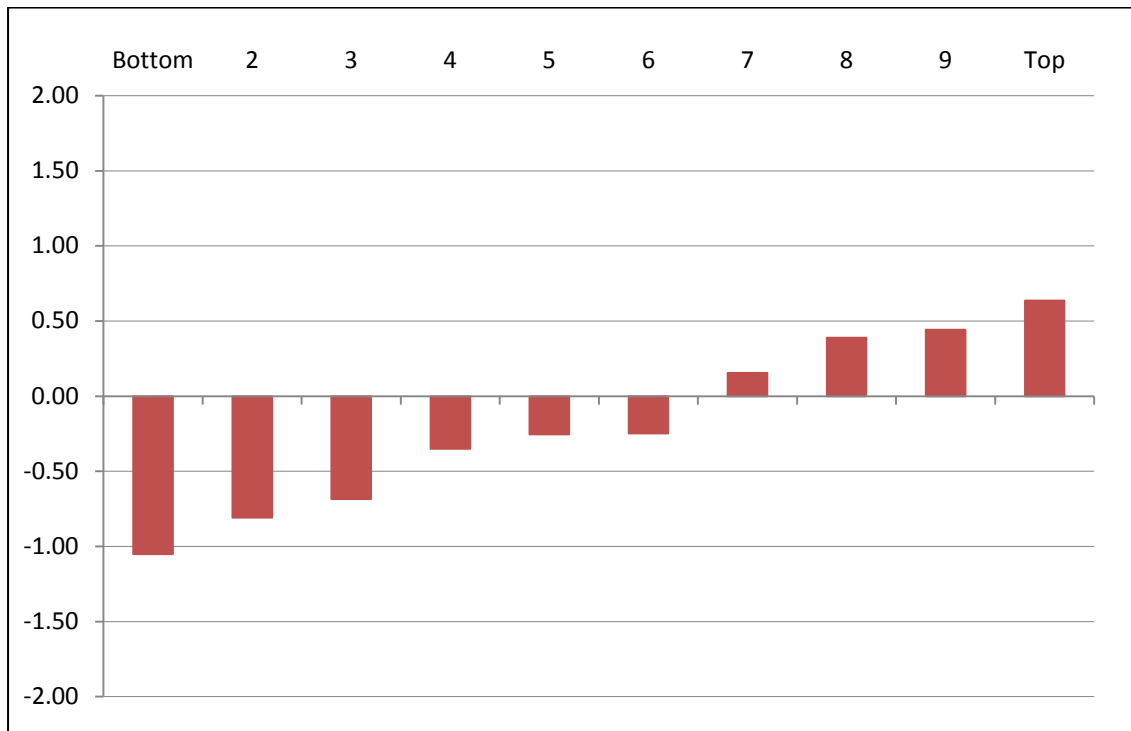
- The widening of the standard rate income tax bands and the 1 per cent decrease in the higher rate of income tax;
- The increases to the USC thresholds, changes to the USC rates and the introduction of the new 8 per cent upper rate of USC;
- The increase in the standardised child benefit payment from €130 per child to €135;
- The re-introduction of a Christmas bonus¹² of 25 per cent of the weekly payment for people in receipt of long-term social welfare payments;
- The increase in the Living Alone Allowance;
- The revised water charges and €100 “water conservation payment” announced in November;
- Reductions in property tax rates for about half of the local authority areas; as this includes large urban areas, more than half of all households will gain from these reductions.

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

- the changes governing eligibility for One-Parent Family Payment, with a reduction in the age limit for a qualifying child becoming effective in mid-2015, and a special Jobseeker Transition payment acting as an alternative for many of those affected;
- the Back to Work Family Dividend, whereby long-term unemployed people may retain the child-related portion of their welfare payment; in full for one year, and 50 per cent for a second year;
- the Housing Assistance Payment, currently being piloted, and due to be phased in nationally during 2015.

Research is underway to incorporate these aspects, and results will be published as they become available.

¹² The bonus for 2014 was announced in Budget 2015, and is included in the analysis of this budget.

FIGURE 1 Impact of Budget 2015 - Percentage Change in Disposable Income by Income Decile

Source: SWITCH estimates at December 2014, including the impact of water charges, changes to income tax bands, changes to USC and the welfare measures specified in the text.

The overall impact on household incomes of Budget 2015 and water charges is close to neutral, increasing average income by less than 0.1 per cent. Figure 1 shows that within this framework, there are gains and losses relative to a distributionally neutral wage-indexed budget. The largest losses are for the bottom decile, an average loss of just over 1 per cent, and for the second decile. Losses are incurred in each of the bottom six deciles, with the percentage loss declining as incomes increase. From the seventh decile onwards there are small gains. The top decile gains the most with an average gain of 0.6 per cent. This pattern of losses in the bottom half of the income distribution, declining as income rises, and gains in the upper reaches, rising with income can clearly be described as regressive.¹³

The introduction of a new, higher USC rate counterbalancing the cut in the top tax rate for those on very high incomes gives rise to a less unequal outcome than a simple top rate tax cut. A simple top rate tax cut would have cost in the region

¹³ Technically a regressive impact is one which involves the net percentage gain increasing with income, while a progressive impact would see the net percentage gain declining as income increases. A proportional impact would see the same percentage gain or loss across all income groups. Some patterns, including those for the 2009-2015 analysis undertaken here, are more complex and cannot be characterised simply as progressive, regressive or proportional.

of €230m in a full year. In effect, the higher USC rate claws back close to €100m of this, by capping the gains of those on the highest incomes at the same level as those on €70,000 per year.¹⁴ Nevertheless, there are gains for all top rate taxpayers, and the fact that these are concentrated in the higher income deciles means that this group sees the greatest proportionate gains.

It should be recalled that these losses or gains are relative to the benchmark scenario, in which welfare payments and tax bands and credits are indexed in line with wage growth of 1.4 per cent. This indexed benchmark reminds us that even if taxes and welfare were kept constant in nominal terms, those in work would experience some “fiscal drag” as more of their income would be taxed at higher rates; and those depending on welfare payments would see their incomes fall further behind the average.

Budgets 2009-2015

Ireland’s fiscal adjustment has been long and painful. Having examined the latest Budget, we now review the cumulative impact of the overall adjustment, from the initial Budget 2009 (October 2008) onwards. How have the changes implemented since the onset of the recession affected those at differing income levels? It must be remembered that this analysis includes a much wider range of measures taken over the seven years, including:

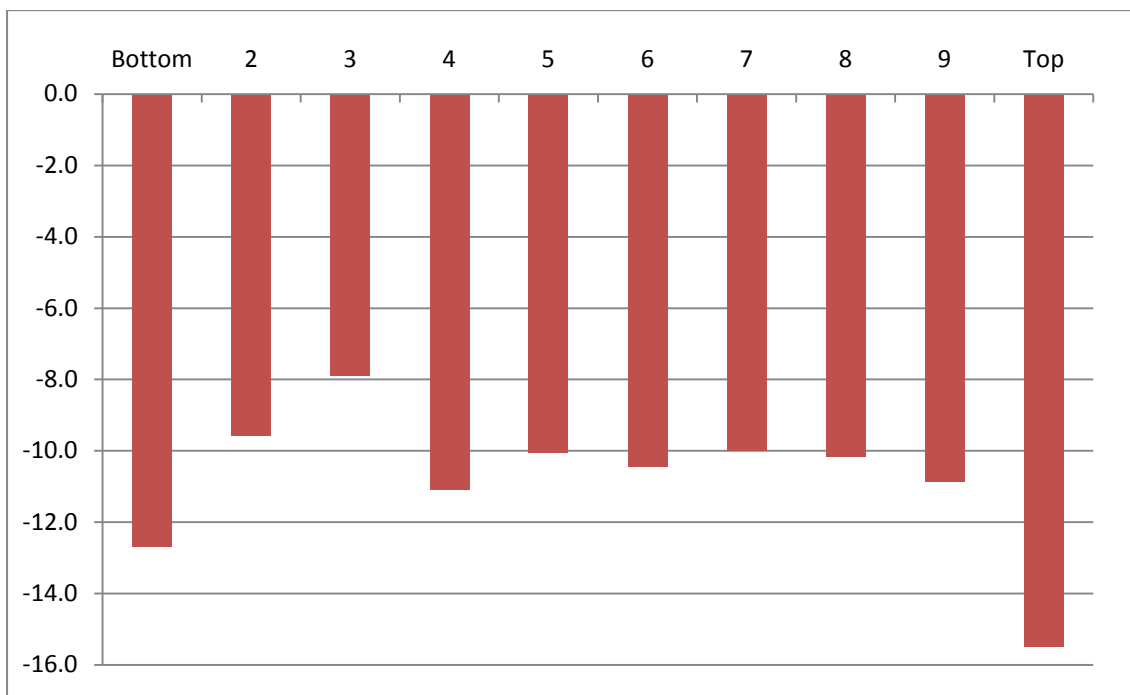
- the main changes to income tax, including cuts to income tax credits and the width of the standard rate band;
- the introduction of Universal Social Charge and subsequent revisions;
- elimination of the PRSI ceiling;
- the net changes in welfare payment rates over the period, with pension payment rates retaining the increase awarded in October 2008, and working-age payments ultimately reduced below their 2008 levels;
- net reductions in Child Benefit payment rates, with cuts in earlier years only partly offset by an increase in 2015;
- reductions in Jobseeker’s Allowance for the young unemployed;
- the impact of the public sector pension levy (Pension Related Deduction, PRD);
- explicit cuts in public service pay in 2010 and in 2013 as part of the Haddington Road Agreement);

¹⁴ A further effect, incompletely captured here, is that a simple substitution of 1 per cent USC for 1 per cent top tax rate is likely to involve some losses for high income taxpayers, as USC does not permit many of the offsets in tax allowances or credits which are possible in the income tax system.

- reductions in public service pensions;
- the introduction of the Local Property Tax;
- abolition of the Christmas Bonus in 2009, and its partial restoration in 2015;
- cutbacks in certain elements of the Household Benefits Package.

We augment the standard SWITCH model with estimates from other sources¹⁵ of the distributional impact of a number of other policy changes.

FIGURE 2 Impact of Budgetary Policy 2009-2015 - Percentage Change in Disposable Income by Income Decile



Source: SWITCH model at December 2014 incorporating main changes in direct tax, welfare and public service pay/pensions, and water charges; augmented by results on carbon tax and VAT, DIRT, specific Budget 2014 restrictions of tax reliefs for pension contributions and medical insurance premia, and Capital Gains Tax as described in Callan et al. (2013b).

The overall scale of the impact of austerity policies is determined by macro-level decisions regarding the size of tax increases and the extent of the reduction in welfare payments and public service pay. The distribution of these income losses over income groups depends on the detail of budgetary decisions regarding tax structures, welfare payment rates and decisions on the structure of public service pay cuts. Figure 2 summarises how the adjustment is spread over income groups (deciles) ranked from poorest to richest, taking into account these detailed tax, welfare and public service pay decisions.

¹⁵ Details of the methods can be found in Callan *et al.* (2013b).

For six of the ten deciles the income loss arising from policy changes was between 10 per cent and 11¼ per cent. Outside this band, the highest losses were for the top decile, which is estimated as having lost 15 and a half per cent of its income due to the policy changes examined here. The bottom decile is estimated as having policy-induced losses of 12¼ per cent. Somewhat lower losses are found in deciles 2 and 3, which include a higher than average representation of pensioner households.

The results for Budgets 2009 to 2015 are too complex to be characterised as either regressive, progressive or proportional. Over a substantial range the pattern is broadly proportional, but this does not extend to whole income distribution. The greatest policy-induced losses have been at the top of the income distribution, and the next greatest losses at the bottom. Only the third decile had a significantly lower loss (under 8 per cent) than others. To sum up: the net effect of Budgets 2009 to 2015 has been to squeeze incomes at all income levels, but by most of all at the top and the bottom of the income distribution.¹⁶

Impact by Family Type

The preceding analyses have examined the impact of the current budget, Budget 2015, and the impact of all budgets 2009-2015 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.¹⁷

The largest family type (with over three times as many cases as any other) is single employed people without children and it has the largest gain. This category is set to gain on average 0.5 per cent from Budget 2015. Other family types with small gains include the single retired, and two-earner couples with and without

¹⁶ In a broader analysis of the full impact of the recession itself and of policy measures, Callan *et al.* (2014) show that over the 2008 to 2012 period, the greatest percentage income losses were at the bottom of the income distribution, followed by the top. Different patterns are found by Maitre *et al.* (2014) in examining a measure of “economic stress”, which includes both objective items and items involving respondent’s judgements on their circumstances: the measure of economic stress is found to have risen most for middle income groups. One factor intervening between incomes and economic stress is the cost of housing. Callan *et al.* (forthcoming) will examine the extent, if any, to which results for income measures net of housing costs may differ from those based on incomes before housing costs.

¹⁷ For this analysis, only the core modelled elements can be taken into account; it is not possible to cover the additional elements such as VAT changes, DIRT etc. in this analysis. The broad pattern of family-type impacts is not likely to be strongly affected by the addition of the extra-model elements. Work is currently underway to allow for the incorporation of indirect tax changes at family type level.

children. The biggest losses are to be found among those who are of working age, but not at work: those who are unemployed, non-earning lone parents, and those who are ill or have a disability all see losses of at least 1 per cent.

TABLE 1 Impact of Budgetary Policy 2009-2015 - Percentage Change in Disposable Income by Family Type

	Budget 2015	Budgets 2009-2015	Proportion of Families
	% change	% change	%
Single Retired Tax Unit	0.2	-5.2	11
Retired Couple	-0.4	-5.9	7
Single Employed without Children	0.5	-8.0	34
All Other Tax Units	-1.3	-9.1	8
Single Earner Couple without Children	-0.2	-9.7	5
Employed Lone Parent	-0.5	-9.7	5
Dual Earner Couple without Children	0.4	-11.1	5
Dual Earner Couple with Children	0.3	-11.2	9
Single Earner Couple with Children	-0.1	-12.1	7
Unemployed Couple	-1.4	-12.3	2
Non-Earning Lone Parent	-1.0	-12.6	2
Single Unemployed without Children	-1.2	-22.4	4

Source: SWITCH model at December 2014 incorporating main changes in direct tax, welfare, public service pay/pensions, and water charges.

In respect of Budgets 2009-2015, losses are larger and more widespread and there are no gains. Single unemployed people without children have experienced by far the largest losses (more than 22 per cent): this reflects the cuts to jobseeker payments for the young unemployed in particular. Most family types saw losses of between 8 and 13 per cent. The contributing factors to the losses vary by income level. At the lowest income levels, reductions in welfare payment rates, property tax and water charges play significant roles. At the highest income levels, major contributory factors are income-related taxes (income tax and USC) and cuts in public sector pay. The lowest losses, of between 5 and 6 per cent, were experienced by single retired tax units and retired couples. This reflects the protection afforded to pension payments throughout crisis budgets.

Conclusion

The Budget 2015 package needs to be considered together with the revised package of water charges and the “Water Conservation Grant”. Our analysis provides a nationally representative picture of the impact of the main tax and welfare changes in Budget 2015, taking into account the revised water package. The net impact is negative for low income groups, with the greatest loss, about 1 per cent, for households with the lowest incomes. There are small gains for high income groups due to income tax reductions, with a gain of 0.6 per cent for the

highest income group. However, as the scale of the adjustment in Budget 2015 was small, the overall picture of gains and losses from the beginning of the austerity budgets remains similar to what was observed last year, i.e., the greatest losses imposed by austerity budgets have been for the top 10 per cent of households, with above average losses also experienced by the lowest income households.

Analysis at family unit level reveals that the greatest losses imposed by Budgets 2009 to 2015 were for single unemployed people, while the lowest losses were for pensioners. This reflects the substantial cuts in welfare payment rates for the young unemployed in particular, and the fact that pension payment rates, unlike working age payment rates, were not reduced.

References

- Bargain, O. and Callan, T. (2010). “Analysing the effects of tax-benefit reforms on income distribution: a decomposition approach.” *Journal of Economic Inequality*, Vol. 8, No. 1, pp. 1-21.
- Belfield, C., Cribb, J., Hood, A. and Joyce, R. (2014). *Living Standards, Poverty and Inequality in the UK: 2014*, London: Institute for Fiscal Studies.
- Callan, T., Keane, C., Walsh, J.R. and Lane, M. (2012). “From Data to Policy Analysis: Tax-benefit Modelling Using SILC 2008.” Paper presented at the Statistical and Social Inquiry Society of Ireland, Central Statistics Office, Cork, October 2012.
- Callan, T. and Keane, C. (2009). “Non-cash Benefits and the Distribution of Economic Welfare.” *The Economic and Social Review*, Vol. 40, No. 1, pp. 49-71.
- Callan, T., Keeney, M. and Walsh, J.R. (2001). “Income Tax and Welfare Policies: Some Current Issues” in Callan, T. and McCoy, D. (eds.), *Budget Perspectives 2002*.
- Callan, T., Lyons, S., Scott, S., Tol, R.S.J. and Verde, S. (2009). “The distributional implications of a carbon tax in Ireland.” *Energy Policy*, Elsevier, Vol. 37, No. 2, pages 407-412, February.
- Callan, T., Nolan, B., Keane, C., Savage, M. and Walsh J.R. (2013a). “The Great Recession, Austerity and Inequality: Evidence from Ireland.” *Intereconomics*, Vol 48, November/December 2013, Number 6.
- Callan, T., Nolan, B., Keane, C., Savage, M. and Walsh J.R. (2013b). “Distributional Impact of Tax, Welfare and Public Sector Pay Policies: Budget 2015 and Budgets 2009-2015” in *Quarterly Economic Commentary*, Winter, Dublin: The Economic and Social Research Institute.
- Callan, T., Van Soest, A. and Walsh, J.R. (2009). “Tax Structure and Female Labour Supply: Evidence from Ireland.” *LABOUR: Review of Labour Economics and Industrial Relations*, Vol 23, No 1, March 2009, pp.1-35.
- Canberra Group (2012). *Canberra Group Handbook on Household Income Statistics*, 2nd edition, New York: United Nations.
- Central Bank of Ireland (2014). *Central Bank Quarterly Bulletin*, Quarter 4.
- Crossley, T. and O’Dea, C. (2010). *The wealth and saving of UK families on the eve of the crisis*, London, Institute for Fiscal Studies.
- Duffy, D., Fitzgerald, J., Timoney K. and Byrne, D. (2013). *Quarterly Economic Commentary*, Autumn 2013, Dublin: The Economic and Social Research Institute.
- Keane, C., Callan, T., Savage, M., Walsh, J.R. and Timoney, K. (2012). “Identifying Policy Impacts in the Crisis: Microsimulation Evidence on Tax and Welfare”. Paper presented at the Statistical and Social Inquiry Society of Ireland, Central Statistics Office, Cork, 4 October 2012.

Layte, R. and Callan, T. (2001). “Unemployment, Welfare Benefits and the Financial Incentive to Work” *The Economic and Social Review*, Vol. 32, No. 2.

Leahy, E., Lyons, S. and Tol, R.S.J. (2011). “The Distributional Effects of Value Added Tax in Ireland.” *The Economic and Social Review*, Economic and Social Studies, Vol. 42, No. 2, pp. 213-235.

Maitre, B., Russell, H., and Whelan, C.T. (2014). “Trends in Economic Stress and the Great Recession in Ireland: An Analysis of the CSO Survey on Income and Living Conditions (SILC).” Dublin: Department of Social Protection, Social Inclusion Technical Paper No. 5.

Nolan, B. (1991). “The Wealth of Irish Households: What Can We learn from Survey Data?” Dublin: Combat Poverty Agency.

O’Dea, C. and Preston, I. (2014). “Can We Measure Who Loses Most from Public Service Spending Cuts?” Budget Perspectives 2015, Paper 2, The Economic Social and Research Institute.

O’Dea, C. and Preston, I. (2012). “The distributional impact of public spending in the UK.” IFS Working Papers W12/06, Institute for Fiscal Studies.

Savage, M., Callan, T., Keane, C., Nolan, B. and Colgan, B. (2015). “Crisis, Austerity, Recovery: Income Distribution through the Great Recession in Ireland”, *Intereconomics*, Vol. 49, November/December 2014, Number 6.

Research Notes

Irish Economic Performance 1987-2013: A Growth Accounting Assessment

*David Byrne and Kieran McQuinn¹

Introduction

In this Note we examine the contribution to Irish economic performance over the period 1987 to 2013 comparing it with that of 14 European countries. In particular, we note the relative performance of the Irish labour market, aggregate investment and trends in total factor productivity over this time. This work is part of a broader work stream assessing economic performance at a European level.

Assessment Framework

The analytical framework which we use to assess both Irish and European performance is based on the standard assumption that output is produced according to a Cobb-Douglas production function

$$Y_t = A_t K_t^\alpha L_t^{1-\alpha}$$

where Y_t is real output,² K_t is capital input, L_t is labour input (defined in this paper as total hours worked), and A_t is total factor productivity. Output growth can then be expressed as

$$\frac{\dot{Y}_t}{Y_t} = \frac{\dot{A}_t}{A_t} + \alpha \frac{\dot{K}_t}{K_t} + (1 - \alpha) \frac{\dot{L}_t}{L_t}$$

Using data on output growth, capital growth and labour growth, Total Factor Productivity (TFP) growth can be calculated. As there is no official capital stock series for the Irish economy, we construct this series using a perpetual inventory method. To do this we assume that the initial stock of capital in 1970 equals the

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¹ Thanks to Frances Ruane and Alan Barrett for comments on a previous draft. Any remaining errors are the responsibility of the authors.

² For all other European countries, GDP is the output series used. However, in an Irish context, we use GNP owing to the relevance of the multinational sector to the Irish economy.

steady-state value implied by the Solow growth model in this year based on the trends at that point for GDP growth, the investment share of GDP and the growth rate of labour input. The rest of the capital stock series is then derived using the following definition:

$$K_t = (1 - \delta)K_{t-1} + I_{t-1}$$

with a depreciation rate of six per cent per annum. For more on the assumptions underpinning the growth calculations see McQuinn and Whelan (2007) and McQuinn and Whelan (2008).

Based on this approach, we now decompose Irish economic performance since 1987 along with that of 14 comparator European countries.³ In Figures 1 to 4 we plot the annual growth rates for some of the key Irish macroeconomic series from 1987 to 2013.

Irish Performance in a European Context

Pre-Crisis 1987-2006

In the two decades preceding the 2007/08 financial crisis, Ireland exhibited one of the strongest growth performances amongst the countries in question. The Irish performance over the period has been attributed to a “belated convergence” phenomenon (see Honohan and Walsh (2002)). The eventual achievement of a relatively stable macroeconomic policy environment by the late 1980s enabled the coupling of a young, well-educated labour force on the supply side of the economy with a large increase in multi-national investment due to Ireland’s competitive corporate tax regime. The growth which took place in Irish performance since the early 1990s thus resulted in Ireland catching up with its neighbours, which were more productive but experiencing lower rates of productivity increases.

In Tables 1 and 2 we present the components of output growth for 1987-1996 and 1997-2006 for 14 European countries: Sweden, the United Kingdom and the 12 Member States of the Euro Area as of 2002. In both ten-year periods, Ireland had the greatest output growth rate. Between 1987 and 1996, the largest contribution to Irish growth came from TFP, accounting for 4.3 percentage points of the 7.2 per cent total. The magnitude of Ireland's technology growth in this

³ All of the data with the exception of the average work week is taken from the European Commission AMECO database. Data on the workweek is taken from the Groningen Growth and Development Centre (GGDC): <http://www.rug.nl/research/ggdc/>.

period is highlighted by the fact that the second-highest TFP growth rate, Finland's, was 2.2 per cent. Any analysis of trends in Irish TFP does come with some health warnings. For example, Honohan and Walsh (2002) discuss the role played by foreign direct investment (FDI) in Ireland's productivity growth for this period. They note that the growth rate in productivity of foreign-owned manufacturing enterprises (constituting over 90 per cent of manufacturing exports and almost 80 per cent of all exports) was much higher than in other sectors of the economy.⁴

Also, the OECD lists Ireland as among the five "best practice" member countries in terms of product market regulation. It is for this reason that Johansson et al. (2013) argue that Ireland would be the Euro Area country to receive the smallest benefit from structural reforms. This compares with countries such as France and Italy, for which significant gain from reforms is predicted. The relatively strong performance in Irish TFP for this period is corroborated by the recent release of purchasing power parity (PPP) adjusted TFP levels by the Penn World Tables (see Feenstra *et al.* (2013) for details). These new data clearly show that Irish TFP levels increased significantly vis-à-vis other European countries from 1990 onwards.

In the 1987-1996 period, labour growth was the next most important component of overall output growth, accounting for 1.6 percentage points, the second-highest growth rate among the EU states considered. Capital provided the smallest contribution to overall output growth in Ireland but the capital growth rate was nonetheless the third-highest in Europe.

Between 1997 and 2006 Ireland was again first in terms of overall output growth (4.9 per cent), however the ranking of contributing parts changed with respect to the previous decade. Capital growth accounted for 2.1 per cent of the total, and also was the largest capital growth rate among the EU states considered. This reflected the large increase in both residential and commercial property construction which occurred in the Irish economy over this period. Labour contributed 1.8 per cent to growth in Ireland, second overall to labour growth in Spain. For the Euro Area as a whole, labour grew by 0.4 per cent in the decade, an increase from 0.2 per cent growth in the previous decade. There was

⁴ Honohan and Walsh (2002) argue that since Ireland has a particularly low standard rate of corporation tax on manufacturing among the advanced economies, certain transactions are often booked at transfer prices which have the effect of locating a very high fraction of the enterprise's global profits in Ireland. Thus, in many cases, the huge profits recorded by the Irish affiliates may have very little to do with the manufacturing activities being conducted in Ireland. In the present analysis, the use of GNP as opposed to GDP as the relevant output indicator does mitigate somewhat this effect.

considerable heterogeneity among the Euro Area countries, however; Ireland, Greece, Spain, Belgium and Finland all increased their rate of labour growth, while Sweden, France, the Netherlands, Austria and Portugal remained at or near zero growth. Germany was the only country to have negative labour growth between 1997 and 2006.

Irish TFP grew by 1.1 per cent between 1997 and 2006, which was among the highest rates in Europe in this period. Compared with the 1987-1996 period, however, the magnitude of productivity growth was much lower in Ireland. This is likely attributable to the increasing share of the relatively low-productivity construction sector in Irish output. In a European context, in contrast to the previous ten-year period in which every country had positive TFP growth, there was negative productivity growth in Italy, Spain and Portugal.

Tables 3 and 4 decompose labour growth⁵ further into its constituent parts; population growth, the participation rate, the employment rate and growth in the average working week. Ireland's strong overall growth in labour in both decades can be attributed to growth in population and participation, with growth in the employment rate a feature of the earlier decade. Spain and Luxembourg were among the other states to have particularly large labour growth rates.

Between 1987 and 1996, Ireland had the largest employment rate growth, while also having the largest fall in average hours per week. This could represent growth in shorter-hours worked at the margin; a significant proportion of the gain in employment in this period was likely due to activation of people who were previously out of the labour force with many of them taking up part-time employment. As noted by McCarthy and McQuinn (2008), the increase in labour force participation in Ireland, particularly among women, was a sign of the dynamism of the Irish labour market. The participation rate in Ireland grew by 1.8 per cent and by 1.3 per cent in 1987-1996 and 1997-2006, respectively. This compares with growth in Euro Area participation rates of 0.3 and 0.4 per cent in the two ten-year periods. While Ireland's participation growth was particularly high, participation increases were widespread across Europe in both decades.

Post-Crisis: 2007 to the Present

In both the 1987-1996 and 1997-2006 periods, all 14 states we consider had positive output growth. In the subsequent five-year crisis period, however, only

⁵ Transformation of labour growth rates in Tables 1 and 2 by $(1-\alpha)$ matches the labour growth rates in Tables 3 and 4.

four had positive rates of output growth. The largest decrease in output was found in Greece, followed by Italy, Ireland, Portugal and Spain. Table 5 summarises output growth over the 2007–2013 for the different countries. The profound decline in Irish economic activity was, of course, related to the substantial credit boom which had accumulated in the period immediately preceding the financial crisis of 2007-2008. Thus, the Irish economy was, arguably, more exposed than most to the subsequent economic instabilities.

The capital stock in the Euro Area had been growing at rates between 2 and 3 per cent per year between the late 1970s and the onset of the crisis (McQuinn and Whelan (2013)). Table 5 shows relatively weak growth in the capital stock in the post-crisis period, as a result of a falling investment share of GDP. From Table 5 it is also evident that, like most European countries, the contribution to growth from increases in both TFP and investment declined significantly in an Irish context. Growth in the Irish capital stock was particularly hit by the post-2007 decline in activity in the construction sector as the credit bubble preceding the crisis had resulted in a significant over-supply of residential housing units.⁶

Developments in the Irish labour market were especially affected by the onset of the financial crisis. For the Euro Area as a whole, the unemployment rate rose from approximately 7 per cent at the onset of the crisis to 12 per cent by 2013. This EA-wide increase masks the heterogeneity in labour market outcomes for individual countries. While Germany and Austria maintained relatively low levels of unemployment, Ireland along with France, Italy, Portugal, Greece and Spain saw unemployment rise significantly above 10 per cent. Table 5 shows the considerable impact changes in the labour component had on output growth. The labour component fell by 2.6 per cent in Ireland, the largest decrease across the countries we consider.

We decompose the labour growth rates in Table 6. Ireland had the greatest fall in labour market participation between 2007 and 2012, in a reversal of the increasing participation of the previous 20 years. The significant flows out of the labour force in Ireland stopped the unemployment rate from rising further than it did. The elevated unemployment rates in Ireland during the crisis thus did not fully represent the scale of the weakness in the Irish labour market. Ireland was among the states with the largest decreases in the employment rate and the average working week. The only state for which employment grew over the

⁶ At the peak of the construction boom between 2005 and 2007 an average of almost 85,000 housing units was being built per annum in the Irish property market. In the UK at the same time just over twice the amount of units (215,000) were being built, despite a fourteen-fold population differential.

period was Germany. On the other hand, population growth had a positive impact in every state except Germany.

Future Issues and Concluding Comments

The results presented in this Note are part of a larger body of work assessing the medium-term growth outlook for the Irish economy. The analysis enables Ireland's relative economic performance over the period 1987-2013 to be placed in an international context. In particular, it allows for a relative comparison of the main channels of economic growth; the labour market, investment and TFP. What is striking is that during the growth phase of the economy (1987-2006), the initial sub-period (1987-1996) appeared to be characterised by strong growth in TFP, while in the latter phase of the boom (1997-2006), greater contributions were forthcoming from labour and capital.

Overall, from an Irish perspective, the analysis suggests that at present, the domestic economy is operating some way below its potential level. The unemployment rate is above its long-run median rate of 7.9 per cent, while TFP growth is below the average of 2 per cent and the investment rate, which drives capital growth, is below its long-run average of 21 per cent. This suggests that, notwithstanding the positive growth trends which have emerged recently in the Irish economy, considerable slack still exists across all the main channels of growth.

Future work in this area will present a new estimate of potential output for the economy based on the standard growth accounting model presented here. It will also examine the implications for Irish growth of significant expected changes in population trends over the next 30 to 40 years with Ireland, like all major European countries, set to experience a significant decline in the proportion of people in the working age category.

References

- Bergin A. and Fitzgerald, J. (2014). “The Structural Balance for Ireland,” Special Article in *Quarterly Economic Commentary*, Economic and Social Research Institute (ESRI), Spring.
- Feenstra, R. C., Inklaar R. and Timmer, M. P. (2013). “The Next Generation of the Penn World Table” available for download at www.ggd.net/pwt
- Gros, D. (2014). “Investment as the key to recovery in the euro area?” CEPS Policy Brief, No. 326.
- Honohan P. and Walsh, B. (2002). “Catching up with the leaders: the Irish hare”, *Brookings Papers on Economic Activity*, No. 1, pp.1-57.
- Johansson, Å. *et al.* (2013). “Long-Term Growth Scenarios”, OECD Economics Department Working Papers, No. 1000, OECD Publishing.
- McCarthy Y. and McQuinn, K. (2008). “Changing participation rates in the Euro Area: The case of the Celtic tiger”, Article in Central Bank of Ireland *Quarterly Bulletin*, No. 2, pp.68 - 88, April.
- McQuinn K. and Whelan, K. (2007). “Solow (1956) as a model of cross-country growth dynamics”, *Oxford Review of Economic Policy*, Vol. 23, No. 1, pp.45-62.
- McQuinn K. and Whelan, K. (2008). “Prospects for growth in the Euro area”, *CESifo Economic Studies*, Vol. 54, No. 4, pp.642-680.
- McQuinn K. and Whelan, K. (2013). “Europe’s Growth Crisis”. Paper to the CEPR-Modena conference on growth in mature economies, 7-8 November, Modena, Italy.

TABLE 1 Decomposition of Output Growth Rates: 1987-1996

Economy	Total	TFP	Capital	Total Labour
Belgium	2.2	1.3	0.9	0.0
Germany	1.9	1.3	0.8	-0.2
France	1.9	1.2	0.7	0.0
Greece	2.3	1.9	0.4	0.1
Ireland	7.2	4.3	1.2	1.6
Italy	1.6	0.8	0.7	0.1
Spain	2.8	0.4	1.2	1.1
United Kingdom	2.5	1.7	0.9	-0.1
Sweden	2.1	1.6	0.5	-0.1
Finland	2.0	2.2	0.4	-0.6
Luxembourg	4.9	1.5	1.4	2.0
Portugal	3.0	0.5	1.5	1.0
Austria	2.7	1.7	1.0	-0.1
Netherlands	3.1	1.2	1.0	0.9

Source: Own estimates.

TABLE 2 Decomposition of Output Growth Rates: 1997-2006

Economy	Total	TFP	Capital	Total Labour
Belgium	1.8	0.3	0.8	0.7
Germany	1.1	1.0	0.5	-0.4
France	1.7	0.8	0.9	0.1
Greece	4.2	2.0	1.2	0.9
Ireland	4.9	1.1	2.1	1.8
Italy	1.2	-0.2	0.8	0.6
Spain	3.3	-0.1	1.6	1.9
United Kingdom	2.9	1.4	1.1	0.3
Sweden	2.9	2.1	0.8	0.0
Finland	2.9	1.7	0.8	0.4
Luxembourg	3.7	0.6	1.7	1.4
Portugal	0.9	-0.3	1.2	0.0
Austria	2.0	1.1	0.7	0.1
Netherlands	1.6	0.7	0.9	0.0

Source: Own estimates.

TABLE 3 Decomposition of Average Labour Growth Rates: 1987-1996

Economy	Total	Population	Participation Rate	Employment Rate	Workweek
Belgium	0.0	0.3	0.4	0.0	-0.7
Germany	-0.2	0.4	0.2	-0.2	-0.7
France	0.0	0.4	0.4	-0.1	-0.8
Greece	0.1	0.7	0.4	-0.5	-0.5
Ireland	2.5	0.8	1.8	1.0	-1.2
Italy	0.1	0.0	0.2	-0.1	0.0
Spain	1.7	0.3	1.1	0.3	-0.1
United Kingdom	-0.1	0.3	-0.2	0.2	-0.3
Sweden	-0.1	0.4	-0.6	-0.4	0.5
Finland	-0.9	0.4	-0.5	-0.7	-0.1
Luxembourg	3.0	1.3	2.1	-0.1	-0.4
Portugal	1.5	0.2	0.5	0.0	0.7
Austria	-0.1	0.4	0.2	-0.1	-0.6
Netherlands	1.4	0.6	1.1	0.2	-0.5

Source: Own estimates.

TABLE 4 Decomposition of Average Labour Growth Rates: 1997-2006

Economy	Total	Population	Participation Rate	Employment Rate	Workweek
Belgium	1.0	0.5	0.6	-0.3	0.2
Germany	-0.6	0.0	0.3	-0.4	-0.5
France	0.1	0.7	0.0	0.0	-0.6
Greece	1.4	0.3	1.0	0.4	-0.4
Ireland	2.7	1.9	1.3	-0.1	-0.5
Italy	0.9	0.6	0.2	0.6	-0.4
Spain	2.8	1.5	1.3	0.6	-0.6
United Kingdom	0.5	0.5	0.4	0.0	-0.4
Sweden	0.0	0.4	0.3	-0.3	-0.4
Finland	0.6	0.3	0.3	0.4	-0.4
Luxembourg	2.1	1.3	2.3	-0.4	-1.1
Portugal	0.0	0.6	0.5	-0.7	-0.3
Austria	0.2	0.5	0.5	-0.2	-0.6
Netherlands	0.1	0.4	0.4	-0.2	-0.5

Source: Own estimates.

TABLE 5 Decomposition of Output Growth Rates: 2007-2012

Economy	Total	TFP	Capital	Total Labour
Belgium	0.4	-0.7	0.7	0.4
Germany	0.7	-0.1	0.4	0.3
France	0.0	-0.6	0.7	-0.2
Greece	-4.5	-3.0	0.8	-2.2
Ireland	-1.3	0.7	0.7	-2.6
Italy	-1.4	-1.0	0.4	-0.8
Spain	-0.8	0.1	0.9	-1.8
United Kingdom	-0.5	-1.3	0.8	0.0
Sweden	1.0	-0.4	0.9	0.5
Finland	-0.6	-1.2	0.7	0.0
Luxembourg	0.0	-2.8	1.5	1.3
Portugal	-1.2	-0.2	0.4	-1.4
Austria	0.6	0.0	0.5	0.1
Netherlands	0.0	-0.9	0.7	0.1

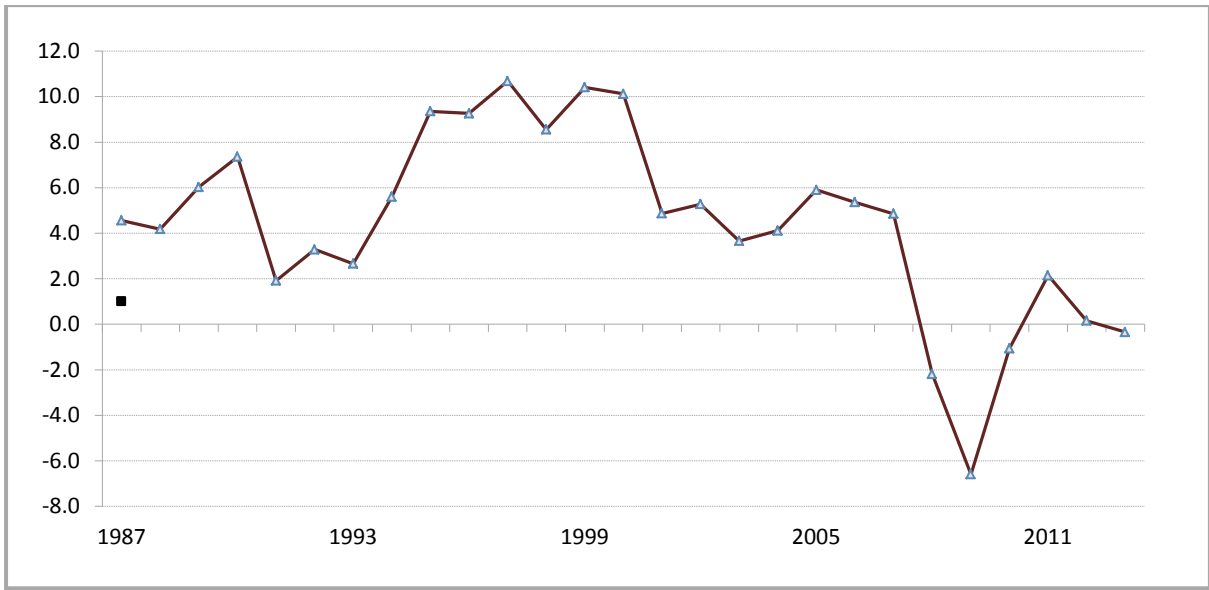
Source: Own estimates.

TABLE 6 Decomposition of Average Labour Growth Rates: 2007-2012

Economy	Total	Population	Participation Rate	Employment Rate	Workweek
Belgium	0.6	0.8	-0.1	0.0	-0.1
Germany	0.5	-0.1	0.3	0.7	-0.4
France	-0.3	0.5	-0.2	-0.4	-0.1
Greece	-3.3	0.2	0.4	-3.9	0.0
Ireland	-4.0	0.6	-1.8	-2.2	-0.6
Italy	-1.2	0.5	0.1	-1.0	-0.8
Spain	-2.7	0.6	0.4	-4.0	0.3
United Kingdom	0.0	0.7	0.0	-0.6	-0.2
Sweden	0.8	0.8	0.1	-0.3	0.3
Finland	-0.1	0.5	-0.1	-0.2	-0.3
Luxembourg	1.9	1.9	0.8	-0.2	-0.6
Portugal	-2.1	0.1	-0.5	-1.6	-0.1
Austria	0.1	0.4	0.6	0.0	-0.9
Netherlands	0.2	0.5	0.1	-0.4	0.0

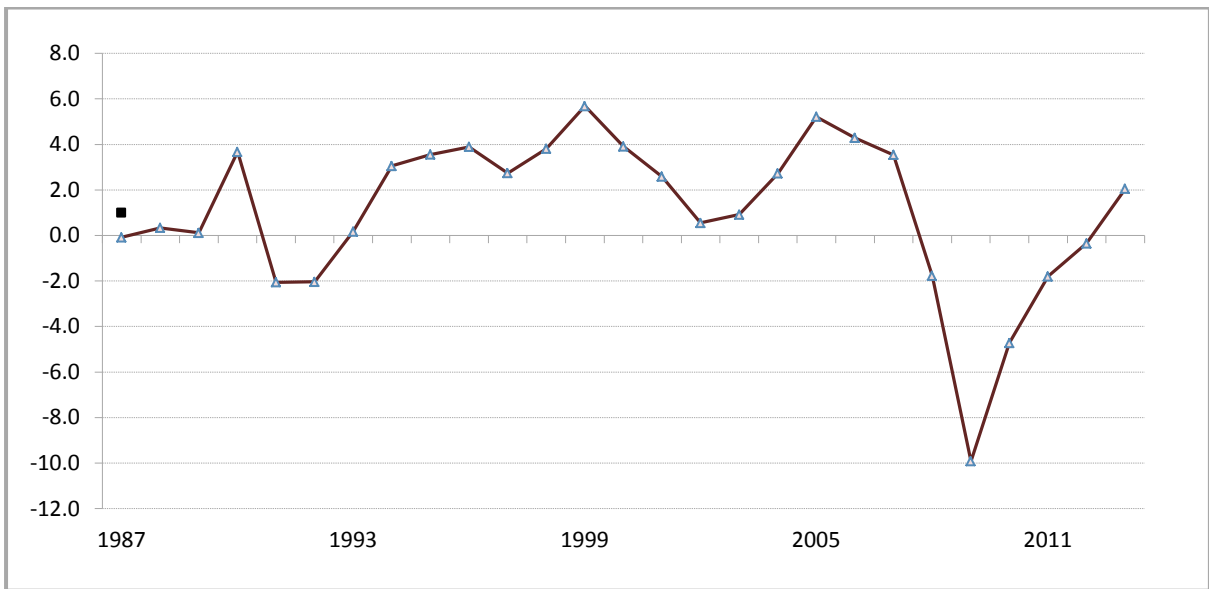
Source: Own estimates.

FIGURE 1 Year-on-Year Growth (%) in Real Irish GNP 1987:1 - 2013:1



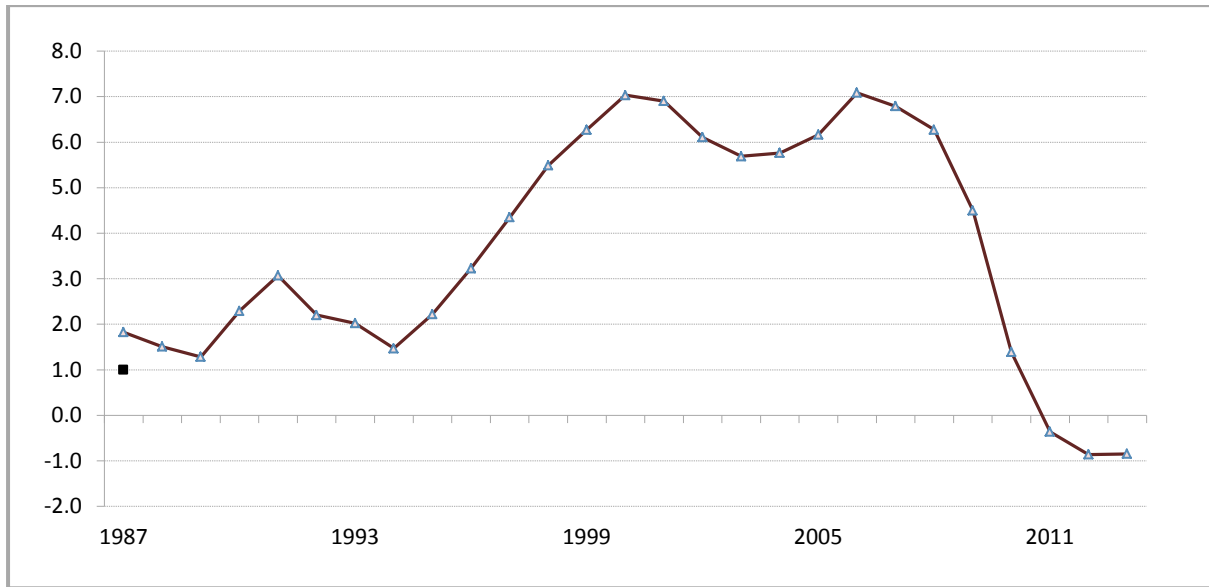
Source: AMECO.

FIGURE 2 Year-on-Year Growth (%) in Total Irish Hours Worked 1987:1 - 2013:1



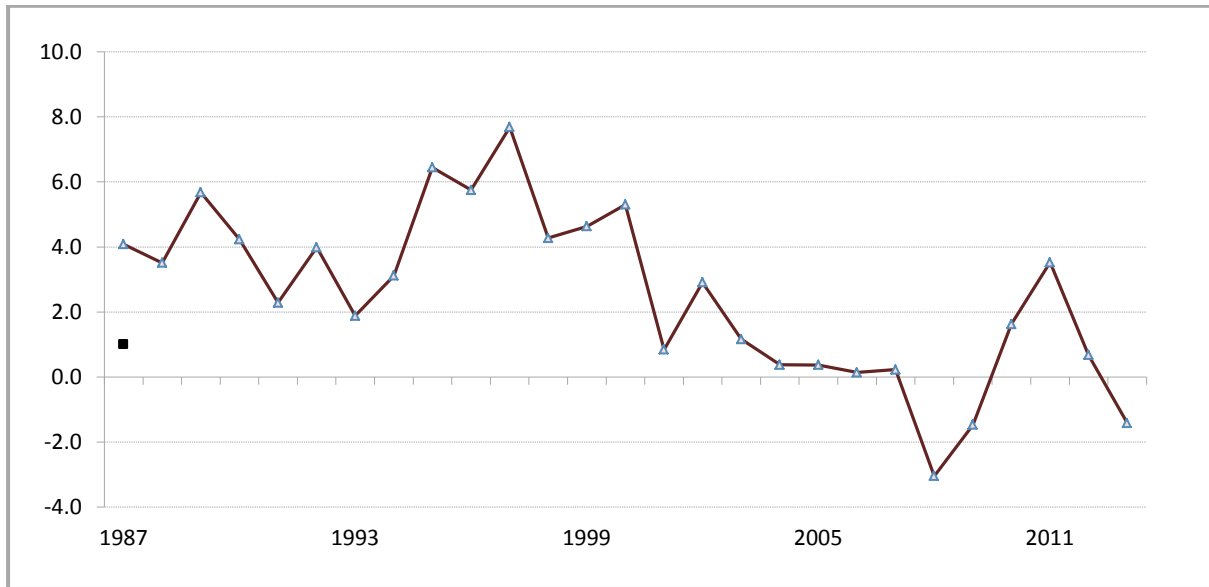
Source: AMECO + own estimates.

FIGURE 3 Year-on-Year Growth (%) in Irish Capital Stock 1987:1 - 2013:1



Source: AMECO + own estimates.

FIGURE 4 Year-on-Year Growth (%) in Irish TFP 1987:1 - 2013:1



Source: AMECO + own estimates.

Two-Speed Recovery? Spatial Development in Ireland

***Edgar Morgenroth**

Over recent times there has been some suggestion that there is a two-speed recovery in the Irish Economy, with the recovery being concentrated in Dublin, while other parts of the country are still stuck in recession. This implies that the regional development pattern in the recovery is one of divergence and the focus on the recovery only might suggest that this pattern of divergence is different to that seen either during the downturn or the boom. This note considers the evidence on spatial development patterns in Ireland during the recent economic recovery and during the previous period.

Regional Output Growth

Nationally, the economic downturn, which started late in 2007 and lasted until 2010, reduced real GDP by 9 per cent. Between 2010 and 2013, real GDP increased by just over 2.6 per cent, indicating a weak recovery.

¹ In per capita terms real GDP declined by 12.6 per cent reflecting the fact that the population was still growing while the economy contracted. The recovery has also been more modest in per capita terms with real per capita GDP up by 1.8 per cent in 2013 compared to 2010.

The latest regional data on Gross Value Added (GVA)² are for 2011, so these are of limited use in considering the spatial development patterns during the recovery. Nevertheless the analysis of these data yields some interesting results. In order to account for the fact that population growth is not evenly distributed around the country this aspect of spatial development is accounted for by considering per capita output.

Firstly, the recession did not hit all regions at the same time. While Dublin, the Mid-East and the Mid-West regions peaked in terms of per capita real GVA in 2007, the Border, Midland and West regions peaked in 2006 indicating that the

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¹ Calculations based on the CSO National Income and Expenditure Tables.

² CSO, County Incomes and Regional GDP.

recession started earlier in these latter regions (see Figure 1). However, two regions, namely the South East and the South West experienced a reduction in per capita real GVA from 2002 onwards i.e. they were in recession while the rest of the country still boomed.

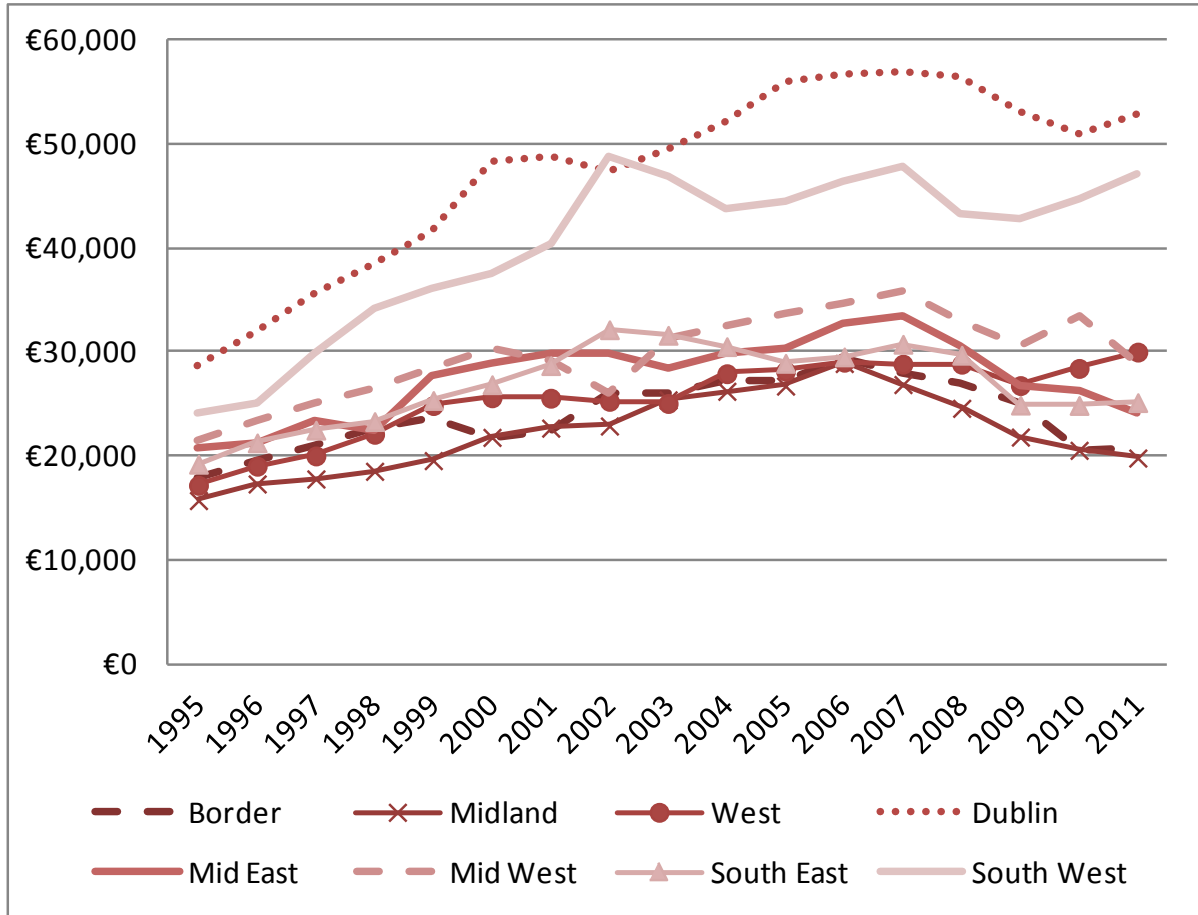
Secondly, there is significant heterogeneity with respect to the size of the decline. While nationally per capita real GVA declined by 12.8 per cent³ between 2007 and 2010, regions such as the Border (-30 per cent), Midland (-31 per cent) and Mid-East (-28 per cent) experienced a significantly sharper recession. Other regions such as Dublin (-11 per cent), the West (-11 per cent) and the South West (-12 per cent) fared better than the national average, suggesting that the large urban centres (Dublin, Cork and Galway) have been less affected by the economic downturn.

Thirdly, as of 2011 the Midland, Mid-East and Mid-West regions have not recorded real per capita GVA growth, so at least up to that point they had not emerged from recession. In contrast, the Border, Dublin, South East and South West regions have recorded growth and the West region has grown such that real per capita GVA in 2011 was higher than at any previous point i.e. that region more than recovered from the downturn. While growth in the Border (0.9 per cent) and South East (1.1 per cent) regions has been modest and both regions only started growing in the 2010 to 2011 period, strong growth has been recorded in the West (6 per cent), Dublin (3.9 per cent), and South West (5.2 per cent). Again the regions with the cities Dublin, Cork and Galway are seen to perform better.

Noticeable in Figure 1 is the increasing spread across the regions suggesting divergence. In particular, Dublin and the South West appear to be on distinct growth trajectory from other regions. However, rather than being a phenomenon that has occurred only since the recession, the figure clearly shows that there has been growing divergence since the onset of the “Celtic Tiger” in 1995. Formally, the coefficient of variation has increased from 0.19 to 0.32 between 1995 and 2011. Within that period the annual change in the coefficient of variation was positive in 11 out of the 16 years and the increase was on average larger than the decrease.

³ Note that the difference between GDP and GVA growth is due to the fact that there are slight definitional differences between the two measures.

FIGURE 1 Per Capita Real Gross Value Added (GVA) at Market Prices



Source: Own calculations based on CSO County Incomes and Regional GDP.

The increasing urban focus of development is also supported by analysis at the small area level. Significant locational preferences for different sectors were found in an analysis of the economic geography of Ireland using 2006 data.⁴ Specifically, the more high value-added and high-tech sectors tend to prefer or require urban locations. An update of the analysis using 2011 data reveals that urban areas have increased their share in economic activity by 4.1 per cent overall and in 21 out of 30 sectors since 2006. This suggests that firms in urban locations have fared better during the economic crisis. Urban areas accounted for 72 per cent of all employment in 2011 compared to 68 per cent in 2006. Remote areas account for just 6.6 per cent of employment in 2011, down from 7.6 per cent, while economically central areas have increased their share of employment from 66.6 per cent to 68.2 per cent.

Nationally GDP per capita and GNP per capita started growing again in 2010 and 2011 respectively. Thus, the published data on regional GVA which cover the period up to 2011 cannot shed light on the recovery at the regional level. It is however possible to estimate the regional GVA up to 2013 since National Income

⁴ Morgenroth E., (2009). "Exploring the Economic Geography of Ireland" *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. 38, pp.42-69.

and Expenditure (NIE) tables for the period up to 2013 are available.⁵ These estimates suggest that Dublin and the South West have experienced per capita output growth from 2011. The West has also had some growth but that growth stalled in 2013. The Mid-East and the South East recorded an increase in GVA between 2011 and 2012 but have seen a reduction in per capita output in 2013. Per capita GVA declined in the Border and Midland regions until 2012 but grew in 2013. Finally, the Mid-West is estimated to have recorded a continued decline in per capita GVA.

This analysis shows that regions with a large urban centre, primarily Dublin, the South West and more recently the West, are on a different development trajectory compared to the other regions. The data show that this has been a long established pattern which implies that this two-speed development is not confined to the recent economic recovery.

Regional Employment and Unemployment

In addition to output, employment and unemployment are also important business cycle indicator and published data on these are more up to date. However, as this relates to where employed and unemployed persons reside rather than where the economic activity takes place, it is important to be mindful of commuting patterns which particularly affect the data for Dublin and the neighbouring Mid-East regions.

Unemployment and employment at the regional level during the recent economic crisis were analysed in Morgenroth (2013),⁶ which also found significant heterogeneity and divergence across the regions. That study also found that unemployment rates would have reached much higher levels if there had not been a significant decline in labour force participation. This dampening effect was found to be most significant in the Border region. Here the focus is not on decomposing the changes in the unemployment rate but to consider whether different regions follow different development paths that are reflected in employment.

⁵ This is achieved by assuming that the productivity differences across regions in the three broad sectors Agriculture, Forestry and Fishing, Industry and Services remain unchanged and applying these to the productivity for the period up to 2013 as implied by the NIE, and multiplying the productivity by the numbers employed which are published as part of the Quarterly National Household Survey (QNHS). This method also relies on an implicit assumption that commuting patterns are fixed.

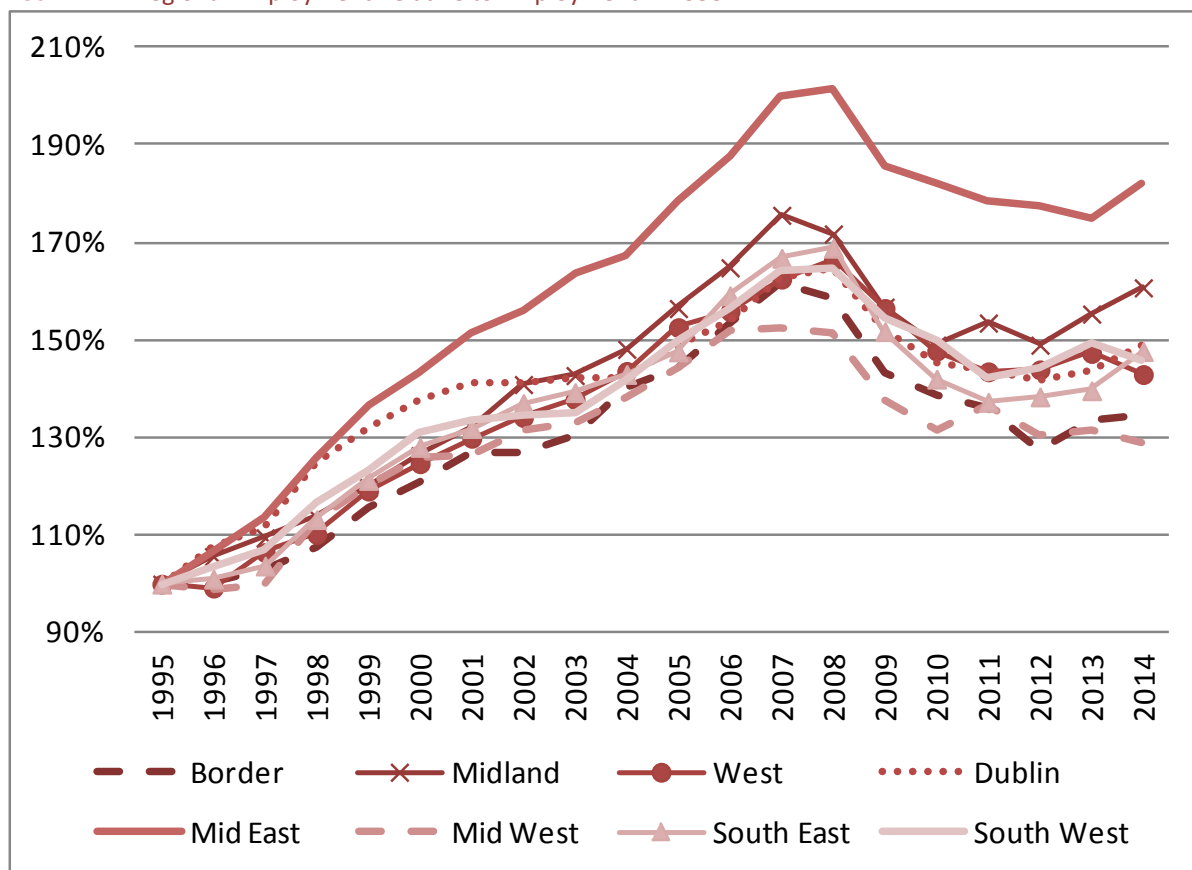
⁶ See Morgenroth, E. (2013). "The Regional Dimension of the Unemployment Crisis". *ESRI Research Note 2012/4/3*.

Nationally, employment peaked in the third quarter of 2007 and reached its lowest point in the first quarter of 2012 having fallen by 15.9 per cent. As in the case of GVA, across the regions both the timing of the peak number employed and the lowest point differ. The Border, Midland, Dublin, Mid-East and South West all saw peak employment in the third quarter of 2007, while the peak for the West was recorded one quarter earlier and the Mid-East and South East peaked three quarters later. Employment in the South East and South West increased during the period leading up to the economic crash in 2007 while GVA was falling post-2002, which implies falling labour productivity.

The first region to reach the lowest point of employment was the South West (first quarter 2011) while the Mid-West recorded its lowest number of employed persons in the first quarter of 2014. The reduction in employment between peak and trough varied between 14.6 per cent (West) and 22.7 per cent (Border). All regions have recorded at least some employment growth at some point since the crisis but for both the West and the Mid-West, employment in 2014 is at its lowest level since the crisis started. This implies that in terms of employment the recovery has not started in either of these regions.⁷ There is a negative correlation between the regional contraction in employment and the subsequent recovery, which indicates that some regions with a more significant reduction in employment during the crash are experiencing a stronger recovery although they also tend to have a more delayed recovery. These include the Border, Midland and South East.

A simple way to measure the long term evolution of regional employment is to show the level of employment in every year relative to employment in a starting period. Figure 2 shows how regional employment has evolved relative to the level of employment in 1995. The figure shows that the employment growth performance of the regions has differed significantly. The Mid-East in particular recorded the strongest employment growth in the period after 1995, with employment doubling by 2008. The second fastest employment growth was recorded in the Midland while the lowest growth rates were recorded in the Mid-West and Border regions. Thus, while there is divergence across regions, some regions like the Midland that perform poorly with respect to output growth have fared relatively well with respect to employment while others such as the West and Dublin, which have done well with respect to output have not done as well in terms of employment. This is at least partly explained by the substantial cross-regional commuting, where workers commute from their place of residence for example in the Mid-East and Midland to Dublin where the output is produced.

⁷ Both regions recorded some increase in employment followed by further declines in employment.

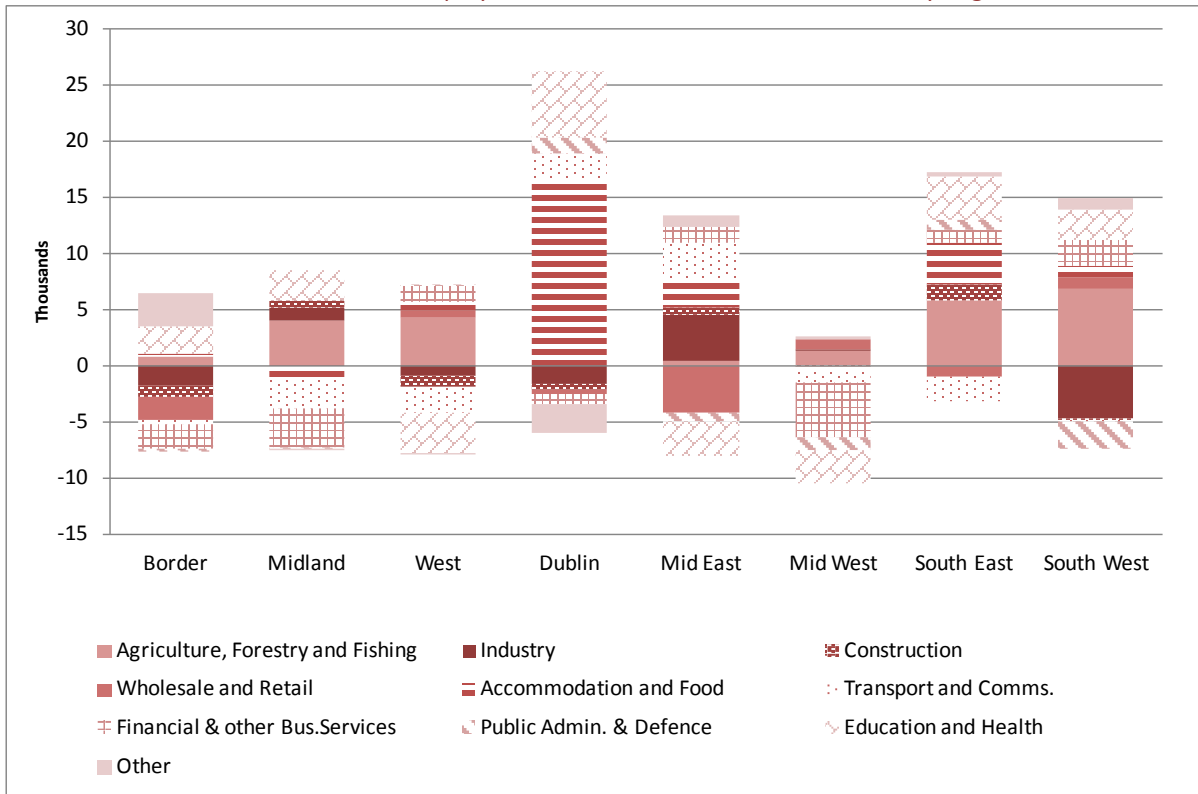
FIGURE 2 Regional Employment Relative to Employment in 1995.

Source: Own calculations based on CSO Labour Force Survey and CSO Quarterly National Household Survey. The data from 1998 onwards are for the second quarter of each year.

Overall, employment growth has been largely concentrated in Agriculture, Forestry and Fishing and in Accommodation and Food Services.⁸ Figure 3 below shows that there are some differences in terms of sectoral employment growth across regions. The growth in the Accommodation and Food Services sector was particularly pronounced in the Dublin and South East regions. Construction employment increased in the Midland, Mid-East and South East regions. Financial and other business service employment increased in the West, Mid-East, South East and South West regions. Employment in Industry grew in the Mid-East and Midland regions but declined in the Border, West, Dublin and South West regions. Growth in employment in Industry is negatively related to total employment growth in regions.

⁸ It should be noted that the numbers relating to Agriculture, Forestry and Fishing have been affected by changes in the sampling frame and may thus not give an accurate measure of the rate of change.

FIGURE 3 Sectoral Contributions to Employment Growth between 2011 and 2014 by Region.



Source: Based on CSO Quarterly National Household Survey.

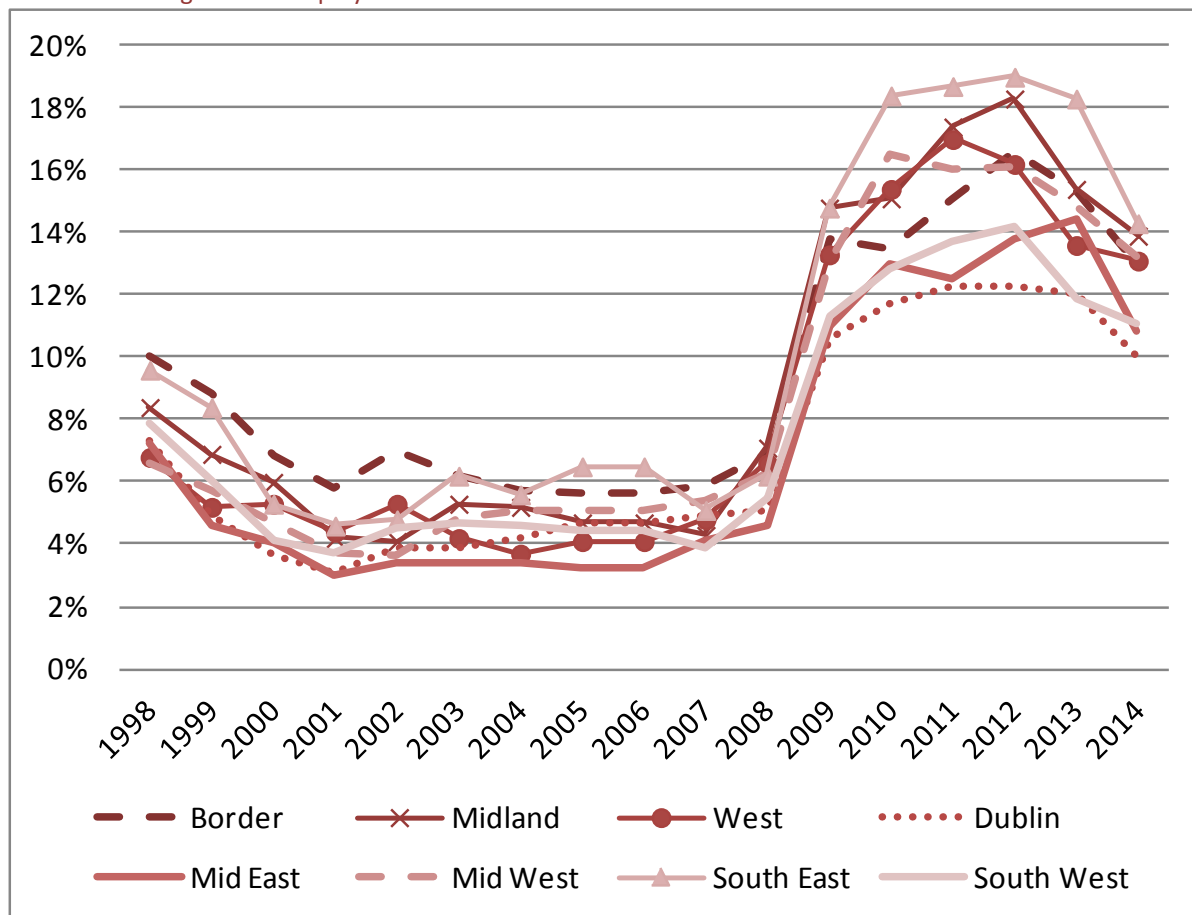
The numbers unemployed and the unemployment rate are also important labour market indicators. Figure 4 shows the evolution of the unemployment rate. The lowest unemployment rates are found in Dublin and the South West and the Mid-East, while the highest rates are in the South East, Midland and Border regions. The fact that the Midland region has a high unemployment rate but also a higher than average rate of employment growth appears to be contradictory. However closer analysis reveals that the labour force in the Midland has expanded faster than employment.

During the period 1998 to 2007 the differences in unemployment rates appear to be relatively stable, but they increased significantly during the crisis. More recently these differences appear to have reduced again, which implies that the recovery is benefitting those regions with higher unemployment more. More formal analysis indicates that regional unemployment rates converged up to 2007, then diverged until 2011 and converged again since then. Of course the reduction in the unemployment rate may also be due to higher emigration or reductions in the labour force participation rate,⁹ resulting in a smaller labour force. While changes to the labour force participation rate have been found to be dampening the unemployment crisis in some regions (notably the Border), given

⁹ See Morgenroth, E. (2013). "The Regional Dimension of the Unemployment Crisis". *ESRI Research Note 2012/4/3*.

the lack of published data it is difficult to establish to what extent emigration is reducing unemployment rates in some regions.

FIGURE 4 Regional Unemployment Rates between 1998 and 2014



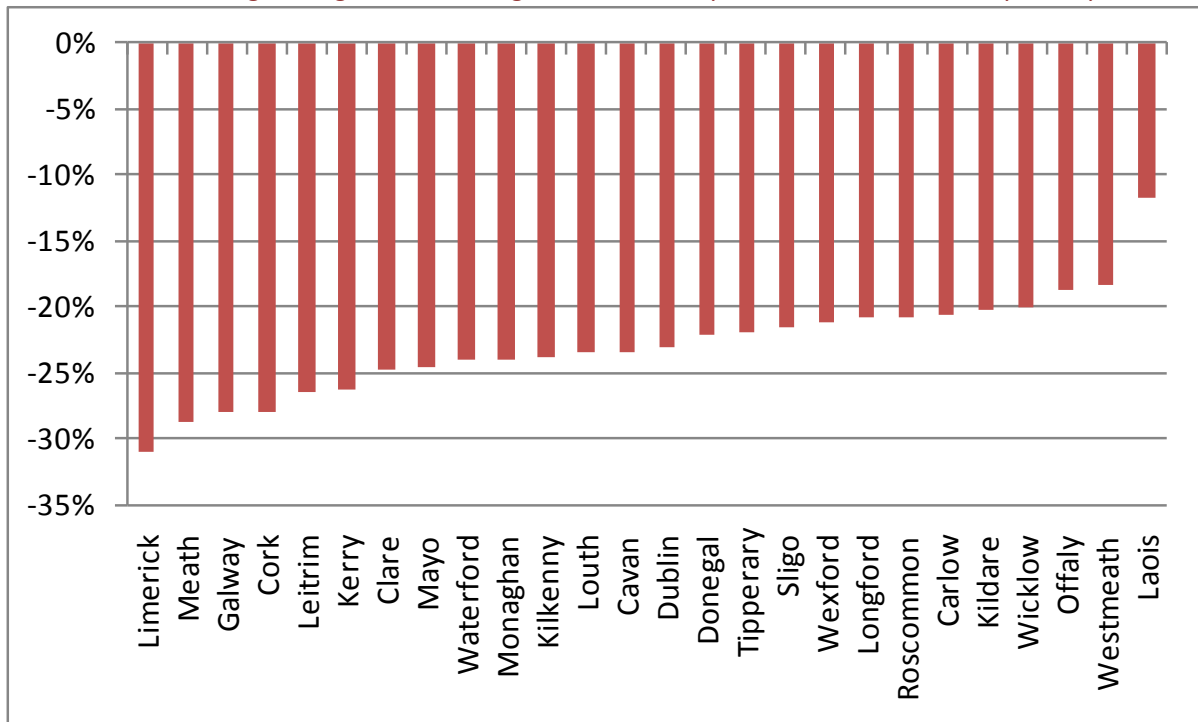
Source: CSO Quarterly National Household Survey.

Apart from the data from the CSO QNHS, the Live Register provides a useful alternative measure of unemployment. It differs from the QNHS as those employed on a part-time, seasonal or casual basis may sign on the Live Register, but would be deemed employed using the official International Labour Organization (ILO) definition of employment. Thus, the numbers of persons signing on the Live Register tends to be greater than the number of persons recorded as unemployed in the Quarterly National Household Survey (QNHS). One advantage of these data is that they are available at the county level and for individual local offices of registration. The number of persons signing on to the Live Register peaked in July 2011 when the number signing on reached over 470,000. In most counties the peak was also reached in 2011, except for Limerick, Longford and Waterford where the Live Register had already peaked in 2010. In Monaghan, Offaly the Live Register peaked in 2012, and Carlow, Kildare, Laois it peaked in 2013. However, the data show that since the peak in the summer of 2011, the number of persons signing on the Live Register has declined in every

county (see Figure 5). The graph shows that the county with the largest reduction in the Live Register (Limerick) recorded more than double the percentage decline recorded in the county with the smallest reduction (Laois).

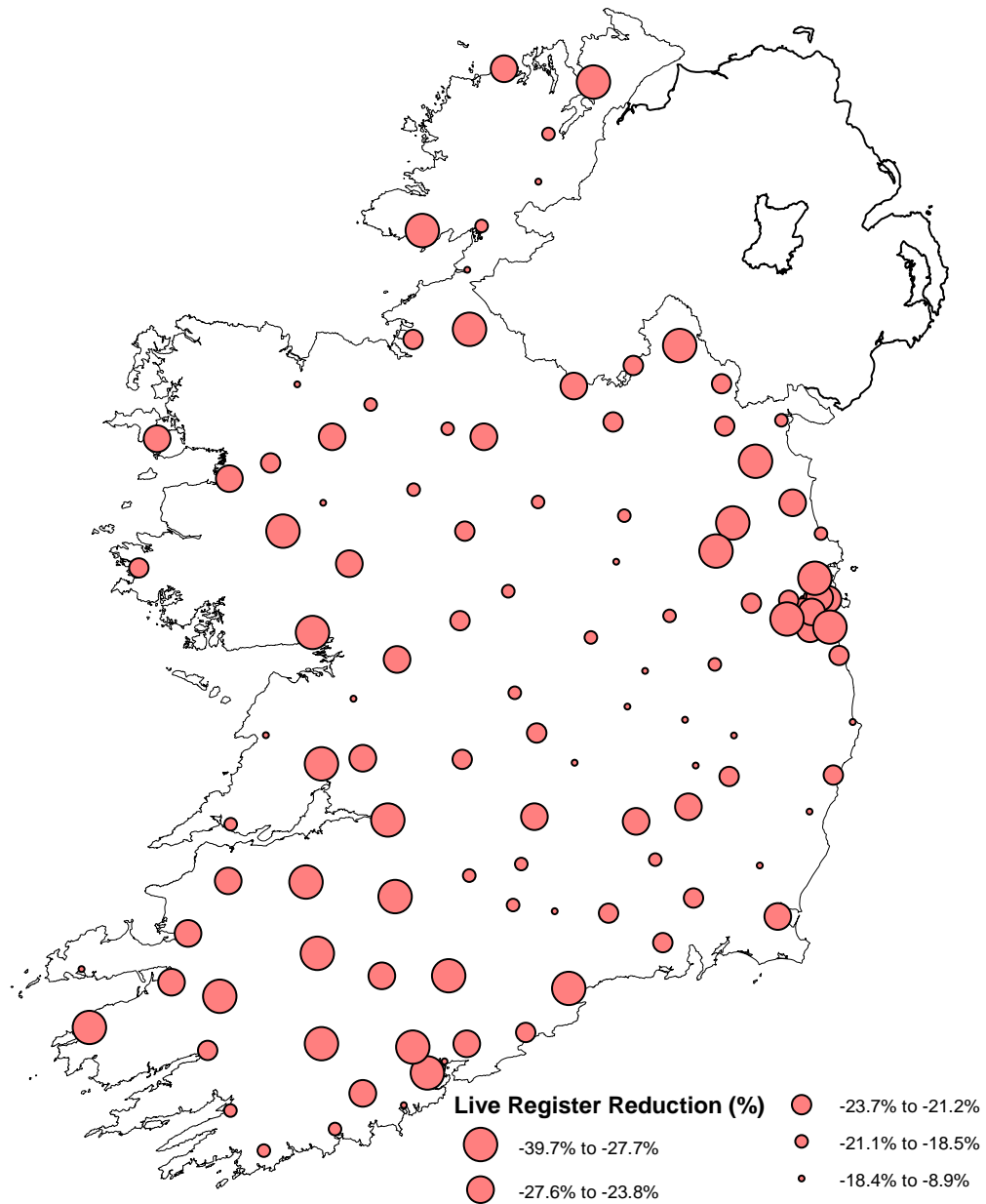
At the level of the 123 local registration offices, the peak number signing on was reached in the majority (61 per cent) in 2011, while 28 per cent reached the peak in 2010, 16 per cent in 2012 and just 14 (11 per cent) peaked in 2013. While the Live Register declined in each office significant variation in the percentage reduction across offices is shown in Map 1 for the period July 2011 to October 2014. The map shows that the registration offices in the Midland, most of the South East and some of the North West recorded a lower reduction in the Live Register than other offices.

FIGURE 5 Percentage Change in the Live Register Between July 2011 and October 2014 by County



Source: Based on CSO Live Register.

MAP 1. Percentage Reduction in the Live Register Between July 2011 and October 2014 by Local Office of Registration.



Source: The data are from the CSO Live Register Statistics.

Summary and Conclusions

In summary, output has followed a long-run pattern of regional divergence with higher levels of output being recorded particularly in the Dublin and South West regions. Since 1995 employment has grown more in commuter regions such as the Mid-East, Midland and South East, which implies that there is some positive spillover into some other regions from the stronger economic performance of Dublin and Cork. The unemployment rate is lowest in Dublin and the Mid-East and highest in the South East and Midland regions. Overall the development patterns in the recovery are similar to those seen in the 1995 to 2007 period. Thus, while it is correct to refer to a two-speed recovery, focusing solely on the recovery ignores the fact that over the longer term there has been renewed divergence in terms of economic activity, which is due to structural differences that have not been addressed during the boom.

While most of the analysis in this paper focused at the regional level, as Map 1 showed, there is considerable heterogeneity within regions. This heterogeneity implies that it is likely that peripheral parts of strongly performing regions, such as the South West, are not as dynamic as the region overall.

The pattern of output growth is consistent with the international evidence of urban-led growth based on agglomeration economies. Agglomeration economies arise through cheaper production costs and a larger customer base in agglomerations. The international literature has also shown that productivity is higher in areas with higher employment densities. Related Irish research has found a strong preference of high value-added sectors for urban locations, which is important since high levels of output and income can only be maintained with high value-added activities.¹⁰ An update of the analysis using 2011 data reveals that urban areas have increased their share in economic activity by 4.1 per cent overall and in all 21 out of 30 sectors since 2006. This suggests that enterprises in urban locations have fared better during the economic crisis. Urban areas now account for 72 per cent of all jobs compared to 68 per cent in 2006. Remote areas account for just 6.6 per cent of jobs in 2011, down from 7.6 per cent. Overall jobs are 11 per cent more spatially concentrated in 2011 compared to 2006.¹¹

Agglomerations also have an advantage for workers as the likelihood of finding the right job increases with the number of firms. However, in contrast to firms

¹⁰ Morgenroth E., (2009). "Exploring the Economic Geography of Ireland" *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. 38, pp.42-69

¹¹ The analysis uses data from a special tabulation of the travel to work data from the Census of Population. Details of the data and analysis are outlined in Morgenroth (2009).

which need to be located in the agglomeration to derive significant benefit, workers do not have to live in the agglomerations to benefit from them. Rather they can benefit by commuting into the agglomerations. Thus, the benefits of agglomeration spill into neighbouring areas by reducing unemployment rates and increasing the numbers that are employed. There is significant international evidence that high-skilled individuals tend to choose larger urban areas to live in, and for Ireland there is also strong evidence that this is the case. For example 75 per cent of those holding a PhD reside in urban areas.¹² This results in a virtuous circle for the larger urban centres which are able to attract more employers due to the availability of highly skilled workers.

From a policy perspective the observed development patterns have important implications. The spatial pattern of both economic activity and population is driven by strong agglomeration forces that are self-reinforcing and that increase aggregate economic performance. Policies to counteract these forces should therefore be avoided as they are likely to be ineffective and damaging to national welfare. Efficiency enhancing agglomerations also imply that regional balance, i.e. equal levels of economic activity (output), is not going to be achieved. Rather, the focus of policy should be to ensure that the wider hinterland can benefit from the labour market benefits of the agglomerations. However, policy must also avoid increasing sprawl, which implies unsustainable transport patterns, and should therefore focus on measures that make urban areas and villages more attractive places to reside in.

¹² Own calculations based on 2011 CSO Census data from the Small Area Population Statistics (SAPS).



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