

## **Developments in the Irish Labour Market during the Crisis: What Lessons for Policy?**

Thomas Conefrey  
*Irish Fiscal Advisory Council*

Martina Lawless  
*Economic and Social Research Institute*

Suzanne Linehan<sup>1</sup>  
*Central Bank of Ireland*

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**Abstract:** This paper provides a comprehensive description of the evolution of the Irish labour market over the past fifteen years, with a particular emphasis on the crisis-related adjustment and its consequences. The sectoral aspect of employment developments and in particular the role of the construction sector is a common theme of this paper. With the unemployment rate tripling between 2008 and 2011, there have been clear implications for labour supply, as evidenced by the falloff in participation and the reversion to net outward migration. Micro data is used to calculate flows between labour market states, thereby providing insight into labour market dynamics. The issue of mismatch between labour demand and supply is highlighted as a key post-crisis challenge. A number of policy messages emerge from this analysis including the importance of a recovery in domestic demand for alleviating the unemployment problem..

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**Keywords:** Unemployment, labour supply, mismatch

**JEL Classifications:** J2, J3, J6

### **1. INTRODUCTION**

Less than a decade ago, papers analysing the Irish labour market were being given titles such as "When unemployment disappears" (Walsh, 2006). This was not an exaggeration. Unemployment in Ireland fell consistently throughout the 1990s and early years of the 2000s, from rates of 15.7% in 1998 to barely 4% in 2000. Not only was this low rate of unemployment achieved, it was sustained at a similar rate until the advent of the financial crisis in 2008, which was exacerbated in Ireland by a spectacular bust in domestic house prices. The domestic slow-down in construction was evident somewhat before the global recession (for example, house price growth turned negative from late 2007) yet the combination and mutual re-enforcement of the two shocks had an extremely negative effect on the Irish labour market. Unemployment reappeared in dramatic fashion, tripling from 5% in the first quarter of 2008 to reach a peak of 15% in the third quarter of 2011.

A number of papers have examined specific dimensions of recent labour market changes. Kelly, McGuinness and O'Connell (2012) examine transitions to long-term unemployment among young people. Focussing again on the younger age cohorts, Kelly et al. (2013) analyse important drivers of transitions out of unemployment among this cohort. Some studies have examined wage adjustment during the crisis (Bergin et al., 2013; Doris et al., 2013). This paper provides a comprehensive description of the evolution of the Irish labour market over the past fifteen years, with a particular focus on developments since 2008. Detailed micro data from the Quarterly National Household Survey (QNHS) is used to examine the changes in employment and unemployment levels and characteristics and also to calculate flows between the different labour market states. We also examine the available data on vacancies and provide an overview of the evidence on wage adjustment.

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<sup>1</sup> We would like to thank the Central Statistics Office for the provision of the anonymous data and Brian Ring in particular for help with queries on the survey. The views expressed in this paper are our own, and do not necessarily reflect the views of the Central Bank of Ireland, the ESCB or the ESRI. E-mail: thomas.conefrey@fiscalcouncil.ie, martina.lawless@esri.ie or suzanne.linehan@centralbank.ie.

Some key messages emerge from this analysis. Exploration of the detailed data points to an exceptional degree of variation underlying the changes in aggregate labour market indicators. While total employment declined by over 300,000 during the recession, young males with low levels of education suffered the largest losses. Our analysis shows that the current stock of unemployed workers contains a large number of young males without third-level qualifications who were previously employed in the construction sector. Moreover, a significant proportion of the unemployed have no previous work experience at all. Although net outward migration has been significant and has moderated the rise in unemployment, the continued high level of inward migration during the crisis has meant that overall net migration has not reached the levels recorded during the 1980s despite large gross outflows. The analysis points to a possible problem of skills mismatch in the labour market given the pool of unemployed workers contains a large number of those previously employed in construction while vacancy rates are highest in sectors such as IT and professional services.

Our analysis gives rise to a number of important policy implications. The nature of the shock experienced by the labour market and the characteristics of the unemployed point to the need to carefully target policy at the most disadvantaged groups, in particular young males with low education and little or no previous employment experience. Given some evidence of skills mismatch in the labour market, there could be a high return to activation policies closely targeted at those areas of the economy where demand is increasing and vacancies already exist. The nature of the employment loss during the crisis indicates that an improvement in domestic demand is also needed to bring about a sustained fall in the unemployment rate.

The remainder of this paper is structured as follows. In section 2, we present evidence on estimates of Okun's law for Ireland and look at changes over time in employment and unemployment by detailed characteristics such as age and education. The scale and composition of migration, based on annual data from the CSO's Population and Migration Estimates, together with changes in labour force participation are discussed in section 3. The next section examines changes in the flows into and out of employment, unemployment and inactivity, which underpin the movements in the main labour market aggregates. In section 5, we discuss the latest evidence on vacancies and skills mismatch. Section 6 provides an overview of wage adjustment during the crisis while section 7 concludes by outlining potential policy responses.

## **2 EMPLOYMENT AND UNEMPLOYMENT DEVELOPMENTS**

This section looks in more detail at the evolution of employment and unemployment, in particular as the crisis evolved. We begin by examining the relationship between output and unemployment known as Okun's Law. Okun's law provides a rule of thumb estimate of how unemployment trends should evolve over time assuming a simple relationship between changes in output and the change in unemployment. We then look at the sectoral aspect and in particular at the central role played by developments in the construction sector as the housing market boomed and then crashed. The final part of this section examines some of the characteristics of the unemployed in terms of gender, duration of unemployment, previous experience, age and education.

### *2.1 Okun's Law*

The negative relationship between the rate of change in real GDP and changes in the unemployment rate, as illustrated in Figure 1a, is frequently expressed in terms of Okun's Law, which captures the correlation between output growth and changes in the unemployment rate. Okun's Law takes the following form:

$$\Delta u_t = \alpha + \beta(\% \Delta GDP_t),$$

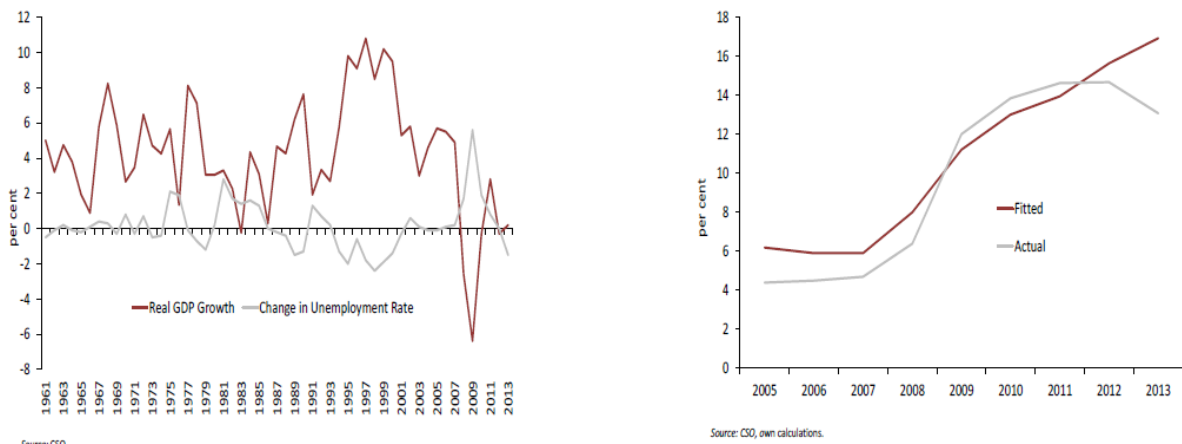
where  $\Delta u$  denotes the absolute change in the unemployment rate,  $\% \Delta GDP$  measures the percentage point change in real GDP and  $\beta$  is referred to as the "Okun coefficient", which is expected to be negative (i.e. stronger output growth is associated with a falling unemployment rate). An estimate of the Okun coefficient for Ireland suggests that it is around -0.31 – a one per cent rise (fall) in Irish GDP per annum has been, on average, associated with a contemporaneous 0.31 percentage point fall (rise) in the unemployment rate.<sup>2</sup> Okun's Law is useful as an empirical "rule of thumb" although its value may be subject to change over time, particularly in a small open economy such as Ireland. To illustrate the time-varying nature of the Okun relationship, Figure 1b shows Ireland's actual unemployment rate together with that predicted on the basis of the observed change in output and the estimated Okun coefficient. The re-emergence of the gap between the actual and fitted unemployment series in 2008 highlights the increased responsiveness of Ireland's unemployment rate to changes in output during this period, with the predicted unemployment increase somewhat lower than that observed. The IMF (2010) note that an increased sensitivity of the unemployment rate to output is attributable to a number of factors including the business cycle, financial crises, large house price busts and other sectoral shocks. Such factors are very much pertinent to Ireland's recent experience. The re-appearance of the gap in 2008 is

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<sup>2</sup> Based on data for the period 1960 to 2012 drawn from the AMECO database, EU Commission.

particularly noteworthy given that the impact of output falls on unemployment was partly offset by a pronounced falloff in labour supply and in the absence of this downward adjustment, the gap would have been much higher. Some further decoupling of unemployment-output developments, albeit of a different nature, has become apparent more recently.<sup>3</sup>

**Figure 1: Okun's Law**



(a) Unemployment Rate and Real GDP Growth

(b) Actual and fitted Okun's law Unemployment Estimate

## 2.2 Employment and Unemployment

Looking at the sectoral composition of employment in Figure 2a, it is evident that construction became the dominant factor in the Irish economy during the decade leading up to 2007. Whelan (2013) points to initially strong fundamental factors underlying housing demand, with a relatively low starting housing stock combined with rapidly growing incomes and population growth. Low interest rates and credit availability also played a role in the increased housing demand. The total stock of dwellings, which had stood at 1.2 million homes in 1991 and had gradually increased to 1.4 million homes in 2000, then proceeded to grow at an exponential rate to reach a level of 1.9 million homes in 2008. Construction was the third largest sector of employment in 2007, before the collapse in house prices and the advent of the global financial crisis resulted in a rapid employment decline - approximately 60% of construction employment was lost over the three years following its peak.

Figure 2b provides a snapshot of the changes in the sectoral composition of employment between 2007 and 2014, which further demonstrates the scale of the collapse of employment in the construction sector relative to other sectors. Manufacturing employment also fell appreciably, albeit to a more limited degree. There were, however, off-setting increases in a number of other sectors, most notably in the health sector.

The dramatic collapse of the construction sector fed directly into a rapid increase in the unemployment rate. The economy went from having a low and steady unemployment rate of between 4% and 5% to double-digit rates not experienced since the mid-1980s. This turnaround occurred extremely rapidly, with the unemployment rate doubling in little over a year (from 5% in the first quarter of 2008 to 10.3% in the same quarter of 2009). The job losses continued and the unemployment rate became progressively worse over the following two years, reaching a peak of 15% in mid-2011. Since then, some improvement has been evident, with a steady reduction in the unemployment rate to 11.8% in the second quarter of 2014 as the numbers in employment have increased gradually. Nevertheless, some of this reduction in the unemployment rate has come from declining labour force participation rates, which are discussed in the next section.

The combination of this large increase in unemployment and the protracted nature of the crisis has resulted in a considerable proportion of unemployed individuals becoming long-term unemployed. Given that developments in the duration of unemployment are determined by flows into and out of unemployment, it is to be expected that during the initial stages of a recession increases in short-term unemployment tend to dominate as unemployment inflows exceed outflows, as was the case during the period between the first quarter of 2008 and the second quarter of 2009. Figure 3a shows the distribution of unemployed workers by unemployment duration, defining the long-term unemployed as those who have been out of work for over one year.

A pronounced fall-off in short-term unemployment was evident from the third quarter of 2009 while the number of persons classified as long-term unemployed simultaneously expanded rapidly. Therefore, the transition from

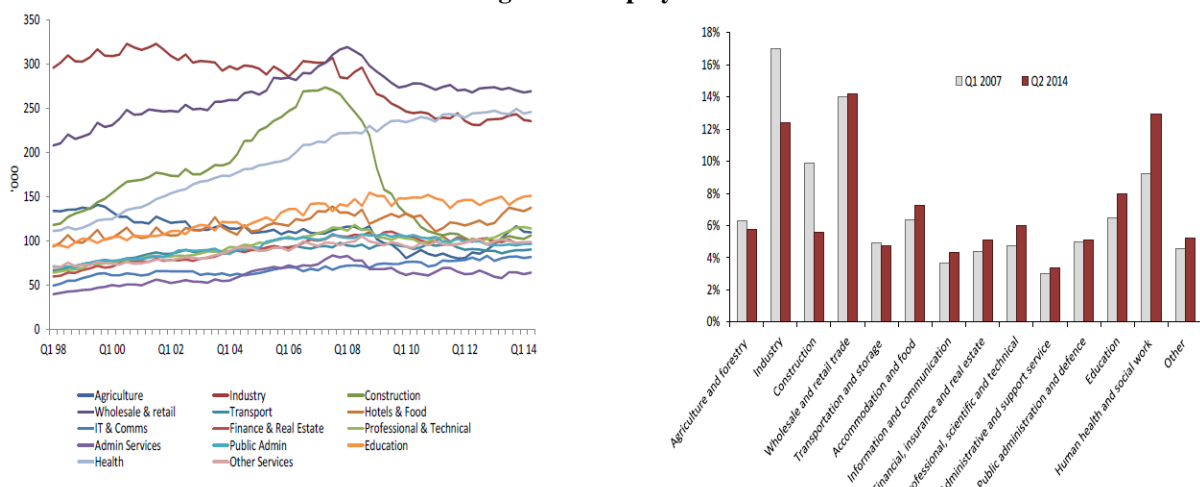
<sup>3</sup> Employment growth and a corresponding reduction in the unemployment rate has been registered since the final quarter of 2012 amid a continuing weak and in some quarters contracting output performance, which is largely held to reflect the inherently volatile nature of output in the pharmaceutical sector arising from the expiry of a number of patents.

short-term unemployment to long-term unemployment was largely concentrated between the third quarter of 2009 and the final quarter of 2011, with this period accounting for in excess of 80 per cent of the increase in long-term unemployment since the first quarter of 2008. The build-up of long-term unemployment during this phase reflects the upward pressure arising from a fall-off in the unemployment outflow rate.

While the level of total unemployment has started to decline, the contribution of the long-term unemployed to the total now stands at around 58%. This gives rise to serious concerns about the depreciation of human capital of these workers and about their decreasing re-employment probabilities. Conefrey, McCarthy and Sherman (2013) estimate that for some categories of worker the chances of re-employment can fall by as much as two-thirds for someone unemployed for more than two years, compared to a person who is unemployed for less than 5 months.

In addition to this increase in measured unemployment, Conefrey (2011) emphasised the substantial rise in broader measures of unemployment during the recession, due to increases in the number of discouraged and marginally attached workers. Figure 3b shows how the measure of discouraged workers, in particular, increased at the onset of the crisis. It also shows that the majority of the discouraged group are male, presumably due to the drying up of opportunities in the construction sector, which accounted for such a large proportion of male employment during the boom years.

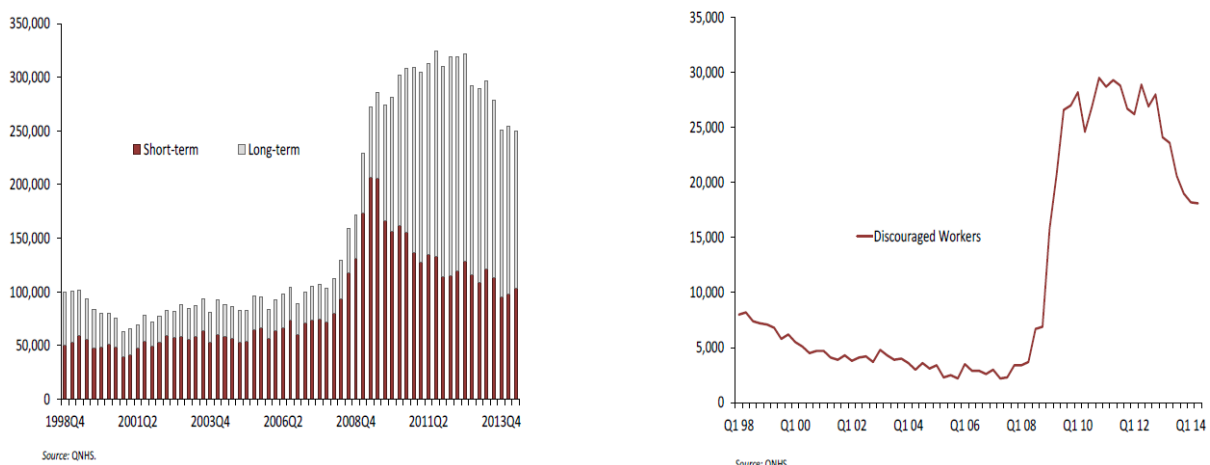
**Figure 2: Employment**



(a) Employment by Sector, 1998-2014

(b) Sectoral Distribution of Employment, 2007 and 2014

**Figure 3: Unemployment and Marginally Attached**



(a) Unemployment by Duration

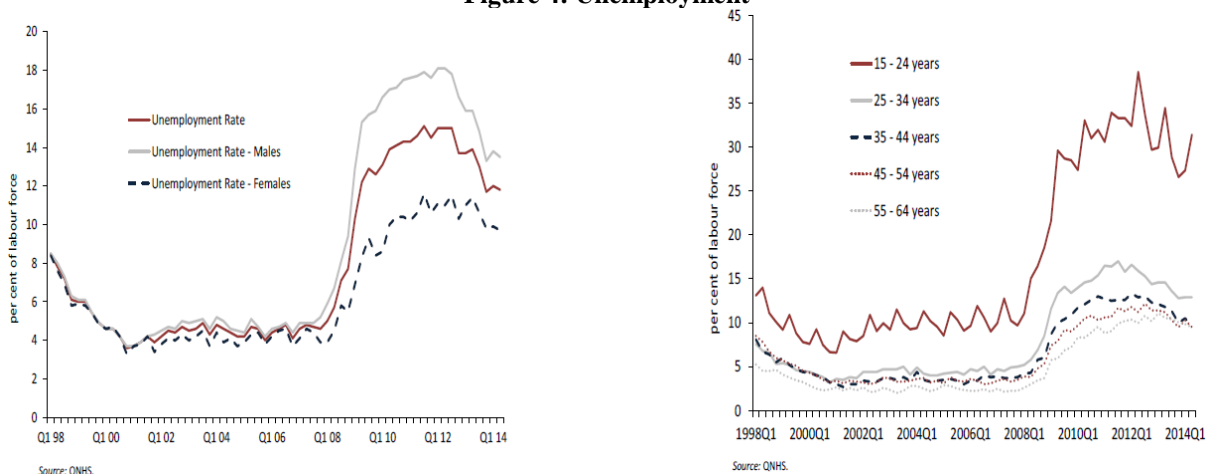
(b) Marginally Attached

Until the collapse of the housing market and hence of construction employment, Figure 4a shows that there was essentially no difference in the incidence of unemployment by gender. As the construction sector employed a particularly high percentage of men, its collapse had important consequences not just for the level of unemployment but also for its gender composition. Female unemployment doubled during the recession, reaching 11% in early 2012. Male unemployment was even harder hit, and at its highest point was over 18% of the male workforce, before improving somewhat since the second half of 2012.

Breaking unemployment down by age, we see in Figure 4b that, although unemployment increased considerably for all groups, there is a consistently higher incidence of unemployment amongst the younger cohorts. The case of the youngest cohort, those aged between 15 and 24, is especially dramatic with unemployment rates peaking above 30%. The reduction in unemployment in this age group in more recent quarters is strongly associated with the falling labour force participation rates discussed in the next section. The high rates of unemployment among the young is an issue of concern given the potential for long term “scarring” effects.

Figure 5a shows that the probability of becoming unemployed varied considerably by education level. Workers with primary education only were at the highest risk of unemployment, with almost one-quarter unemployed in 2012. Those with a third-level qualification, on the other hand, experienced a much lower increase in unemployment probability than either of the other two educational categories. In addition, Conefrey, McCarthy and Sherman (2013) find that education level is also an important factor in determining the probability that an unemployed person finds a new job. They find that an unemployed person with a third level degree is about twice as likely to regain employment as an individual with less than leaving certificate level of education.

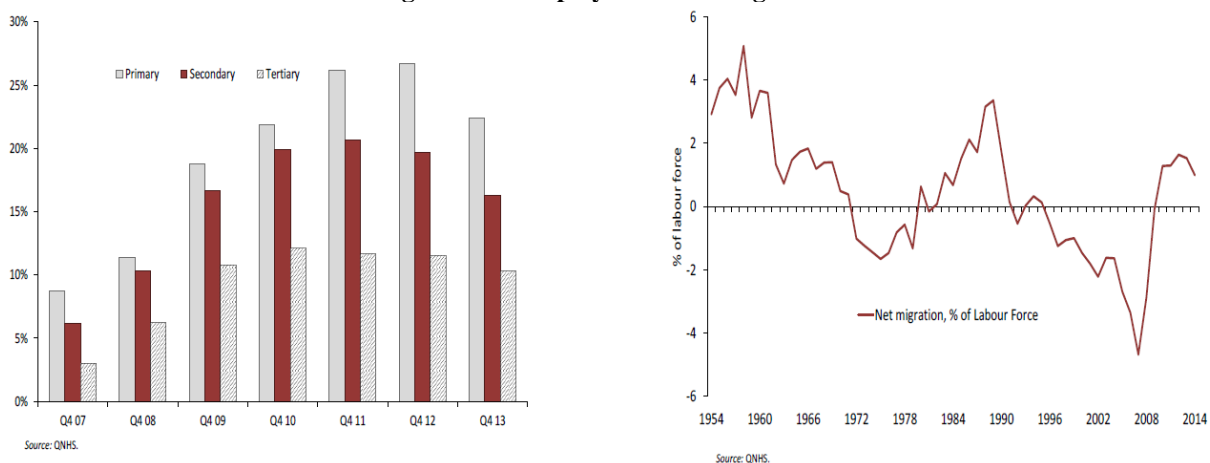
**Figure 4: Unemployment**



(a) Unemployment Rate by Gender

(b) Unemployment Rate by Age Group

**Figure 5: Unemployment and Migration**



(a) Unemployment Rate by Education

(b) Net Migration, % of Labour Force

### 3. LABOUR FORCE AND PARTICIPATION DEVELOPMENTS

In addition to the large changes in employment and unemployment discussed above, the crisis has impacted the overall size of the labour force. The substantial level of migration and its impact on labour supply in an Irish context has been the subject of much research (Duffy, Fitz Gerald and Kearney, 2005, Fitz Gerald et al., 2008). In this section, we examine the scale and composition of migration in Ireland before discussing changes in participation over time. The data on migration come from the CSO's annual Population and Migration Estimates.

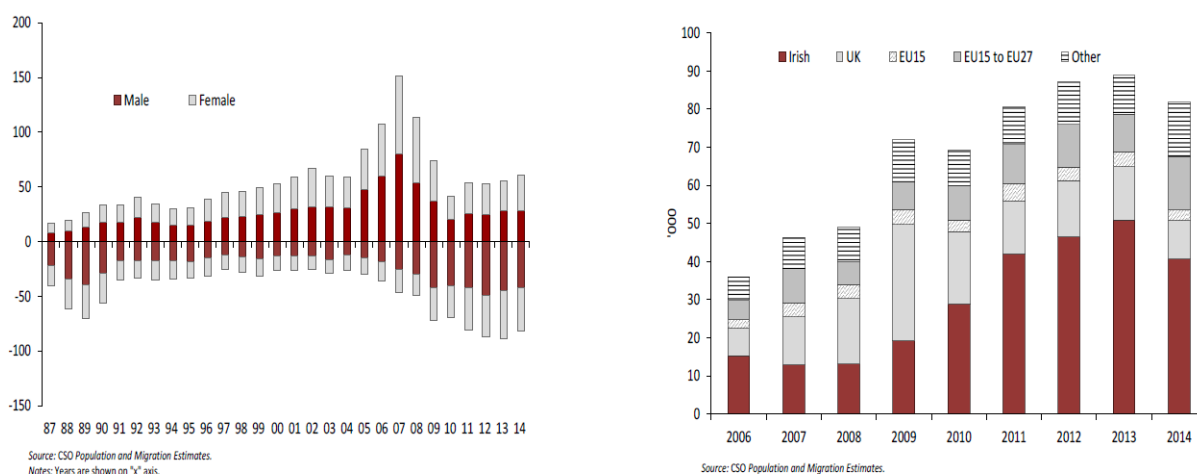
#### 3.1 Migration

Figure 5b shows net migration as a percentage of the labour force from 1950 to the present. For the period up to the 1970s, there was sustained migration out of Ireland. The latter years of the 1970s saw some immigration however this came to an end in the 1980s as Ireland's poor economic performance resulted in a return to significant net emigration, especially during the 1986 to 1989 period. The rapid growth in the economy from 1994 resulted in a reversal of the flow of labour, with substantial net immigration over the second half of the 1990s. The inflow swelled from 2004 with the enlargement of the EU giving rise to an influx of non-Irish nationals. The decline in the economy from 2008 again resulted in a reversion to a pattern of substantial net emigration, averaging 1.4 per cent of the labour force each year from 2009 to 2013.

Figure 6a shows the breakdown of the net migration figure into emigration and immigration by gender. Two interesting features are evident from the chart. The first is the rapid increase in emigration from 2008 onwards, which measured 89,000 in the year to April 2013. The second notable trend from the chart is the continuing high levels of immigration into Ireland since 2008 despite the deterioration in the economy. Although immigration reduced sharply from its peak in 2007 when over 151,000 people came to Ireland, the inflow of labour has averaged over 55,500 annually since 2009, despite the dismal economic environment. This high level of inward migration has kept the figure for net emigration to below levels recorded during the late 1980s despite record numbers leaving Ireland. The gender breakdown in Figure 6a indicates that males account for a larger share of total emigration than females.

Figure 6b shows the breakdown of emigration by nationality from 2006. In 2009, citizens of the accession states accounted for the largest share of total emigrants; of the 72,000 who emigrated in that year, 30,500, or 42 per cent were citizens of the new member states. Irish nationals numbered 19,000 or around 27 per cent of all emigrants for the same period. A change in the composition of emigration has taken effect over recent years, with Irish nationals now accounting for over 50 per cent of all those leaving the country since 2010. Moreover, it is estimated that Irish nationals accounted for 41 per cent of all emigration in the year to April 2014 while UK citizens comprised the second largest group, accounting for close to 14 per cent of all emigrants.

**Figure 6: Migration**



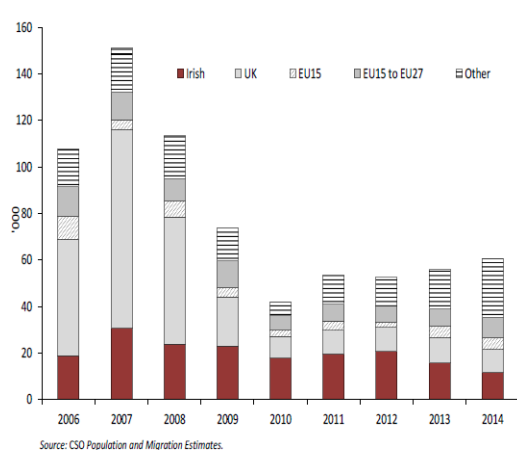
(a) Migration by Gender

(b) Emigration by Nationality, thousands

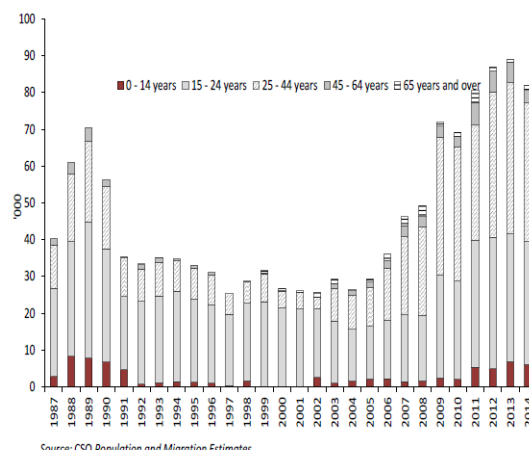
The decomposition of immigration by nationality is shown in Figure 7a. The chart illustrates the sharp decline in the number of immigrants coming to Ireland from the accession states as economic growth stalled from 2008. In 2007, 85,000 people came to Ireland from the new member states, accounting for just under half of total immigration. This number declined to just 9,300 in 2010 and 10,000 from 2011 to 2013. In contrast, the number of Irish nationals returning to the state has remained broadly stable at around 20,000 per annum since 2009. With the decline in the number of non-Irish nationals coming into the state, Irish nationals now account for the largest share of total immigrants at around 36 per cent over the last 5 years.

Emigration tends to be most common among the most mobile cohorts of the population, in particular the younger age groups. Figure 7b shows the breakdown of emigration by age group from 1987 and highlights the fact that emigration has been concentrated among the younger 15-24 and 25-44 age cohorts. Compared to the previous episode of large-scale emigration in the late 1980s, the graph indicates that in recent years a larger share of all emigrants are in the 25-44 year old age group, with a decline in the number in the 15-24 age group. In 1989, 52 per cent of emigrants were aged 15-24 while 31 per cent were in the 25-44 age group. In 2014, the share of 15-24 year olds had declined to 34 per cent while the proportion of all emigrants aged 24-44 had increased to 38 per cent.

**Figure 7: Migration**



(a) Immigration by Nationality, thousands



(b) Emigration by Age, thousands

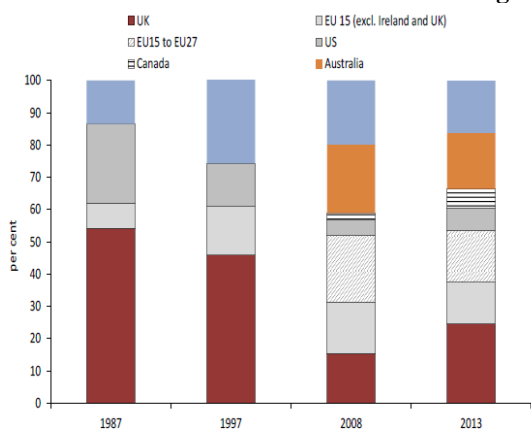
A notable shift in the destination of emigrants from Ireland is evident in Figure 8a. In the late 1980s, the UK was the destination of choice for the bulk of emigrants, with 50 to 60 per cent of all those leaving the state moving to the UK. Since the late 1980s, however, there has been a steady decline in the proportion of emigrants from Ireland leaving for the UK, with a substantial increase in the share emigrating to countries outside the UK, EU15 and US, as shown in the chart. In the year to April 2013, over half of emigrants moved to countries outside these three regions while around one in five relocated to the UK. Within the rest of the world category, Australia and Canada are the most popular destinations.

### 3.2 Labour Force Participation

Along with the switch from outward to inward migration discussed above, the 1990s and early 2000s saw steady increases in labour force participation rates. As shown in Figure 8b, this increase was particularly strong for female labour force participation, which was slightly below 45% in 1998 and grew steadily to over 55% by 2007. There was also a modest increase in male labour force participation over this period. Honohan and Walsh (2002) point to the high levels of underemployment of the Irish population in the 1980s as one of the preconditions for the rapid growth period that followed: "High initial unemployment, an exceptional gap between Irish and U.K. unemployment rates, low initial participation rates, and a baby bulge endowed with high educational qualifications entering the labour force ensured that there would be no difficulty in filling a large number of newly created jobs. The difference was that in the 1990s these preconditions were actually used to create an employment miracle."

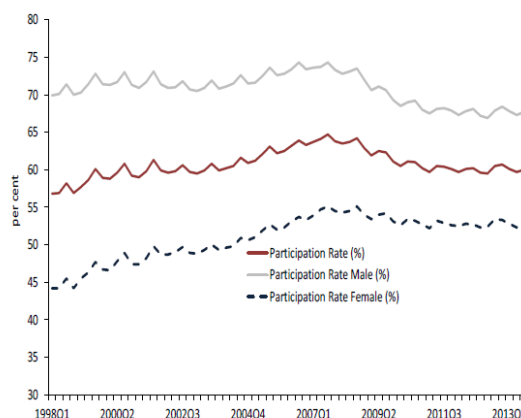


**Figure 8: Labour Force**



Source: CSO Population and Migration Estimates.

(a) Emigration by Destination, thousands



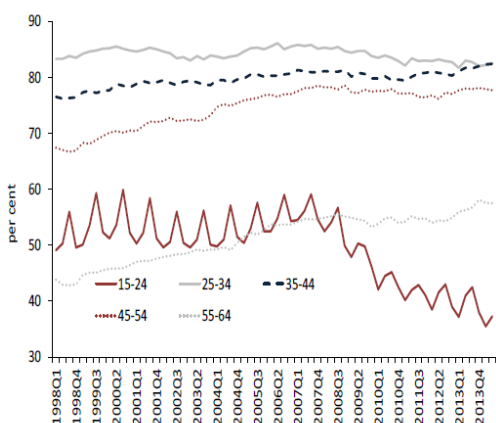
Source: QNHS.

(b) Participation Rate by Gender

Following the shock of the financial crisis and recession, the labour force participation rate began to decline, particularly for males as construction opportunities disappeared. Looking at the labour force participation rates by age in Figure 9a, we see that the decline in participation has been driven to a large extent by the youngest cohort - those aged between 15 and 24. As discussed in the previous section, net outward migration since 2009 has also been concentrated among the younger age cohorts of the population. Examining this decline in young people's labour market participation, Conefrey (2011) finds that the majority of those who have exited the labour force, yet remain in Ireland, have returned to education. The only cohort with an increasing labour market participation in the crisis period has been the 55 to 64 age group, where the steady growth in participation was relatively unaffected, although the absolute levels of participation for this group remain significantly below those of the 25 to 54 groups.

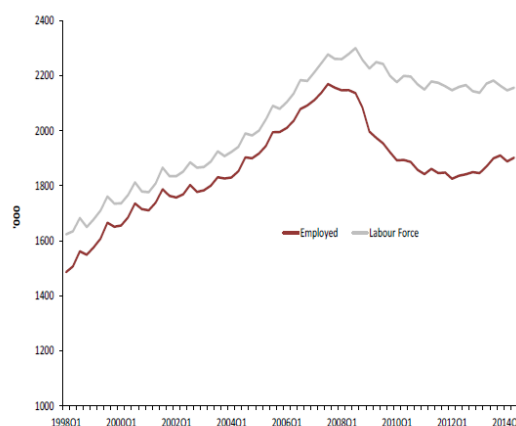
The combination of population growth and an increase in labour force participation rates resulted in an increase in the labour force of over 700,000 individuals and an astonishing increase in numbers employed from 1.5 million to over 2.1 million at the peak in 2007, as shown in Figure 9b. The crisis hit labour force participation rates to a certain extent, particularly as just mentioned amongst the young and males, but the main impact was on numbers employed and unemployed with employment falling by 15% over the four year period and the unemployment rate peaking at over 15 per cent.

**Figure 9: Employment and Labour Force**



Source: QNHS.

(a) Participation Rate by Age



Source: QNHS.

(b) Numbers Employed and in the Labour Force



#### 4. LABOUR MARKET FLOWS

The previous section examined the main developments in employment, unemployment and inactivity stocks. This section complements the analysis of the previous two sections by describing the behaviour of the labour market flows which underpin the changes in the aggregate stocks. The flows series provide important insights into the dynamics of the labour market, for example, the data can illustrate the degree to which net changes in employment reflect changes in the rate of job creation (employment inflows) or job destruction (employment outflows).

To carry out this analysis, we use micro data from the QNHS to track the labour market status of individuals over the consecutive quarters during which they remain in the QNHS sample. Based on this approach, the movements of individuals between employment, unemployment and inactivity between two consecutive quarters can be computed. A further advantage of the micro data is that it contains a large set of information on worker characteristics such as age, sex and sector, which can be used to decompose the flows series.

Table 1 shows average flows between the different labour market states of employment, unemployment and inactivity over different time periods pre and post the recent crisis. The average flows are determined by summing up the number of transitions between various states (employment to employment (e to e), employment to unemployment (e to u), unemployment to employment (u to e) etc.) in two consecutive quarters and dividing by the total stock in the origin group. The resulting figures can then be interpreted as the probability of transitioning between the various states. For example, the figure in the top left cell of Table 1 signifies that over 1998Q1-2013Q1 period, the probability of an employed person remaining employed is 96.2 per cent, becoming unemployed is 1.2 per cent and becoming inactive is 2.7 per cent. It is important to note that as individuals typically remain in the QNHS sample for five consecutive quarters, the transition rates in 1998, for example, are based on a different sample of individuals to that used to calculate the 2013 transitions. The descriptive results presented in this section do not take account of possible differences in the characteristics of individuals in the sample over time.

**Table 1: Average Labour Market Transitions**

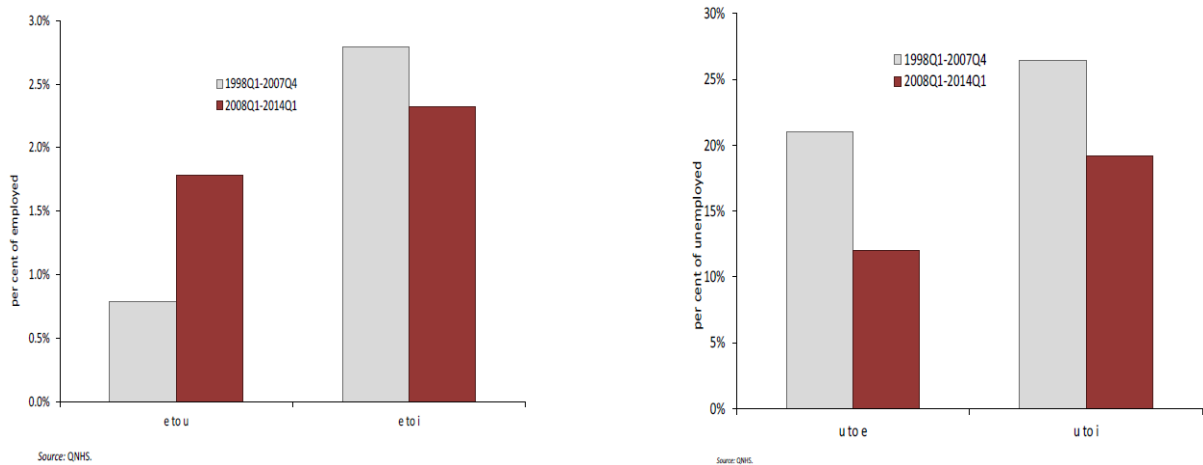
1998Q1-2007Q4			
	e	u	i
e	0.964	0.008	0.028
u	0.209	0.526	0.264
i	0.043	0.016	0.941
2008Q1-2013Q1			
	e	u	i
e	0.957	0.019	0.024
u	0.119	0.689	0.191
i	0.029	0.035	0.936
1998Q1-2013Q1			
	e	u	i
e	0.962	0.012	0.027
u	0.178	0.582	0.239
i	0.038	0.022	0.939

Significant changes are evident over time in the transition probabilities shown in Table 1. Looking first at employment transitions, the average probability of moving from employment into unemployment increased from less than 0.8 per cent from 1998 to 2007 to over 1.9 per cent between 2008 and 2013. The largest changes are evident in the transition probabilities for unemployed workers. Between 1998Q1 and 2007Q4, the probability of an unemployed worker becoming employed averaged 21 per cent, over the 2008Q1 to 2013Q1 period, the probability of transitioning out of unemployment almost halved to 11.9 per cent. The likelihood of an unemployed worker remaining unemployed also increased significantly, from 53 per cent pre crisis to 69 per cent over the 2008-13 period. Changes are also evident in the rate of transition into and out of inactivity. The probability of an inactive worker (someone not in the labour force but still in the state) regaining employment averaged 4.3 per cent between 1998 and 2007, this declined to 2.9 per cent for the most recent period.

The impact of the crisis on employment outflows is further illustrated in Figure 10a. The chart shows that exits from employment to unemployment increased sharply from 2008 onwards. Labour market flows out of unemployment are shown in Figure 10b with the fall in transitions out of unemployment clearly evident. Flows from employment to unemployment and unemployment to employment from 1998 to 2013 are shown in Figure 11a and Figure 11b, respectively. The charts illustrate that the increase in the unemployment rate observed over this period reflected a combination of a steep rise in flows from employment to unemployment and also a reduction in flows from unemployment back into work.

Section 2 noted the worrying rise in long-term unemployment and the potential "scarring" effect of prolonged unemployment on an individual's labour market prospects. In Figure 12, based on the micro data, we show transitions from unemployment to employment by duration of unemployment. The chart illustrates starkly the deleterious effect of long term unemployment on an individual's likelihood of regaining employment. Based on average transitions over the 2008-2013 period, a person who has been unemployed for three months or less is four times more likely to regain employment than someone who has been out of work for over a year. Taking the period from 1998 to 2007 when labour market conditions were significantly stronger than is currently the case, the cost of long term unemployment, in terms of the reduced likelihood of that cohort regaining employment relative to the short-term unemployed, was similar to that observed for the unemployed of today.

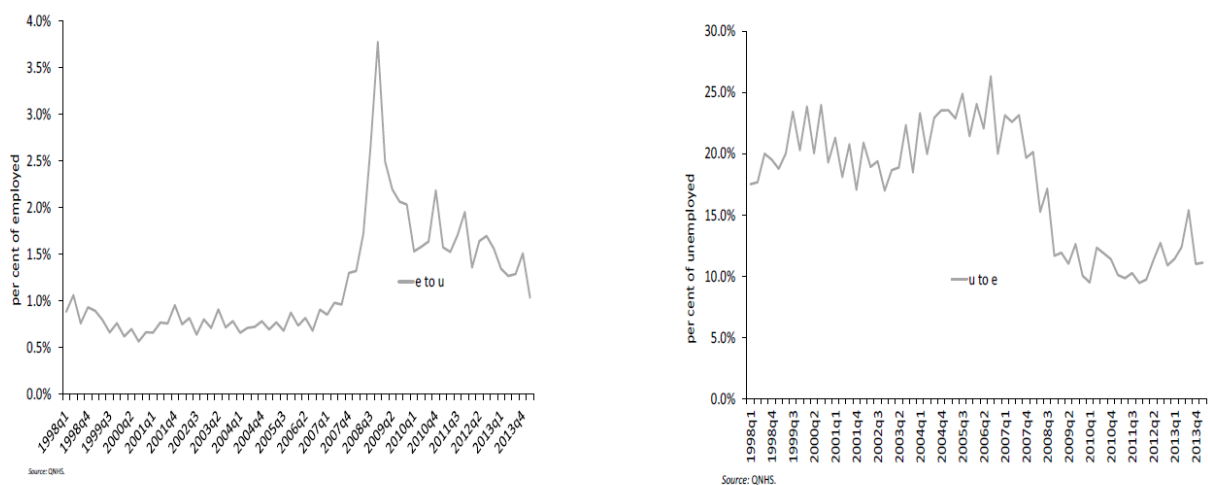
**Figure 10: Employment and Unemployment Outflows**



(a) Employment Outflows, % of Employed

(b) Unemployment Outflows, % of Unemployed

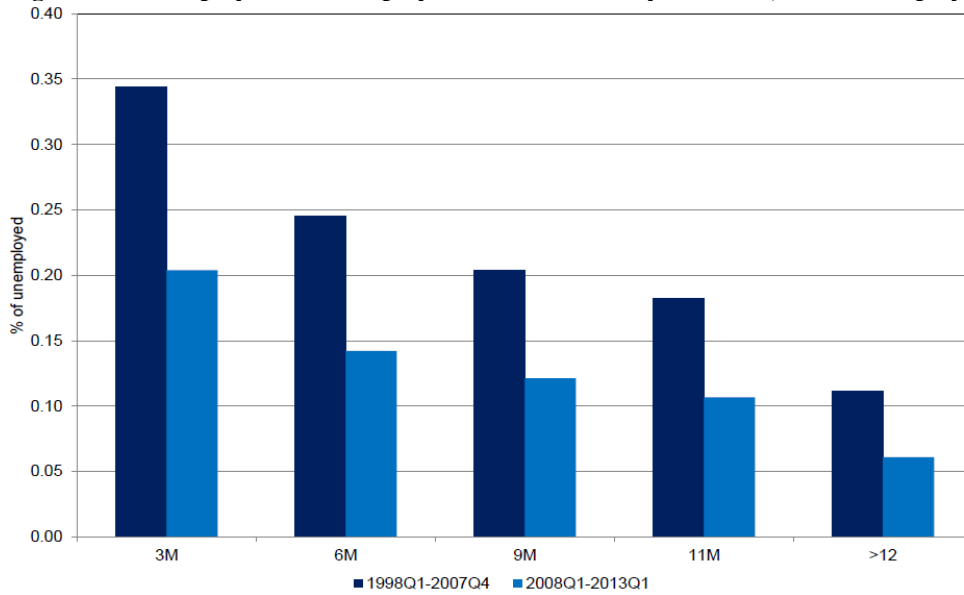
**Figure 11: Employment and Unemployment Flows**



(a) Employment to Unemployment Flows, % of Employed

(b) Unemployment to Employment Flows, % of Unemployed

**Figure 12: Unemployment to Employment Transitions by Duration, % of Unemployed**



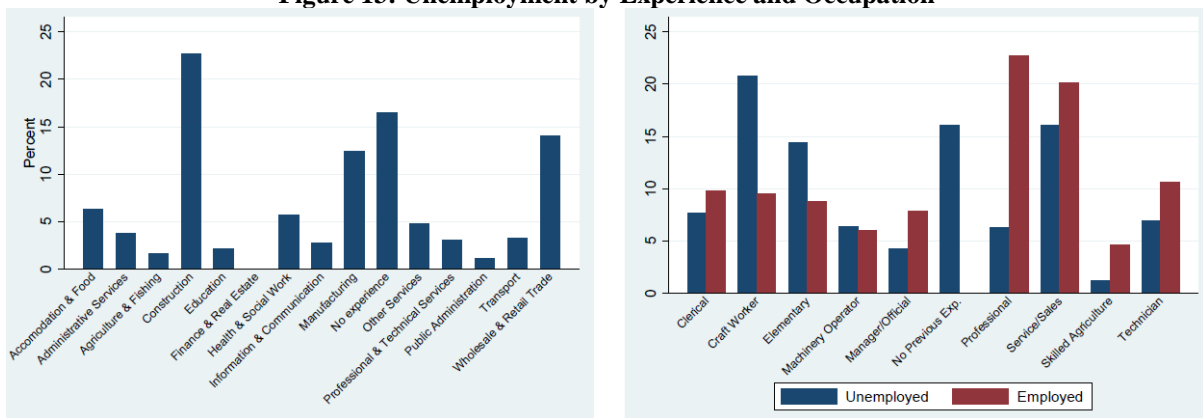
**5. VACANCIES AND MISMATCH**

It is clear that the dramatic increase in unemployment described in this paper is a topic of major policy importance. Hampering the prospect of restoring the full employment levels of the early years of the last decade is a concern that the experience and skills of the current unemployed do not match up well with the requirements of the sectors of the economy where job growth is most likely. A common theme of this paper has been the importance of the construction sector and Figure 13a shows that in the first quarter of 2013 close to one-quarter of the unemployed previously worked in construction. The potential for the same levels of employment to re-emerge in that sector is extremely limited, so this is a large cohort where retraining should be a priority.

A second aspect of concern arising from this information on previous sector of employment is the high percentage of the unemployed reporting no previous work experience at all. In the first quarter of 2013, this related to 16% of the unemployed and is consistent with the earlier pattern of higher unemployment rates amongst the youngest age cohort.

The potential mismatch of the skill profile of the unemployed can be further highlighted by comparing the previous occupation of the unemployed with the occupational distribution of the employed, as done in Figure 13b in relation to the first quarter of 2013. The impact of the fall of construction employment is clearly illustrated by the fact that the percentage of craft workers currently unemployed was almost double its share amongst the employed. Conversely, professional occupations are reported by over 20% of those in employment but only 6% of those unemployed have experience in such areas.

**Figure 13: Unemployment by Experience and Occupation**



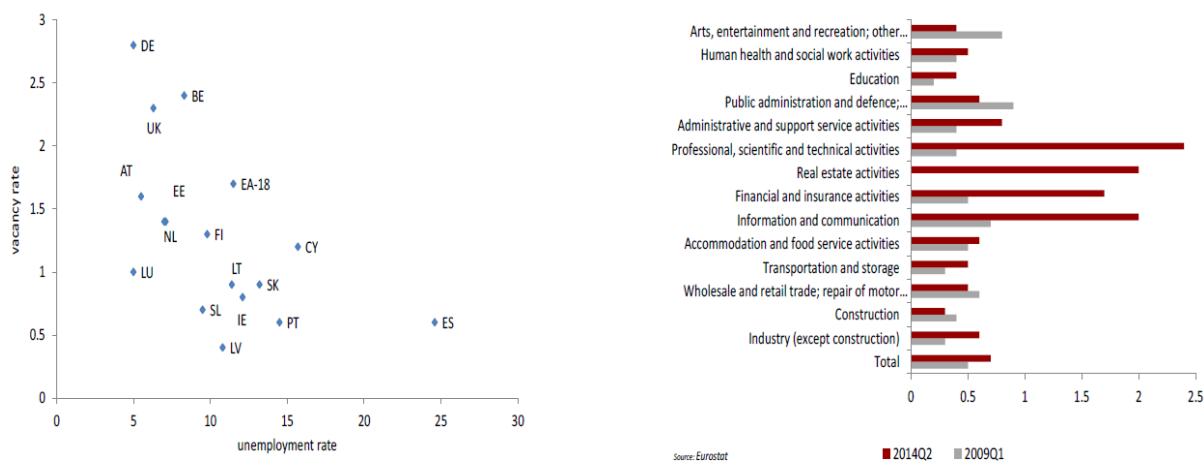
(a) Previous Sectoral Experience of Unemployed

(b) Previous Occupation of Unemployed and Occupation Distribution of Employed

There are many factors which affect the outflow rate from unemployment, such as effective and successful job search and the matching of available skills to employers' requirements. In addition, unemployment outflows will arise as individuals avail of education and re-training opportunities or as they become discouraged and stop looking for work. Of primary relevance, however, is the demand for labour. The vacancy rate is a leading indicator of labour demand and as a result, the probability of exiting unemployment is positively related to the vacancy rate, as noted by Elsby, Hobijn, and Sahin (2010) and Shimer (2005).<sup>4</sup>

While the short nature of the vacancy series for Ireland<sup>5</sup> precludes a detailed analysis, a cross-country comparison at the euro area level reveals that in mid-2014 Ireland had one of the lowest vacancy rates in conjunction with one of the highest unemployment rates, see Figure 14a, which is suggestive of demand deficiency. Available sectoral vacancy data for Ireland indicate that quite a low vacancy rate currently applies across all sectors, with the exception of the ICT and the financial services sector, as shown in Figure 14b. The comparatively high and rising vacancy rate of these two sectors suggest that a solid number of vacancies exist, albeit in proportion to a small employment base relative to other sectors. It is important to note that low vacancy rates prevail in the larger, labour intensive sectors, which have experienced significant reductions in employment, most notably the construction sector. This suggests that some level of sectoral mismatch exists between the small number of vacancies which do exist and the large pool of unemployed labour raising the prospect of skills mismatch and how it is to be addressed.

**Figure 14: Vacancy Rate**



(a) Unemployment Rate and Vacancy Rate, Cross-Country Q2 2014

(b) Vacancy Rate by Sector, Q2 2014

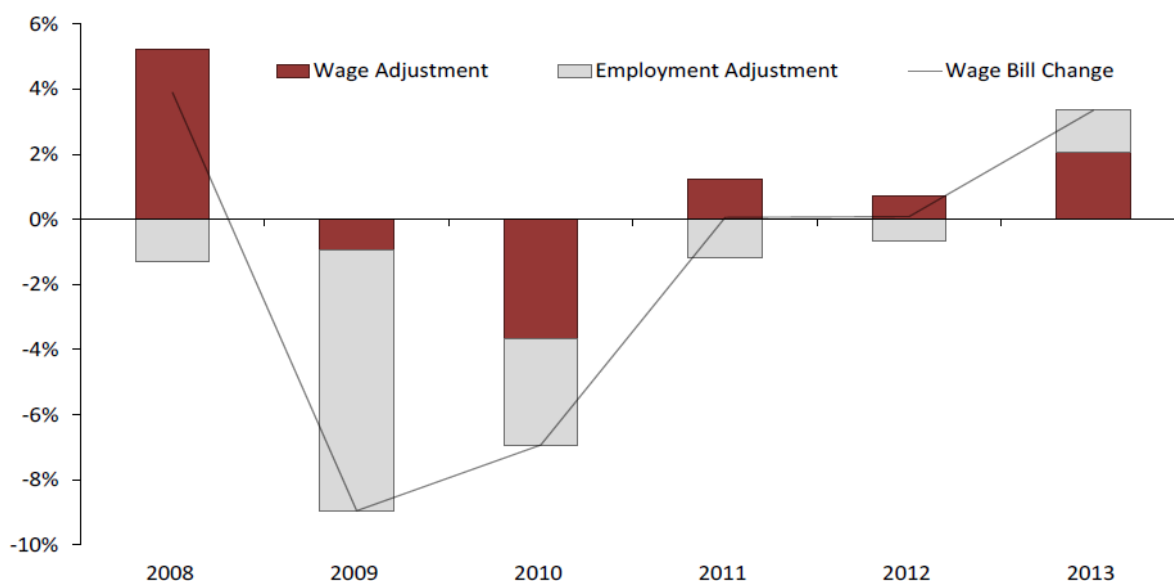
## 6. WAGE ADJUSTMENT TO THE CRISIS

Wage flexibility has played a role, albeit somewhat limited, in facilitating the labour market adjustment since the onset of the crisis, with a substantial proportion of the reduction in the wage bill achieved by cutting employment. A decomposition of the change in the wage bill provided in Figure 15 clearly suggests that this downward wage adjustment almost entirely took effect during 2009 and 2010, with a very modest wage reduction in 2011. Wages at the aggregate level returned to growth in 2012 despite weak domestic economic conditions and considerable spare capacity in the labour market.

<sup>4</sup> A job vacancy is defined as a newly created, unoccupied, or about to become vacant post on a specific reference date. The vacancy rate is measured as the vacancy to unemployment rate. Vacancy data for Ireland are published by Eurostat.

<sup>5</sup> Vacancy data for Ireland are currently only available from Q1 2009.

**Figure 15: Decomposition of Wage Changes**



Source: CSO National Income and Expenditure Accounts.

Wage dynamics at an aggregate level, however, do not solely reflect developments at an individual level; changes in the composition of employment also play a role. An approximation of the impact of compositional effects using aggregate wage data suggests that changes in the composition of employment placed some upward pressure on average wage levels, albeit to varying degrees across sectors. A marked upward compositional impact was estimated in the case of industry, construction and professional services, which were amongst the most severely affected sectors during the crisis. The inherent limitations of aggregate wage data, however, preclude a lengthier and more detailed analysis of the role of compositional changes in employment in driving wage developments.

A number of studies have gone beyond this aggregate wage data. Both Walsh (2011) and Bergin, Kelly and McGuinness (2012) conducted firm-level studies, which concluded that at the aggregate level, compositional effects did not place upward pressure upon wage developments during the crisis. The latter study concludes that there has been a general reluctance among firms to cut wages in order to avoid productivity losses arising from worker dissatisfaction or higher rates of labour turnover. A recent paper by Doris, O' Neill and Sweetman (2013) finds a substantial change in wage dynamics since the crisis began – the share of workers receiving a cut in wages more than doubled while the share experiencing a wage freeze increased substantially, albeit with considerable heterogeneity in terms of the adjustment observed.

## 7. POLICY CONCLUSIONS

The economic and financial crisis which hit the Irish economy in 2008 has inflicted severe damage on the labour market and will likely take some time to repair. The extent of the damage was best represented by the scale of the increase in unemployment during the recession. The unemployment problem would be even worse were it not for the scale of net emigration and the fall in labour force participation experienced in recent years. With progress being made in restoring the public finances to health and with the restructuring of the banking sector underway, it is important that appropriate policy attention is given to addressing some of the imbalances in the labour market identified in this paper.

The analysis demonstrated that a large number of the unemployed have low skills and were either previously employed in construction or have never worked. We also show the extent of the disadvantage experienced by the long-term unemployed, with the probability of individuals in this group regaining employment much lower than for the short term unemployed. This indicates that long-term unemployment erodes the skills and training of the unemployed and makes them less likely to be considered for new opportunities that arise in the labour market. As a result, this group faces a high risk of deskilling, raising the prospect of hysteresis in the labour market. Related to this, and of key policy relevance, is the possible problem of skills mismatch. If unaddressed,

this could mean that a recovery in the labour market could bypass a large portion of the current pool of unemployed workers.

By shedding light on the details of the unemployment problem, this research highlights a number of areas where policy action is needed. Young males with low educational attainment and no work experience are a key at risk group. For those who have skills, training policies should focus on closing the gap between the skills supplied and those demanded by employers, especially given the permanent downsizing of the construction sector.

The analysis presented in this paper also points to demand deficiency in the economy as an important explanation for the unemployment problem. With signs that domestic demand is beginning to recover, this should help make some inroads into the unemployment problem. As the probability of moving from unemployment to employment depends on the vacancy rate and recent vacancy data suggest that unemployment is also currently a demand-side issue, further measures providing support to output growth, improving access to credit and restoring consumer and investor confidence are required.

The analysis also suggests the presence of a large shadow labour supply in Ireland consisting of a portion of the unemployed who, although available for work, are not equipped with the skills to fill vacancies in sectors where demand is rising. In addition, there are a large number of discouraged workers currently outside the labour force. If labour supply was reduced through this group being permanently excluded from the labour force, it could damage the economy's long-run potential growth, as well as having negative social consequences.

While some progress has already been made in terms of labour market reform, the long- term consequences of the financial crisis for the functioning of the labour market, such as the upward trend in structural unemployment and skills mismatch, highlight the need for further urgent policy action.

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### **FIRST VOTE OF THANKS PROPOSED BY AEDÍN DORIS, MAYNOOTH UNIVERSITY**

This paper provides a very useful overview of the Irish labour market in recent years in terms of employment, unemployment, migration, participation, transitions between labour market states, labour market mismatch and wages. Some of the broad patterns described are fairly well-known – such as the material on employment, unemployment, participation and migration. Other material is less well-known, particularly the analysis of transitions and the breakdown of the vacancy rate by industrial sector, and I particularly appreciated these latter two sections. It will be very useful to those interested in the Irish labour market to have all these dimensions competently described in one piece, and I thank the authors for their efforts in pulling these various strands together so coherently.

In my comments this evening, I would like to do two things. First, I would like to give my perspective on one particular aspect of the paper – that on wage adjustment – that I happen to have been working on in recent times. The second is that I would like to mention what I see as a weakness in the connection between the admirable analysis and the policy recommendations.

Turning first to the section of the paper on the wage adjustment to the crisis, as I mentioned, I have been working with my colleagues at Maynooth University, Donal O'Neill and Olive Sweetman, on research on wage flexibility, and indeed Conefrey, Lawless and Linehan are kind enough to reference our working paper (Doris et al., 2014). We have been using a new administrative data set, known as the 'Job Churn' data, provided by the Central Statistics Office but coming originally from Revenue tax records, to examine wage flexibility in the Irish labour market. Unusually, we have data on the whole population of employees, and we have information on earnings that is free of measurement error – a valuable advantage when examining wage flexibility, since measurement error causes many problems for these types of analyses. The earnings measure we have is 'taxable annual earnings', so is quite comprehensive as it includes components such as bonuses, but also benefits-in-kind. In addition, we can follow individual workers over time, and so get rid of composition effects entirely. We are very enthusiastic about the potential of this Job Churn dataset for the analysis of the Irish labour market.

As the Conefrey et al. paper reports, we found that there has been a substantial change in earnings dynamics as a result of the crisis, and I would like to tease out the implications of that for our understanding of the behaviour of the Irish labour market. The first thing to note is that, even before the crisis, the labour market was already flexible, with 17-18% of job stayers experiencing annual earnings cuts. Now some of this may be due to changes in hours of work, but most of it seems to be due to genuine variability in earnings – we checked this by examining another data set – the EU-SILC – which is less comprehensive but does record hours of work.

Turning to the crisis period, it is remarkable that during the crisis, in 2009/10, the percentage of workers experiencing earnings cuts rose from 17% to 55%; in the public sector, this figure was 81%, and 46% in the private sector. These figures are high by international standards: comparable figures for the same period in the US and the UK of 21-24% are given in papers by Elsby et al. (2014) and Blundell et al. (2014).

Of course, the fact that there was a substantial jump in the proportion of workers experiencing pay cuts, and the fact that the proportion experiencing cuts was higher in Ireland than elsewhere does not of itself tell us that the Irish labour market is particularly flexible; it could be that the drop in demand was so much bigger in Ireland that even greater cuts should have been seen if wages were truly flexible.

To address this issue, we calculate a measure of wage rigidity that was proposed by Dickens et al. (2007); this measure uses the proportion of workers affected by nominal wage freezes to estimate the proportion of wage cuts that employers would like to impose that are prevented by nominal wage rigidity. The average across 16 countries reported in the Dickens et al. paper was 0.28. For Ireland, the figure we calculate using our administrative dataset lies at about 0.16-0.18 pre-crisis, which is low by international standards. At the onset of the crisis, the measure then drops to 0.10-0.13. This confirms that in terms of wage adjustments, Ireland's labour market is remarkably flexible by international standards.

As I mentioned earlier, I do have some slight misgivings in respect of the policy conclusions drawn by Conefrey et al. The paper ends by saying that the analysis highlights a need for an urgent policy response in order to reduce unemployment from its very high current rate, and suggests two related areas that should be emphasized: the retraining of unemployed workers – particularly those previously employed in Construction – and the strengthening of activation measures.

On the issue of the necessity of activation measures, I confess that I am sceptical. As far as I can see, there is nothing in the paper that implies this. Everything in the paper points to a problem of demand deficiency in the labour market as the cause of our current unemployment, whereas activation measures address a problem of labour supply. It is true that our activation system has been very weak in the past compared to other countries. However, it is not clear that even the best Active Labour Market Policies (ALMPs) in the world would have helped in the Irish labour market. My view of activation has been influenced by a 2010 paper by Forslund and Krueger that addresses the question of whether Active Labour Market Policies helped Sweden to rebound from the depression of the early 1990s. The authors conclude that although the Swedish programmes, which have long been perceived as among the strongest in the world, may have maintained high labour force attachment, ALMPs played a minimal role in reducing unemployment; unemployment was slow to fall and the ALMPs do not appear to have speeded reemployment or increased overall employment.

On the issue of retraining, my concern with this proposal, wherever it is made, is what occupation the training should be for. For retraining to be effective, there should be easily identified bottlenecks to train for. In the absence of obvious bottlenecks, we have to make predictions about future sectoral growth, and this is very challenging.

Note that I am not saying that I am against activation measures and training. Rather, I am saying that they will not address the fundamental problem in the labour market, which is demand deficiency. It remains the case that Ireland's unemployment problems are more to do with macroeconomics than labour economics.

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#### **SECOND VOTE OF THANKS PROPOSED BY TERRY CORCORAN, DEPARTMENT OF SOCIAL PROTECTION**

A meeting of the society last November dealt with the subject of the Irish statistical system overall and how it is developing. One point made at the meeting related to the major gap between the limited amount of information that is published in the standard Irish statistical releases and the massive amount of detail that is available in the underlying data. The QNHS was cited as a prime example of this. Tonight's paper is a welcome illustration of the wealth of information collected in the QNHS that is too rarely analysed or brought to the attention of a wider audience.

#### *The impact of the crisis*

The paper also shows that access to a common data set does not necessarily lead to common conclusions as to how the Irish labour market was impacted by (and responded to) the crisis, and what the lessons for policy might be.

The main outcomes of the crisis identified in the paper (in the version made available to me in advance of this evening's meeting) are essentially structural or supply-side –

- the large number of unemployed who are young males with low qualifications previously employed in the construction sector;
- the large number of unemployed people with no previous work experience;
- an emerging skills mismatch;
- the elevated level of long-term unemployment.

The lessons for policy follow from this analysis – essentially, steps (presumably beyond steps already taken) to target activation policies on young males with low education, with a focus on preparing them for work in “areas of the economy where demand is increasing and vacancies already exist”. The areas of the economy identified are the financial services and ICT sectors.

In some cases, it is not clear that the data actually support the characterisation of the post-crisis labour market.

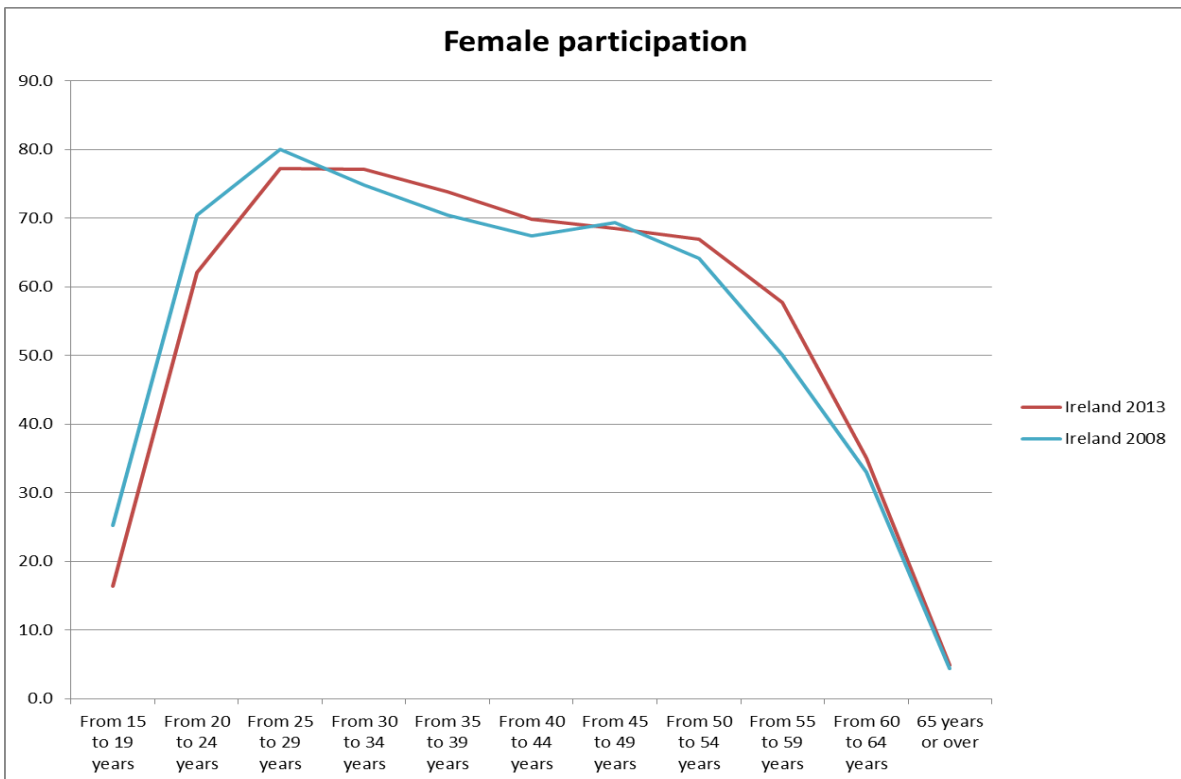
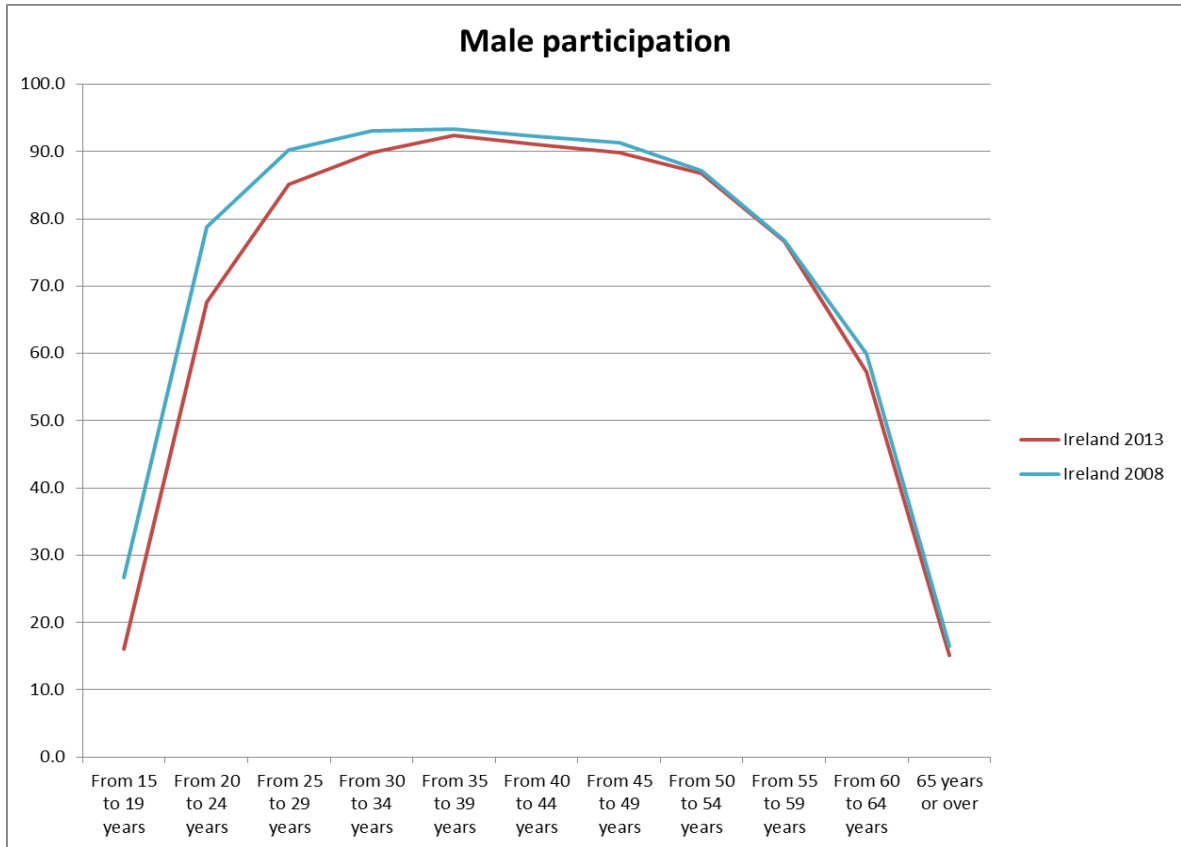
To take one example, the extent to which unemployment is characterised by young males who used to work in construction is much smaller than is commonly understood. The QNHS micro-data identify three sets of construction occupations – skilled or craft workers, semi-skilled operatives, and unskilled or elementary occupations. People aged under 25 formerly employed in these occupations currently make up one half of one per cent of all the unemployed; such persons aged under 30 years make up 3% of the unemployed. People of all ages, who previously worked in these occupations, account for about 14% of the unemployed, down from a peak of 27% in early 2009. In absolute terms, the number of such unemployed has fallen from a peak of 73,000 to a current level of 36,000.

Given that employment in these occupations fell by 170,000 (-66%) during the crisis, these figures reflect large-scale reallocation of workers, who lost their jobs in construction, into other occupations in Ireland, or into construction and other jobs outside the country. I give estimates for such reallocation for two cohorts of skilled construction workers – those aged 20-24 and 30-39, respectively, in 2007 – in the table below.

Age in 2007	20-24	30-39
Skilled construction labour force 2007	28,000	38,400
Of whom, estimated, 2014:-		
Employed in skilled construction occupations	25%	41%
Unemployed in skilled construction occupations	11%	15%
Total still in skilled construction labour force	36%	56%
Exited from Irish skilled construction labour force	64%	44%
Net migration (overall) for this age cohort 2007 to 2014	9%	near balance

Two thirds of those who were young skilled construction workers in 2007, and close to half of those who were then aged 30-39, have exited the sector and occupations concerned. The overall migration data for these cohorts would suggest that relatively little of this reallocation was through outmigration, and therefore most was through taking up jobs in other occupations within Ireland. (Net outmigration for construction workers was, however, likely to have been greater than for others in the same age-cohorts).

It is common to see the scale of the decline in employment among those aged under 25 as representing job loss. In fact, it is almost entirely a phenomenon of delayed entry to first employment. The vast bulk of the young who might now be in employment in Ireland but for the Great Recession are inactive (mainly) or have emigrated, rather than being unemployed. And, in turn, the vast bulk of those who are inactive have remained in education – some at least for much longer than they would have planned. It is this delayed entry that accounts for most of the rise in the numbers of unemployed without prior work experience. It also, incidentally, accounts for virtually the entire overall decline in labour force participation in recent years. There is little or no evidence of withdrawal from the labour market by older males, and female participation has gone on growing through the recession at all ages over 30 years.



A second area where I think the data do not support a widely held view is on the question of an emerging skills mismatch. The most remarkable thing about the vacancy rates quoted in the paper is how low they are across most sectors – generally below 1%, and averaging 0.7% in the recent past. The two rather higher rates referred to – at or approaching 2% for the finance and IT sectors – are unremarkable by international standards, and are not indicative of any particular difficulties in recruiting in either sector. To put these vacancy rates in perspective, in the US the overall vacancy rate is about 3.2%, the rate for finance is 4.3% and the rate for IT is 3.9%.

Further, it has to be noted that the total number of vacancies represented by a 2% vacancy rate in the IT sector is about 1,000. Even if all of the vacancies in this sector *were* difficult to fill this would not represent a major re-training opportunity in the context of an unemployment level of over 250,000.

Looking forward, the best guidance we have on which occupations are likely to present the bulk of job openings in the medium term comes from Solas’ projections, published earlier this year, which essentially examine the occupational employment implications of the most recent ESRI medium-term macroeconomic forecasts. Taking 2012 as the starting point, these projections see construction occupations adding 45,000 jobs by 2020. Professional and technical ICT occupations are expected to add about 20,000 jobs over the same period.

Even where there is a strong structural element to the outcome of the crisis, it is not necessarily correct to conclude that there must be supply-side explanations. The elevated level of long-term unemployment is a prime example. It seems clear that the scale and pattern of the employment shock is itself sufficient explanation for the evolution of the duration structure of unemployment between 2008 and 2012. The demand-led shock to employment in this crisis was on an unprecedented scale. Employment fell by 8% (173,000) in the single year from mid-2008 to mid-2009; the largest one-year decline ever seen before was a fall of about 2% (25,000) in 1985. Moreover, employment then went on declining, by a further 7%, before it bottomed out in mid-2012. It seems inevitable that in these circumstances the sharp run-up in short-term unemployment in 2009 would be followed by an increase in long-term unemployment over the following years – even in the context of the unprecedented supply adjustments that took place through the participation and migration channels.

More recently, the recovery in employment since mid-2012 has been matched one-for-one by a fall in unemployment of 68,000. Most of the fall in unemployment over the two years has in fact been in the long-duration category (53,000 of the overall drop of 68,000).

*Some policy developments*

The policy response to the employment crisis was inevitably constrained by the accompanying fiscal crisis. Nonetheless, substantial efforts were undertaken to provide re-training opportunities for unemployed workers, as shown in the table below.

Re-training, education and work experience provision -- commencements on programmes						
	FAS/Solas full-time courses for unemployed	FAS/Solas evening courses for unemployed	Back to Education allowance	Springboard/ ICT skills	Work experience/ internships	Total
2008	21,900	0	5,600	0	0	27,500
2009	32,800	19,300	12,700	0	200	65,000
2010	34,500	27,300	12,600	0	3,000	77,400
2011	27,800	24,400	11,900	4,200	5,700	74,000
2012	25,000	22,900	10,800	6,600	9,600	74,900
2013	29000#	18,400	9,000	6,100	11,300	73,800
# includes Momentum, specifically for long-term unemployed						

Across the range of programmes covered here, the number of opportunities provided for unemployed workers was increased from 27,500 in 2008 to a peak of over 77,000 in 2010, with the intake being maintained at close to this higher level in later years. Given the resource constraints, this was done initially through relatively low cost expansion of modular training and of part-time evening courses through FÁS, although there was also a

sharp increase in the number of unemployed people returning to longer-duration further and higher education under BTEA. Subsequently, there was significant additional provision of part-time higher education opportunities with a particular focus on IT qualifications, as well as the introduction and expansion of work experience provision through JobBridge, and provision specifically for the long-term unemployed through Momentum. It is inevitable that many of those taking up these opportunities were former construction workers relocating to other employments. More generally, the initial education and training system facilitated an increase in education participation for those aged 15-24 years from 50% in 2007 to 67% in 2013.

The second major strand of policy relates to activation – to encouragement of and support for active job search by the registered unemployed. The initial sharp rise in unemployment put great pressure on the available resources of the employment service and its capacity to engage with the unemployed. From early 2012, however, the *Pathways to Work* reforms have seen significant change, in part through internal reallocation of resources in the Department of Social Protection that saw 300 additional caseworkers deployed in late 2013. The initial focus of *Pathways* was on the development of more systematic engagement with new jobseekers, commencing soon after registration and continuing through the unemployment spell. More recent iterations of the policy are seeing increasing resources being devoted to the existing body of long-term unemployed people. This development will be intensified from early 2015 with the roll-out of JobPath, a contracted-out set of services specifically for the long-term unemployed.

#### *Lessons for policy?*

Overall, the evidence suggests the labour market (the working-age population and the institutions that impact on their working lives) responded extremely flexibly to the employment crisis. The pre-crisis bubble in Ireland was a macro-event. So too was the output and employment crash that ensued. The impact of the crash was unprecedented – not even the openness and flexibility of the Irish labour market could prevent a 15% fall in employment from translating into much higher and longer-duration unemployment. And, of course, the openness and flexibility that at least partly mitigated the impact of the shock themselves represent major disruption to the lives of the people involved. For older workers, they represent either emigration or large-scale movement into jobs other than those for which they had been trained, generally at lower wages than they had previously been earning, and at a time when such alternative jobs were scarce. For younger workers they meant either emigration or greatly delayed entry to the labour force and their first jobs (generally through remaining in education).

This suggests one over-riding lesson for policy. Macro-economic dislocation on this scale is devastating. There is relatively little even the most flexible of labour markets can do to dampen its effects; there were few concrete suggestions made during 2008-2012 for what more could have been done in terms of specific changes to the mix of labour market policies actually followed over this period. The lesson is, then, that policy should aim to minimise the chances of such macro-events occurring again, and do everything possible to curtail their duration where they do occur.

### **DISCUSSION**

**Gabriel Fagan:** I would like to congratulate the authors on their outstanding and comprehensive analysis of Irish labour market developments during the crisis. One of the striking facts documented in the paper is that net migration has been much lower than in the previous crises of the 1980s and 1990s. This is despite the fact that the shock to employment in the recent episode was arguably more dramatic. Could the authors throw some light on this differential pattern in net migration across these episodes?

**Frances Ruane:** I really enjoyed the paper and it is very valuable to get this ‘big picture’ of the labour market over the recession period. A lot of individual elements are well known, but taken together, there is a lot of added value here, especially in your detailed use of the QNHS data. I have two brief comments:

One addition I found very useful was the review of long-term unemployed and specifically the identification of the very long term unemployed, as being the percentage unemployed for longer than two years. Given the scale of the recent crisis, the more than one year cut off does not seem adequate to capture the distinction between different groups. Turning to the chart on this, it really struck me that in 1998 almost 40% of the total unemployed had been unemployed for more than two years, which was not something that I recall being highlighted at that time. This is interesting to compare with the peak of the present recession (48%) and to note that over the 2000s, this percentage dropped as the overall rate of unemployment declined.

While the authors have had to ration the number of charts they included, I found myself wondering about differences in the transition rates from unemployment to employment and vice versa for women versus men and across regions. Would it be worth adding a comment in the text if these are very different? Thank you again for the paper.

**John FitzGerald:** This paper makes a very significant contribution to understanding the current state of the Irish labour market. A major question for policy today is to what extent there is likely to be hysteresis in the labour market. This was a major concern towards the end of the last crisis in the late 1980s and the early 1990s and it was discussed in a paper by Lee.<sup>1</sup> As it turned out, it took many years for the very high rate of unemployment in the early 1990s to be eliminated. The concern today is that it could take many years of reasonable growth to effect a return to full employment. This concern underlies the approach used by the EU to estimating potential output in Ireland. If the concerns about hysteresis prove wrong then the potential growth rate of the economy over the next few years will be higher than the EU methodology suggests.

The data discussed in the paper indicates a relatively high level of educational attainment among those who are unemployed. It would be useful to contrast the situation today with that in the early 1990s. Then the bulk of the unemployed had not completed the leaving cert whereas today the bulk of those unemployed have at least a leaving cert. This must make the probability of today's unemployed finding work in a recovery significantly higher than in the 1990s.

One issue for policy-makers is whether they want to implement instruments to try and ensure that when new hiring takes place that the long-term unemployed are favoured. This possible approach to policy was considered in a recent Department of Finance Working Paper.<sup>2</sup>

The paper and the respondents in their comments highlight the extent to which the Irish labour market is already flexible. This is likely to facilitate a return to full employment over the rest of the decade if the economy returns to reasonable growth.

The paper makes an important contribution by highlighting the extent of "discouraged workers" as reflected in the fall in participation. However, a significant part of the reduction in male labour force participation has been due to younger men remaining in the educational system for longer. This will potentially enhance their life-time earnings and potential productivity with longer-term benefits for the economy.

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<sup>1</sup> Lee, George. 'Barrington Lecture 1989/1990: Hysteresis and the natural rate of unemployment in Ireland'. - Dublin: *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. XXVI, Pt. II, 1989/1990, pp31-68

<sup>2</sup> IGEES, 2014. "Quantification of the Economic Impacts of Selected Structural Reforms in Ireland", Working Paper July 2014, Department of Finance.