

Kelly, Elish; Barrett, Alan

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Recent Developments in the Irish Labour Market: Is It All Good News?

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DISCUSSION PAPER SERIES

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Elish Kelly

Economic and Social Research Institute

Alan Barrett

*Economic and Social Research Institute
and IZA*

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ABSTRACT

Recent Developments in the Irish Labour Market: Is It All Good News?*

Across many countries, the rise of atypical work has been noted whereby employees are increasingly in less secure contractual situations. While this might lead to more flexible labour markets, there are potential downsides for individuals. We explore the prevalence of atypical work in Ireland which provides a fascinating case-study. Ireland experienced a dramatic deterioration in its labour market around the Great Recession with unemployment rising from 4.8 percent in 2007 to 15 percent in 2012. This situation was also reversed somewhat quickly with unemployment falling to 8 percent by 2016. Such dramatic swings provide the context in which we explore whether atypical work increased for new job holders with the onset of recession and whether or not this weakened as the economy recovered. We find that atypical work did increase with the recession and, although moderating, the likelihood of new jobs being atypical persisted into the recovery. This raises important questions about whether economic recovery alone will improve job quality, in addition to jobs numbers.

JEL Classification: J41, J48

Keywords: atypical work, temporary contracts, part-time, recession

Corresponding author:

Elish Kelly
Economic and Social Research Institute
Whitaker Square
Sir John Rogerson's Quay
Dublin 2
Ireland
E-mail: Elish.Kelly@esri.ie

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Section 1: Introduction

The OECD (2014) argues that a country's labour market performance should be assessed not only in terms of the number of job opportunities but also the quality of such jobs. They have found that temporary work is strongly associated with poor job quality, specifically in terms of lower earnings, higher levels of labour market insecurity and higher job strain. Similar results were found for part-time work: the one exception was job strain, which was found to be lower for individuals on part-time contracts (OECD, 2014).

Eichhorst and Tobsch (2014) offer a different perspective on atypical employment arrangements. Specifically, they argue that the growth in non-standard forms of employment in Germany have contributed to job growth, along with assisting Germany to withstand the Great Recession as unemployment did not increase over the period and the number of jobs did not decline either. Eichhorst and Tobsch (2014) conclude that the growth of atypical forms of employment in Germany is complementing the standard employment segment of the German labour market and that job quality, in terms of pay, employment stability, and job security, is not declining, in general, as a result of the growth in non-standard forms of employment.

In a more recent piece of work, the OECD (2015) indicate that 'traditional' permanent, full-time work is increasingly being replaced with non-traditional working arrangements, such as part-time and temporary work and self-employment: between the 1990s and the end of the Great Recession about 60 percent of jobs created in OECD countries were non-traditional. The OECD argue that such working arrangements can create job opportunities for some people who would otherwise be out of work, and that the growth in non-standard employment also reflect the needs of some workers as well as the shift away from manufacturing dominated economic growth to services and knowledge work. Nevertheless, the OECD also highlights certain issues with the increase in atypical employment arrangements; specifically, that these working arrangements may be contributing to inequality and poverty, particularly among low-educated workers, females and young people. Given this, the OECD argue that policy-makers need to ensure that part-time and temporary work are stepping-stones to better employment and not an end in themselves.

The OECD also state that countries can assist in dealing with the poverty issue associated with non-standard forms of employment by setting appropriate minimum wage levels that ensure that atypical workers receive a living wage.

In this paper, we examine trends in atypical work in the case of Ireland focussing specifically on individuals who report being in new jobs. Ireland offers an interesting setting in which to explore atypical work because of the dramatic swings in its labour market over the last decade. Below, we provide some details of these labour market swings but for now we will note that unemployment rose from 4.8 percent in 2007 to 15 percent in 2012 and then fell again reaching 8 percent in 2016. Analysing trends against the backdrop of such dynamics in the labour market allows us to explore two specific issues. First, did atypical work become more prevalent in the economic downturn? Second, did atypical work become less prevalent in the upturn or did any pattern that emerged during the recession persist into the recovery? These are important questions because they provide a sense of whether trends in atypical work might be imbedded in labour markets. Whether this is a good or a bad thing is a separate issue.

The remainder of the paper is structure as follows. In Section 2, we provide an overview of changes in the Irish labour market over the period 2004 to 2016 with the aim of providing the context to the paper. In Section 3, we describe the data. In Section 4, we present the results of our analysis where we examine how the incidence of atypical work has evolved between 2004 and 2016 in Ireland. As indicators of atypical work, we use part-time (as opposed to full-time) jobs and temporary (as opposed to permanent) contracts. We also look more briefly at union status and self-employment. We discuss the results in Section 5.

Section 2: Ireland's Labour Market 2002 to 2016

The severe impact that the Great Recession had on Ireland's labour market has been well documented. In particular, the collapse in economic activity that took place between 2008 and 2011 resulted in Ireland's unemployment rate increasing from 4.6 percent in 2004 to 15 percent in 2012, while the employment rate declined from 65.9 percent to 58.8 percent over the same time period (see Table 1).

Research on the impact of the recession on Ireland's labour market shows that young people in particular were severely affected (e.g., Kelly *et al.*, 2014; Kelly and McGuinness, 2014), along with immigrants (e.g., Barrett and Kelly, 2012; McGinnity *et al.*, 2014) and males (McGinnity *et al.*, 2014). The collapse in the property sector in Ireland, which was one of the main factors that underlay its economic demise, contributed to some of these observed results; particularly for males as, relative to females, their employment was over concentrated in the construction sector prior to the recession (see McGinnity *et al.*, 2014).

The Irish economy turned the corner on the economic crisis in 2012 with Gross National Product (GNP) growing by 1.6 percent (Duffy *et al.*, 2015). The labour market also started to improve towards the end of that year with the unemployment rate falling to 13.8 percent and the numbers in employment starting to grow again for the first time since the start of 2008 (see Figure 1). Unemployment has continued to fall since this time period - the rate stood at 8 percent in quarter 3 2016, while employment has continued to increase. The rate was 65.4 percent in quarter 3 2016, which is the highest that the country's employment rate has been since the end of 2008.¹

A lot of attention has been given to the improvement in the labour market, particularly in terms of the growth in the numbers employed being a *green shoots* indicator of economic recovery. Since employment started to grow in quarter 4 2012, there are an additional 182,400 individuals in employment: as of quarter 3 2016, there was a total of 2,027,100 people in employment, which is an increase of 9.9 percent between then and quarter 4 2012. While on the surface, this is a good news story, less is known about the quality of the jobs that are being created since the recovery. Has there been a growth in atypical employment arrangements, specifically in terms of the proportion of part-time work, temporary employment contracts and self-employment?

Section 3: Data

The analysis presented in this paper is based on individual-level data from Ireland's Quarterly National Household Survey (QNHS), 1998 to 2015. The QNHS is Ireland's official labour force survey and is compiled by the Central Statistics Office. Although the QNHS is

¹ <http://www.cso.ie/en/qnhs/releasesandpublications/qnhspostcensusofpopulation2011/>

collected four times a year, we take the data for Q2 only in each year 1998 to 2015. We restrict the sample to individuals who started their current job within eighteen months of their interview. In this way, our analysis is focussed on “new jobs”. We should note that the people in our sample could be labour market entrants, people moving from unemployment to employment or people moving between jobs. We also impose an age restriction of 15 to 64. We pool the data across eighteen years 1998 to 2015 and this results in a sample of over 60,000. Applying weights provided by the CSO allows us to present distributions which reflect the population of new job holders.

Section 4: Results

We will begin this presentation of the results by looking at the professional status of those who obtained a new job over time. We are particularly interested in comparing across the economic cycle. Referring back to the discussion above, we take the years 2010 to 2012 as capturing the deepest part of the recession with 2014 and 2015 capturing the recovery. We can see from this table that there was an increase in the number of self-employed people during the recession years (to between 8 and 9 percent), but this has fallen since the recovery to levels observed in the early noughties. Thus, most people who obtained a new job in the recovery period were hired as employees (92.6 percent).

We turn now to our first key variables of interest and ask (a) what proportion of individuals with new jobs had full-time and part-time jobs and (b) how has this proportion changed over the economic cycle. Looking at Figure 2 we can see a clear pattern. Between 1998 and 2008, there was a remarkable stability in the split between part-time and full-time. Of employees² who obtained a new job in the 1998 to 2008 period, about 75 percent were full-time and 25 percent were part-time. However, as labour market conditions deteriorated around 2008, the proportion getting full-time jobs fell to about 65 percent in 2010. There is some move back to the earlier proportion after 2012 but the trajectory does not suggest a full move back to the pre-2008 proportion.

In Figure 3, we look at our second key variable which is temporary versus permanent contract. For the period 1998 to 2008, there is a remarkable similarity between Figures 2

² Public sector job creation scheme employees excluded.

and 3 in that the proportions of permanent and temporary are stable, just as they were for full-time and part-time. There is also a similarity in that there is a shift observed between 2008 and 2010 when the effect of the recession is evident and the proportion of new jobs which are temporary rise from 20.9 percent in 2008 to 34.8 percent in 2010. In Figure 3, when compared to Figure 2, we see evidence of a stronger reversal towards the earlier proportion. By 2015, the proportion of new jobs that are temporary has fallen to 26.6 percent.

Before moving on to consider the trends in part-time and temporary work in a more formal econometric setting, we can look at trends in hours worked and union membership for new job holders over the period in question. In Figure 4, the patterns with respect to hours worked is shown. The figures shows a dip in hours worked in new jobs in the period 2008 and 2010 and then an increase after 2010. These are consistent with the recession and recovery but there was also a fall-off in hours in the period 1998 to 2006, and between 2014 and 2015. These are less readily explained with reference to the economic cycle. For union membership, we only have data from 2006 onwards but an interesting pattern emerges. There seems to have been a drop in the proportion of new jobs that are union jobs from 2008 to 2014. This stabilised into 2015 but clearly we cannot make any conclusion about the sustainability of this.

Figures 2 and 3 have revealed a certain amount about the patterns in atypical work in Ireland between 1998 and 2015 but we now want to explore the issue in a more formal way. For each individual in our data, we know whether their job is (a) full-time or part-time and (b) temporary or permanent. In our first set of regressions, we focus on the full-time/part-time dimension and create a dichotomous dependent variable which takes a value one if the person is employed part-time and zero otherwise (which is full-time). We initially run a regression (a probit) in which only time dummies are included with these dummies capturing the recession period 2010-2012 and the recovery period 2014-2015. The pre-crisis period 1998 to 2008 is taken as the reference period.

The results from this regression are shown in Table 3 (Column 1). As can be seen, the positive and significant coefficient for the time-period dummy variable 2010-2012 provides

evidence that part-time employment contracts became more prevalent during the recession. This is perhaps unsurprising and the more interesting question is whether this higher prevalence persisted into the recovery phase. The coefficient for the 2014-2015 dummy variable is also positive and significant so this greater prevalence of part-time contract for new job entrants did indeed persist into the recovery. The coefficient has fallen between 2010-2012 and 2014-2015 and the difference is statistically significant. Hence, the trend towards more part-time new jobs seems to have weakened in the recovery phase, but as of 2014-2015 the labour market had not returned to pre-crisis levels along this dimension.

In Table 3 (Column 2), we also present the results of a second regression in which we control for a wide range of factors in addition to the time-period dummy variables. We do this because it is possible that the estimated effects just discussed could have been the result of composition effects as opposed to true time period effects. The scale of collapse in the Irish labour market was such that new job holders in the post crisis phase may have differed from earlier new job holders, partly in terms of their individual characteristics but also in terms of the sectors in which they worked. By controlling for a wide range of factors, we can reduce this potential problem.

The coefficients on the time period dummy variables increase when all the additional controls are added. Once again, we see a stronger effect in the 2010-2012 period compared to 2014-2015, but the finding of the persistence in the higher prevalence of part-time jobs even in the recovery phase remains. The other coefficients in the regression are generally as expected. For example, men are less likely to be in part-time jobs as are more highly educated people.

We next look at the question of temporary and permanent contracts and we follow the approach just described for part-time and full-time. We begin by running a probit regression in which the dependant variable is equal to one if the individual has a temporary contract and is zero otherwise (permanent). The results from this work are presented in Table 4. In the first regression we just include the time period dummy variables (Column 1) and we then go on to include a wide set of additional controls (Column 2) to try to account for any

compositional effects.

As was the case when we compared Figures 2 and 3, there are striking similarities between the results shown in Tables 3 and 4. As was the case in Table 3, we again find in Table 4 that the prevalence of atypical work (this time as indicated by a temporary contract) increased in the recession. And although the size of the effect is smaller in the recovery phase, and statistically significantly so, the positive and significant coefficient for the time period dummy variable 2014-2015 suggests that the greater likelihood of a new job being temporary persisted into the recovery. When we include the additional controls, the size of the estimated time period effects increase, again mirroring Table 3.

Our findings with respect to part-time and temporary contracts prompted us to look more deeply at these patterns so we ran an additional series of regressions which capture some further issues. We first looked at the group whose new jobs had both of the atypical work characteristics explored above – temporary and part-time. In our next probit regression we gave a value of one to this group and a value of zero to all others. Hence, our “zero” group now includes all people with permanent contracts (whether full-time or part-time) and all with full-time work (whether temporary or permanent). In this way we are focussing on the most disadvantaged group.

The results are reported in Table 5 where we again include only the time period dummy variables initially (Column 1), but then include a broader set of controls (Column 2). Once again, the patterns found in Tables 3 and 4 are repeated. The prevalence of this two-dimensional atypical work increased with the recession and persisted into the recovery, albeit at a more modest level.

Our next avenue was to look within the part-time group and to distinguish between those who are involuntarily part-time and voluntarily so. Those working part-time on an involuntary basis were identified in the QNHS from a question that asked people their reasons for working part-time. We classified those who indicated that they “could not find a full-time job” to be involuntary part-time employed. There was a change made to the variable that captures the reasons for working part-time in Q1 2006; thus, the 1998-2005

data are not comparable with the data from 2006 onwards. Given this, our analysis of involuntary part-time employment is restricted to the 2008 to 2015 time period.

We present our results on involuntary part-time employment in Table 6. The reference group is now full-time employees. Yet again, the earlier pattern emerges – an increase in the probability of a new job being involuntarily part-time with the recession and this persisting into the recovery. We should note that we also looked specifically at involuntary part-time people with temporary contracts and the earlier patterns were also present.

Before concluding, we can report on two further sets of regressions which provide further insights into the nature of new jobs in the recession and the recovery. We looked at whether new jobs were more likely to be self-employed and followed our earlier approach of running regressions initially with just time-period dummies and then with additional controls. The results are shown in Table 7 and some differences with the earlier results are found. While we see an increase in the likelihood of new jobs being self-employed in the recession, this is not the case in the recovery. In fact, once the extra controls are added we see a lower likelihood of self-employment, compared to the pre-crisis period, in the recovery phase.

Finally, in Table 8 we look at trade union membership and an interesting picture emerges. In all the earlier regressions, we found a pattern of effects emerging in the recession and these effects easing in the recovery. In Table 8, we see the effects intensifying in the recovery, with the likelihood of new job being union jobs falling further as we move from recession to recovery.

Section 5: Discussion

The analysis presented above has generally found the following. Taking part-time work and temporary contracts as indicators of atypical work, Ireland experienced an increase in atypical work among the holders of new jobs in the recession. In the recovery of 2014-2015, there has been a lessening in this trend. However, the likelihood of being in atypical work among new job holders in 2014-2015 remained above the pre-crisis level.

A number of issues arise. First, it could be argued that any jobs were better than no jobs as Ireland was in recession and so the increase in atypical jobs may have been a “price worth paying” to see employment rising again. What is more, the labour market worked in such a way that it was possible to generate atypical jobs and this may be a positive reflection on the institutions and mechanisms at work in Ireland. A strong form of this line of thinking would say that Ireland may only have created jobs at the pace that was observed precisely because many were temporary and/or part-time. This would be in line with Eichhorst and Tobsch (2014).

The second issue concerns the apparent persistence of the increased likelihood of atypical work in the recovery. Before drawing any strong conclusions, we should note that the timeframe we are using is short and so we certainly cannot conclude that Ireland is in a new phase where atypical work is more likely. Nevertheless, the results raise the possibility that economic recovery will not, of itself, lead to more full-time and permanent jobs. Hence, it will be necessary to monitor this trend and to be ready to act if atypical work is viewed as a problem. It may not be the case that policy would aim to restrict atypical work but instead would try to equip individuals so that they were not negatively affected by it – for example by increasing their education levels. Whatever the solution, the fact remains that countries’ labour markets should be measured not only in terms of the number of jobs they create but also by the quality of those jobs.

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Table 1 Irish Labour Force Statistics: 2004 – 2015

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Unemployment rate %¹ | 4.6 | 4.8 | 4.7 | 4.8 | 5.8 | 12.3 | 13.9 | 14.6 | 15.0 | 13.9 | 11.9 | 9.8 | 8.6 |
| Participation rate % | 60.5 | 62.1 | 63.2 | 64.1 | 63.7 | 62.5 | 61.1 | 60.5 | 60.1 | 60.5 | 60.0 | 60.2 | 60.6 |
| Employment rate %² | 65.9 | 67.5 | 68.5 | 69.1 | 67.9 | 62.2 | 60.0 | 59.2 | 58.8 | 60.2 | 61.3 | 63.1 | 64.7 |

Source: *Quarterly National Household Survey Q2*, Central Statistics Office

Note: ¹ Based on person's aged 15-74; ² Based on person's aged 15-64

Table 2: New Job Entrants' Professional Status (Percent)

| | 1998 | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 | 2015 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Professional Status: | | | | | | | | | | |
| Self-Employed | 7.3 | 6.8 | 6.6 | 7.1 | 5.3 | 6.2 | 9.0 | 8.0 | 6.7 | 6.9 |
| Employee | 91.9 | 92.6 | 92.7 | 92.3 | 94.3 | 93.1 | 90.0 | 91.4 | 92.6 | 92.6 |
| Assisting Relations | 0.8 | 0.6 | 0.8 | 0.5 | 0.4 | 0.7 | 1.0 | 0.6 | 0.7 | 0.6 |
| Total ('000) ¹ : | 380.6 | 464.1 | 423.2 | 377.5 | 474.0 | 517.7 | 283.0 | 318.9 | 360.2 | 385.2 |

Source: Derived using *Quarterly National Household Survey Q2* microdata

Note: ¹ Analysis based on all individuals aged 15-64 who obtained a job in the previous 18 months

Table 3 Probit Model of Part-time Employment for New Job Entrants¹

| | Year Only Specification | Full Control Specification |
|---|----------------------------|-------------------------------|
| Year (Ref: 1998-2008)^{2,3} | | |
| 2010-2012 | 0.118*** (0.007) | 0.163*** (0.008) |
| 2014-2015 | 0.089*** (0.006) | 0.141*** (0.007) |
| Gender (Ref: Female) | | |
| Male | | -0.174*** (0.005) |
| Age (Ref: 55-64) | | |
| Age 15-19 | | 0.006 (0.015) |
| Age 20-24 | | -0.147*** (0.011) |
| Age 25-34 | | -0.194*** (0.011) |
| Age 35-44 | | -0.136*** (0.009) |
| Age 45-54 | | -0.100*** (0.010) |
| Marital Status (Ref: Married) | | |
| Single | | -0.044*** (0.008) |
| Widowed | | 0.010 (0.026) |
| Divorced | | 0.009 (0.013) |
| Family Type (Ref: Couple, no children) | | |
| Couple, Children | | 0.118*** (0.008) |
| Lone Parent | | 0.173*** (0.012) |
| Not in Family Unit, Lives Alone | | 0.047*** (0.015) |
| Not in Family Unit, Lives with Others | | 0.032*** (0.011) |
| Education (Ref: Low) | | |
| Medium | | -0.075*** (0.005) |
| High | | -0.179*** (0.006) |

Table 3 **Continued**

| | Year Only Specification | Full Control Specification |
|--|------------------------------------|---------------------------------------|
| Location (Ref: Dublin) | | |
| Border | | 0.015* (0.008) |
| Midlands | | -0.014 (0.010) |
| West | | -0.010 (0.008) |
| Mid-East | | -0.021*** (0.007) |
| Mid-West | | -0.009 (0.008) |
| South-East | | 0.014* (0.008) |
| South-West | | 0.006 (0.007) |
| Nationality (Ref: Irish) | | |
| UK | | -0.020 (0.014) |
| EU-15 | | -0.054*** (0.015) |
| Rest of Europe | | -0.035*** (0.010) |
| USA | | 0.047 (0.045) |
| Australia | | -0.108*** (0.030) |
| Rest of World | | 0.170*** (0.018) |
| Sector (Ref: Industry) | | |
| Agriculture, Forestry and Fishing | | 0.175*** (0.024) |
| Construction | | 0.008 (0.012) |
| Wholesale and Retail | | 0.348*** (0.010) |
| Transportation and Storage | | 0.127*** (0.017) |
| Accommodation and Food Storage | | 0.424*** (0.011) |
| Information and Communication | | 0.071*** (0.016) |
| Financial, Insurance and Real Estate | | -0.011 (0.013) |
| Professional, Scientific and Technical | | 0.075*** (0.015) |

Table 3 **Continued**

| | Year Only Specification | Full Control Specification |
|-------------------------------------|----------------------------|-------------------------------|
| Sector (Ref: Industry) | | |
| Administrative and Support Services | | 0.253*** (0.016) |
| Public Administration and Defence | | 0.072*** (0.019) |
| Education | | 0.362*** (0.015) |
| Health and Social Work | | 0.255*** (0.013) |
| Creative, Arts and Entertainment | | 0.389*** (0.018) |
| Other Services | | 0.327*** (0.018) |
| Unknown | | 0.128*** (0.049) |
| Observations | 61,764 | 52,469 |
| Pseudo R-squared | 0.00938 | 0.234 |

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

¹The comparison group is new job entrants that obtained full-time employment.

² 1998 is excluded from the sector specification because there is no education data in the QNHS micro datafile for 1998; thus, 2000-2008 is the reference year for this specification.

³ We tested to see if the year effects were statistically different from each other. They were in each specification (at the 1% level in the year only specification and at the 5% level in the sector specification).

Table 4 Probit Model of Temporary Employment Contracts for New Jobs Entrants¹

| | Year Only Specification | Full Control Specification |
|---|------------------------------------|---------------------------------------|
| Year (Ref: 1998-2008)^{2,3} | | |
| 2010-2012 | 0.123*** (0.007) | 0.152*** (0.007) |
| 2014-2015 | 0.055*** (0.006) | 0.091*** (0.007) |
| Gender (Ref: Female) | | |
| Male | | -0.014*** (0.005) |
| Age (Ref: 55-64) | | |
| Age 15-19 | | 0.121*** (0.017) |
| Age 20-24 | | -0.033** (0.013) |
| Age 25-34 | | -0.115*** (0.012) |
| Age 35-44 | | -0.098*** (0.010) |
| Age 45-54 | | -0.071*** (0.011) |
| Marital Status (Ref: Married) | | |
| Single | | 0.060*** (0.007) |
| Widowed | | 0.031 (0.030) |
| Divorced | | 0.014 (0.014) |
| Family Type (Ref: Couple, no children) | | |
| Couple, Children | | 0.050*** (0.007) |
| Lone Parent | | 0.030*** (0.010) |
| Not in Family Unit, Lives Alone | | 0.045*** (0.013) |
| Not in Family Unit, Lives with Others | | 0.039*** (0.009) |
| Education (Ref: Low) | | |
| Medium | | -0.018*** (0.006) |
| High | | -0.029*** (0.007) |

Table 4 **Continued**

| | Year Only Specification | Full Control Specification |
|---|------------------------------------|---------------------------------------|
| Location (Ref: Dublin) | | |
| Border | | 0.012 (0.008) |
| Midlands | | -0.018* (0.010) |
| West | | 0.082*** (0.009) |
| Mid-East | | 0.019** (0.008) |
| Mid-West | | 0.083*** (0.009) |
| South-East | | 0.010 (0.008) |
| South-West | | 0.069*** (0.007) |
| Nationality (Ref: Irish) | | |
| UK | | -0.034** (0.013) |
| EU-15 | | 0.074*** (0.015) |
| Rest of Europe | | -0.000 (0.010) |
| USA | | 0.068* (0.040) |
| Australia | | 0.169*** (0.043) |
| Rest of World | | 0.102*** (0.016) |
| Sector (Ref: Industry) | | |
| Agriculture, Forestry and Fishing | | 0.101*** (0.021) |
| Construction | | -0.002 (0.009) |
| Wholesale and Retail | | 0.009 (0.008) |
| Transportation and Storage | | 0.015 (0.013) |
| Accommodation and Food Storage | | 0.067*** (0.009) |
| Information and Communication | | -0.010 (0.012) |
| Financial, Insurance and Real Estate | | -0.006 (0.012) |
| Professional, Scientific and Technical | | 0.024** (0.012) |

Table 4 **Continued**

| | Year Only Specification | Full Control Specification |
|-------------------------------------|------------------------------------|---------------------------------------|
| Sector (Ref: Industry) | | |
| Administrative and Support Services | | 0.016 (0.013) |
| Public Administration and Defence | | 0.159*** (0.018) |
| Education | | 0.327*** (0.013) |
| Health and Social Work | | 0.091*** (0.011) |
| Creative, Arts and Entertainment | | 0.143*** (0.017) |
| Other Services | | 0.077*** (0.015) |
| Unknown | | 0.144*** (0.040) |
| Observations | 61,561 | 52,266 |
| Pseudo R-squared | 0.00879 | 0.0783 |

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

¹The comparison group is new job entrants that obtained permanent employment contracts.

²1998 is excluded from the sector specification because there is no education data in the QNHS micro datafile for 1998; thus, 2000-2008 is the reference year for this specification.

³We tested to see if the year effects were statistically different from each other and they were in each of the estimated specifications (at the 1% level of significance).

Table 5 Probit Model of Part-Time Temporary Employment Contracts for New Job Entrants¹

| | Year Only Specification | Full Control Specification |
|--|-------------------------|----------------------------|
| Year (Ref: 1998-2008)^{2,3} | | |
| 2010-2012 | 0.083*** (0.005) | 0.099*** (0.006) |
| 2014-2015 | 0.050*** (0.005) | 0.074*** (0.005) |
| Observations | 61,764 | 52,469 |
| Pseudo R-squared | 0.0114 | 0.166 |

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

¹The comparison group is new job entrants that obtained either full-time permanent or temporary employment, or part-time permanent employment.

²1998 is excluded from the sector specification because there is no education data in the QNHS micro datafile for 1998; thus, 2000-2008 is the reference year for this specification.

³We tested to see if the year effects were statistically different from each other and they were in each of the estimated specifications (at the 1% level of significance).

Table 6 Probit Model of Involuntary Part-time Employment for New Job Entrants¹

| | Year Only Specification | Full Control Specification |
|---------------------------------------|-------------------------|----------------------------|
| Year (Ref: 2008)^{2,3} | | |
| 2010-2012 | 0.207*** (0.010) | 0.200*** (0.010) |
| 2014-2015 | 0.177*** (0.009) | 0.171*** (0.009) |
| Observations | 15,476 | 15,476 |
| Pseudo R-squared | 0.0437 | 0.187 |

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

¹The comparison group is new job entrants that obtained full-time employment.

²There was a change in the variable used to capture the reasons for working part-time in Q1 2006; thus, the 1998-2005 data are not comparable with the date from 2006 onwards. Given this, the reference year is 2008, which captures people who got new jobs between Q4 2006 and Q2 2008. This is also the reason for the smaller sample in this analysis.

³We tested to see if the year effects were statistically different from each other and they were in each of the estimated specifications (at the 5% level of significance).

Table 7 Probit Model of Self-Employment for New Job Entrants¹

| | Year Only Specification | Full Control Specification |
|--|----------------------------|-------------------------------|
| Year (Ref: 1998-2008)^{2,3} | | |
| 2010-2012 | 0.020*** (0.004) | 0.005** (0.002) |
| 2014-2015 | 0.004 (0.003) | -0.007*** (0.002) |
| Observations | 66,693 | 56,595 |
| Pseudo R-squared | 0.00134 | 0.168 |

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

¹The comparison group is employees.

²1998 is excluded from the sector specification because there is no education data in the QNHS micro datafile for 1998; thus, 2000-2008 is the reference year for this specification.

³We tested to see if the year effects were statistically different from each other and they were in each of the estimated specifications (at the 1% level of significance).

Table 8 Probit Model of TU Membership for New Job Entrants

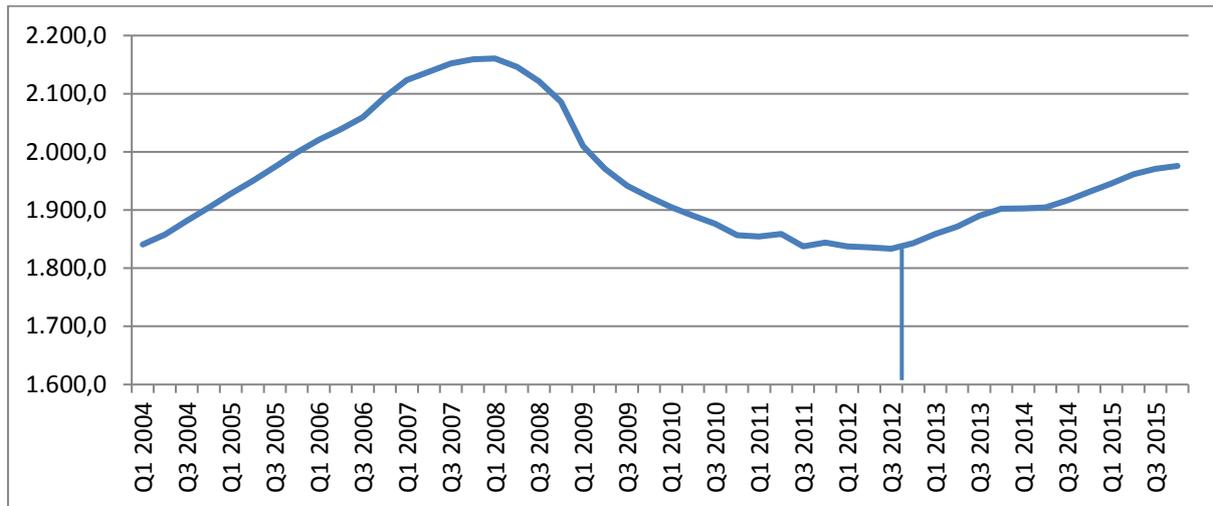
| | Year Only Specification | Full Control Specification |
|--|----------------------------|-------------------------------|
| Year (Ref: 2006-2008)^{1,2} | | |
| 2010-2012 | -0.016*** (0.004) | -0.023*** (0.004) |
| 2014-2015 | -0.042*** (0.004) | -0.045*** (0.003) |
| Observations | 26,405 | 26,405 |
| Pseudo R-squared | 0.00612 | 0.117 |

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

¹ 2006-2008 is the reference year in this specification because TU membership information is not available for individuals that entered a new job prior to Q2 2003.

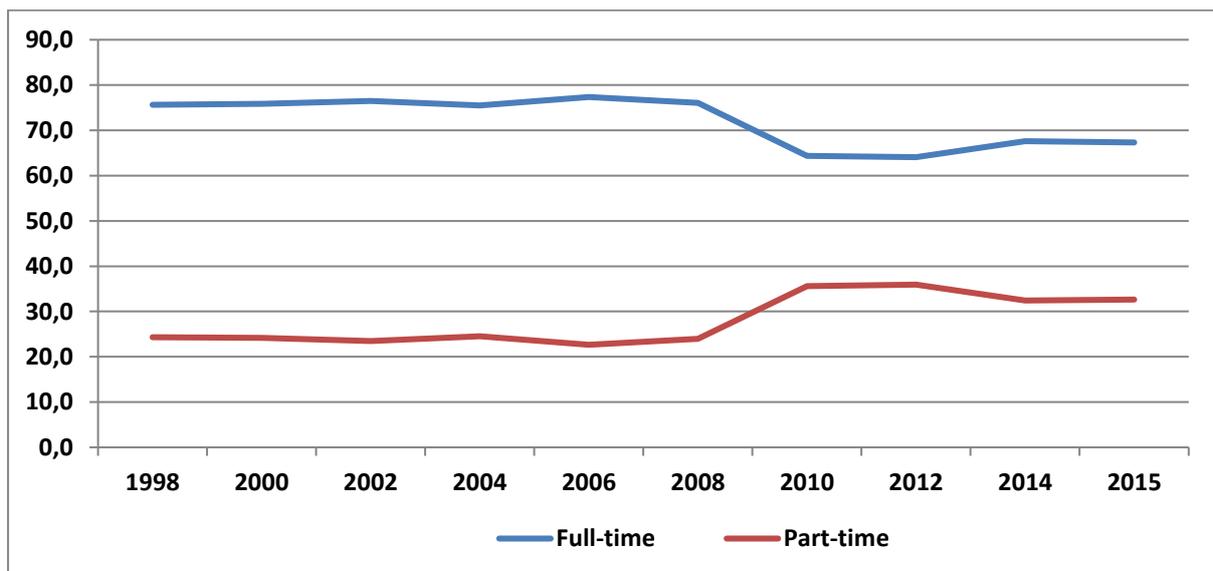
² We tested to see if the year effects were statistically different from each other in each specification, and they are (at the 1% level of significance).

Figure 1 Numbers in Employment: 2004 - 2015



Source: Derived using Quarterly National Household Survey data

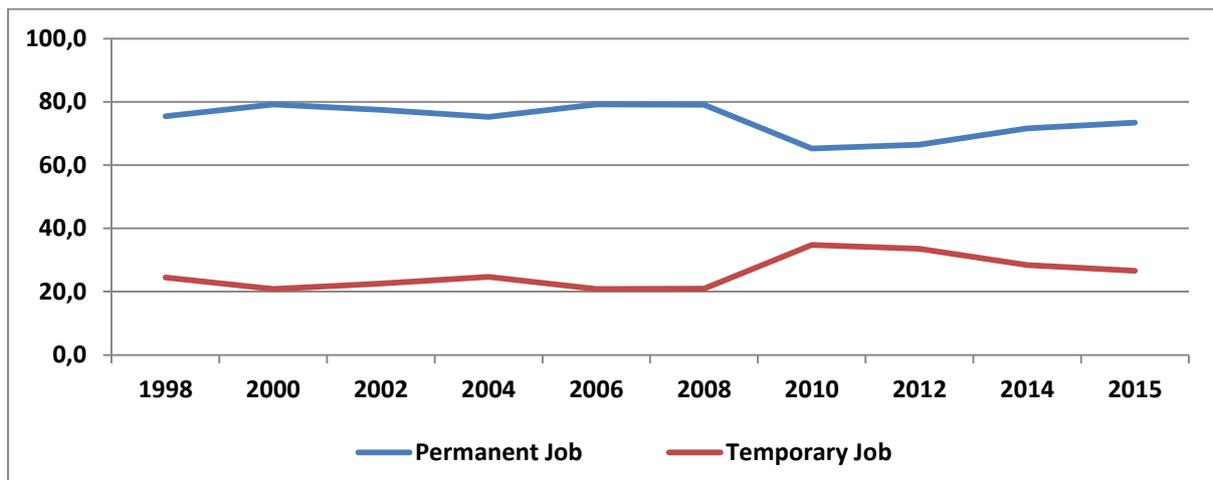
Figure 2 Full-Time / Part-Time Job Trends among New Employees: 1998 – 2015¹



Source: Derived using Quarterly National Household Survey Q2 microdata

Note: ¹ Analysis based on individuals aged 15-64 who obtained a job in the previous 18 months

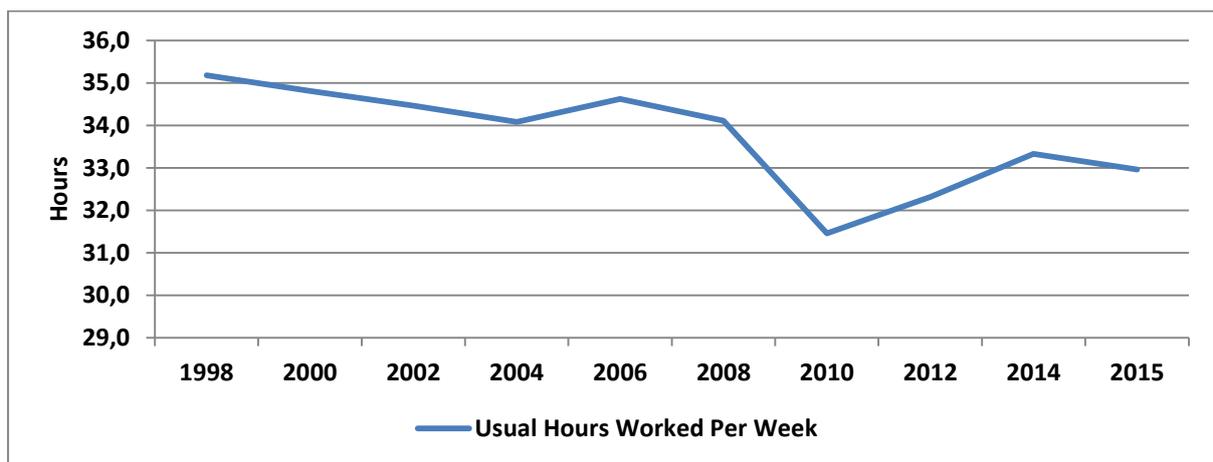
Figure 3 Permanent / Temporary Contracts among New Employees: 1998 – 2015¹



Source: Derived using *Quarterly National Household Survey Q2* microdata

Note: ¹ Analysis based on individuals aged 15-64 who obtained a job in the previous 18 months

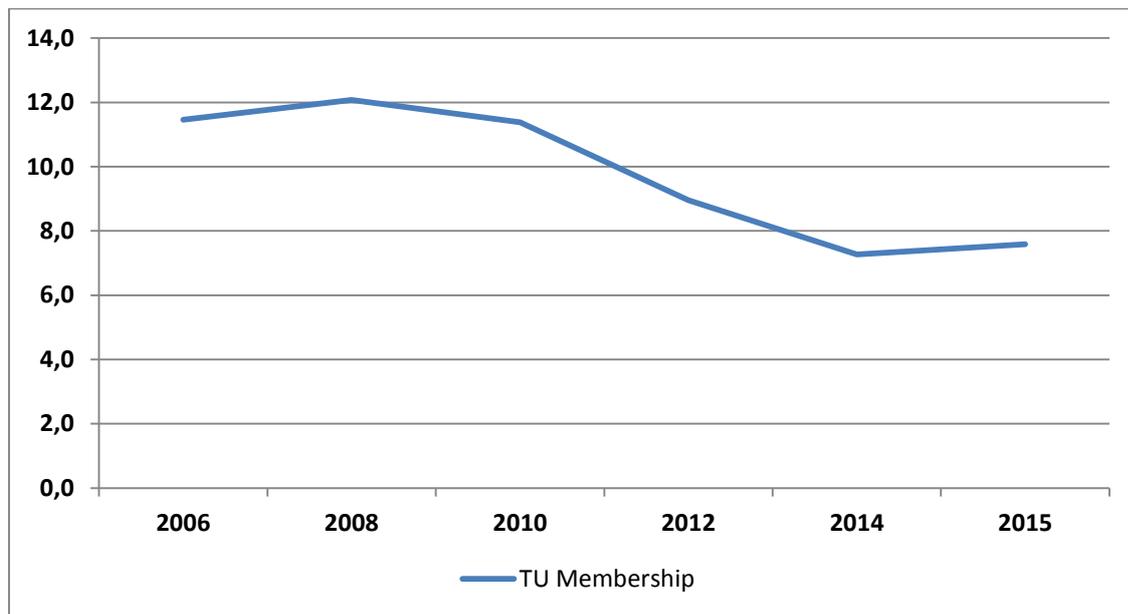
Figure 4 Usual Hours Worked Per Week among New Employees: 1998 - 2015



Source: Derived using *Quarterly National Household Survey Q2* microdata

Note: ¹ Analysis based on individuals aged 15-64 who obtained a job in the previous 18 months

Figure 5 Trade Union Membership among New Employees: 2006 - 2015



Source: Derived using *Quarterly National Household Survey Q2* microdata

Note: ¹ Analysis based on individuals aged 15-64 who obtained a job in the previous 18 months