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The Impact of Ireland's Recession on the Labour Market Outcomes of its Immigrants

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Abstract: In the mid 2000s Ireland experienced a large inflow of immigrants, partly in response to strong economic growth but also in response to its decision to allow full access to its labour market when EU expansion occurred in May 2004. Between 2004 and 2007, the proportion of non-nationals living in Ireland almost doubled, increasing from 7.7 to 13.1 percent. Between 2008 and 2009, Ireland experienced one of the most acute downturns in economic activity in the industrialised world, with a cumulative fall in Gross National Product of close to 14 percent. In this paper, we assess how this downturn has impacted upon the employment outcomes of non-nationals relative to natives. We find huge job losses among immigrants, with an annual rate of job loss of close to 20 percent in 2009, compared to 7 percent for natives. A higher rate of job loss for immigrants is found to remain when we control for factors such as age and education. We also show how an outflow of non-nationals is occurring. The findings have many implications. In particular, the results point to economic vulnerability for immigrants. However, they also point to a potential macroeconomic benefit to Ireland in terms of a flexible labour supply adjustment.

Key words: Recession, Ireland, immigration

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The Impact of Ireland's Recession on the Labour Market Outcomes of its Immigrants

Section 1: Introduction

As with many of the world's economies, Ireland experienced an economic recession in 2008 and 2009. However, in the case of Ireland the recession has been more severe, and prolonged, relative to elsewhere. Gross National Product fell by 2.8 percent in 2008 and by a further 11.3 percent in 2009. The economy is expected to stabilise in 2010 but the cumulative impact of the downturn will be around 14 percent. One of the main consequences of the recession has been a rapid rise in the rate of unemployment. In 2007, unemployment averaged 4.6 percent. By December 2008, unemployment had risen to 8.6 percent, and by the end of 2009 it had reached 13.1 percent.

In the years preceding the downturn, Ireland had experienced a long period of strong growth. Between 1990 and 2007, growth had averaged 5.7 percent per annum. In the latter part of this period, between 2003 and 2007, growth had averaged just over 5 percent per annum. Partly as a result of this growth, Ireland experienced a significant migratory inflow, especially in the period after May 2004 when the EU admitted ten new member states. Between the third quarter of 2004 and the third quarter of 2007, the number of non-nationals (aged 15 and over) grew by 85 percent. This meant that the proportion of the population aged 15 and over that was non-national increased from 7.7 percent to 13.1 percent over the same three-year period.

The purpose of this paper is to assess how the economic downturn has impacted upon Ireland's immigrants, with a particular focus on changes in the employment rates of non-nationals over the recession. We do this in two broad ways. First, we use published data from Ireland's Central Statistics Office (CSO) to examine changes in the proportions of non-nationals who are employed, unemployed and inactive, relative to Irish nationals. Second, we use microdata, again from the CSO, to assess how the employment of non-nationals has changed over the recession, using multivariate analysis where we control for other factors which would be associated with employment vulnerability such as age and education.

There are two broad motivations behind our analysis. From a microeconomic perspective, we are interested in assessing the degree to which the recession may have further disadvantaged immigrants in the labour market. This is a theme which was discussed in OECD (2009a) and which led to the policy prescription that integration policy should possibly be strengthened in the recession as opposed to weakened. From a macroeconomic perspective, we are interested in exploring whether migration is acting as a shock absorber for the Irish economy, whereby the burden of adjustment to the downturn is being borne in part by a labour force that flowed in during the boom and which may now be exiting during the recession. To use Borjas' (2001) phrase, has immigration greased the wheels of Ireland's labour market?

The paper is structured as follows. In the remainder of this introduction, we provide a brief review of what we had learned about the labour market outcomes for immigrants in Ireland prior to the recession as this provides a context for changes during the recession. In Section 2, we look at the information on immigrants' labour market experiences over the recession that can be distilled from the published data. In Section 3, we move onto the econometric analysis of these experiences. Finally in Section 4 we discuss the implications of our findings.

A number of papers on the labour market outcomes of immigrants in Ireland tended to show that they did less well relative to natives and that the apparent labour market disadvantages were particularly acute for immigrants from the EU's New Member States (NMS). Taking account of differences in socio-economic characteristics between immigrants and natives, Barrett and McCarthy (2007) showed that immigrants earned 18 percent less than comparable natives. However, the wage disadvantage was 45 percent for immigrants from the NMS. Barrett and Duffy (2008) found that immigrants were less likely to be in higher level occupations, again taking account of differences between non-nationals and nationals. For immigrants from the NMS, there was a 20 percent gap in the probability of being in higher level occupations relative to comparable natives. Barrett and Duffy (2008) also showed that this occupational disadvantage did not appear to be lower for immigrants who had been in Ireland for longer. Hence, they failed to find evidence of integration over time. Barrett *et al.* (2009) showed that immigrants were less likely to receive employer-provided training relative to natives.

These papers, and others, suggested that immigrants were in less favourable labour market situations in the period before the recession. As a result, it might have been expected that they would be particularly vulnerable to employment loss as a result of the economic downturn. In what follows, we will explore if this turned out to be the case.

Section 2: Immigrant Employment Outcomes over the Recession: Published Data

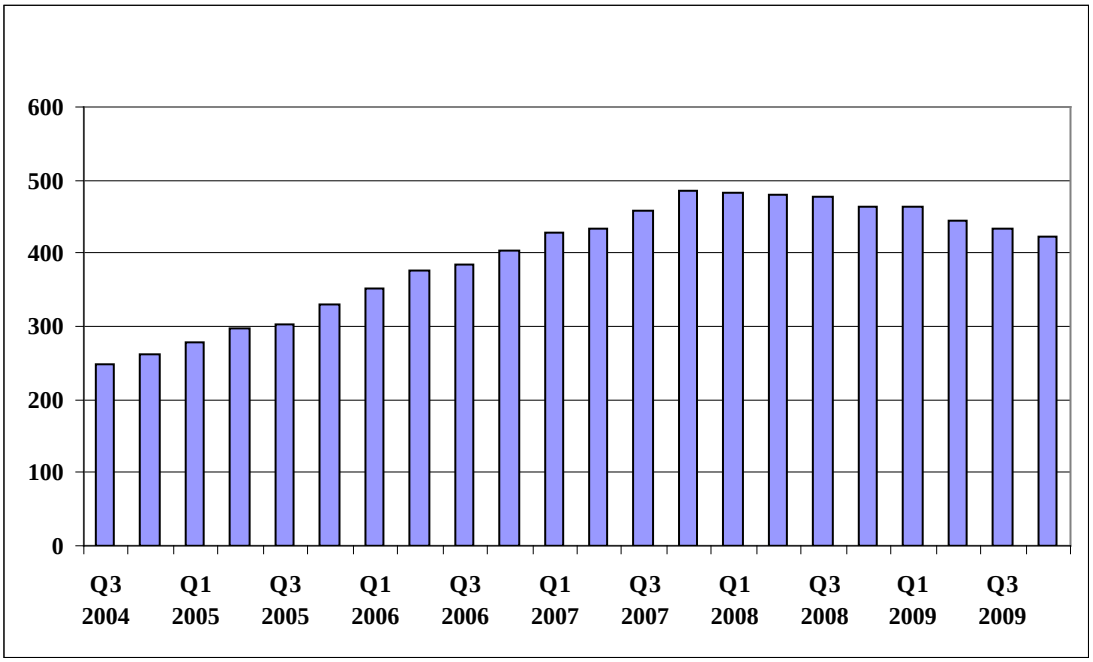
Each quarter, Ireland's Central Statistics Office (CSO) provides information on the numbers of non-nationals, aged over 15, who are employed, unemployed and inactive as part of their release on the Quarterly National Household Survey (QNHS). The QNHS, which is a nationwide survey of households in Ireland, is the official labour force survey and provides the official measure of unemployment.

In the following figures, which are derived from the QNHS, we trace the movement in the labour market from late 2004 through to the end of 2009[2]. It is important to stress at the outset that the data we use are essentially repeated cross sections and not a panel. As a result, changes over time could be the result of a changing mix of individuals as opposed to changes in the circumstances of individuals.

We begin with Figure 1 in which we show the number of non-nationals living in Ireland from the third quarter of 2004 through the fourth quarter of 2009. The population of non-nationals grew from just under 250,000 in Q3 2004 (or 7.7 percent of the total population aged 15 and over) to a peak of 485,000 in Q4 2007 (14 percent). This was an increase of almost 100 percent. Since then, the numbers have declined. The figures for Q4 2009 show that there were 423,000 non-nationals aged 15 and over in Ireland. This represents a fall of 62,000 from the peak, or almost 13 percent.

[2] All data relate to the population aged over 15.

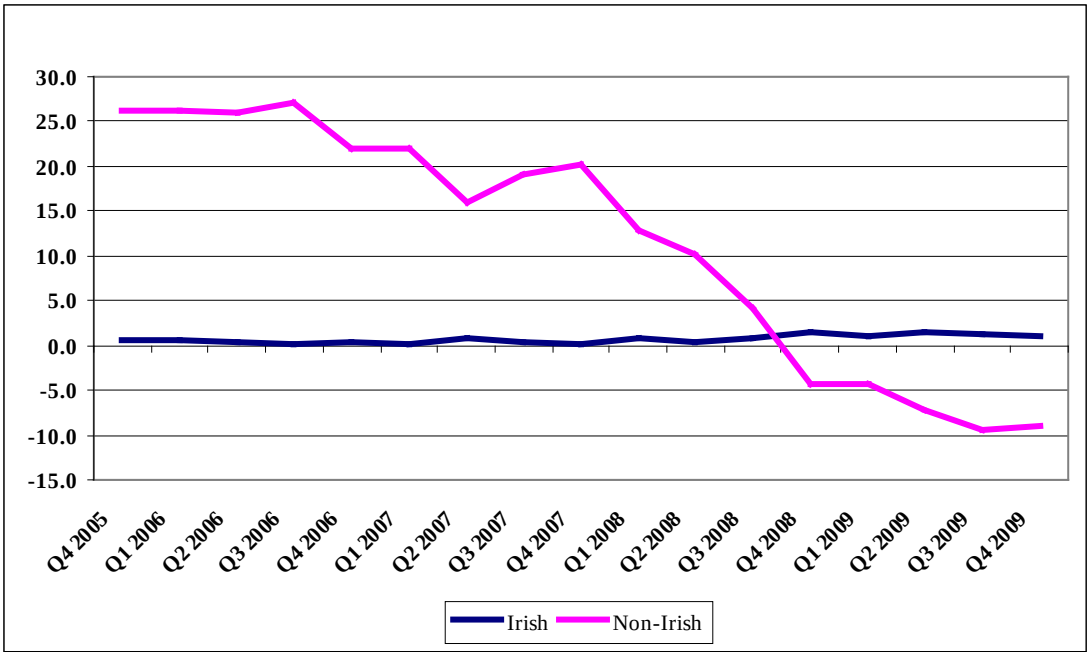
Figure 1: Number of Migrants Aged 15+ (Thousands)



Source: Constructed with data from the *Quarterly National Household Survey* (2004-2009), Central Statistics Office.

In Figure 2, we look at the population figures from a different angle and consider annual percentage changes in the population of both non-nationals and nationals. As can be seen, the non-national population had been growing at a remarkable rate (on an annual basis) right up until the end of 2007, at which time the annual growth rate was 20 percent. The rate of growth then fell sharply and turned negative in Q4 2008. For Q3 and Q4 2009, the annual rate of decline in the non-national population was close to 9 percent.

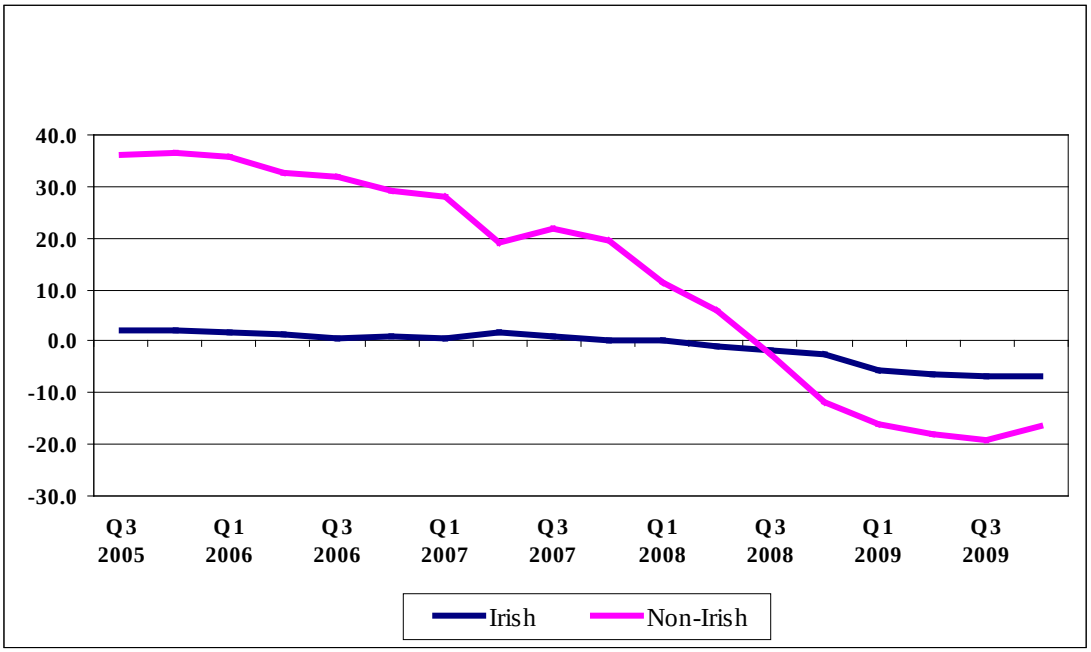
Figure 2: Percentage Change in Population Aged 15+ (Annual)



Source: Constructed with data from the *Quarterly National Household Survey* (2005-2009), Central Statistics Office.

In Figure 3, we look at the trend in employment growth for nationals and non-nationals and striking differences are immediately apparent. In 2005 and 2006, the annual rate of growth in employment for non-nationals was 30 percent or higher. Although the pace of growth slowed in 2007, it was still running at 20 percent or above. The rate of growth for non-nationals continued to decline through 2008 but one interesting point to note is that the annual rate of change in the numbers employed became negative for nationals before this occurred for non-nationals. In Q2 2008, the number of nationals employed fell by 1.1 percent relative to the same period one year earlier. The corresponding figure for non-nationals was still positive at this point. However, from Q3 2008 the annual rate of decline in the numbers of non-nationals employed exceeded that of nationals: in Q3 2009, the rate had reached close on 20 percent for non-nationals, compared with a 7 percent fall for nationals. Just as the national/non-national comparison showed stark differences in the earlier period, the comparison is almost as stark in the period of the recession.

Figure 3: Percentage Change in Employment (Annual)



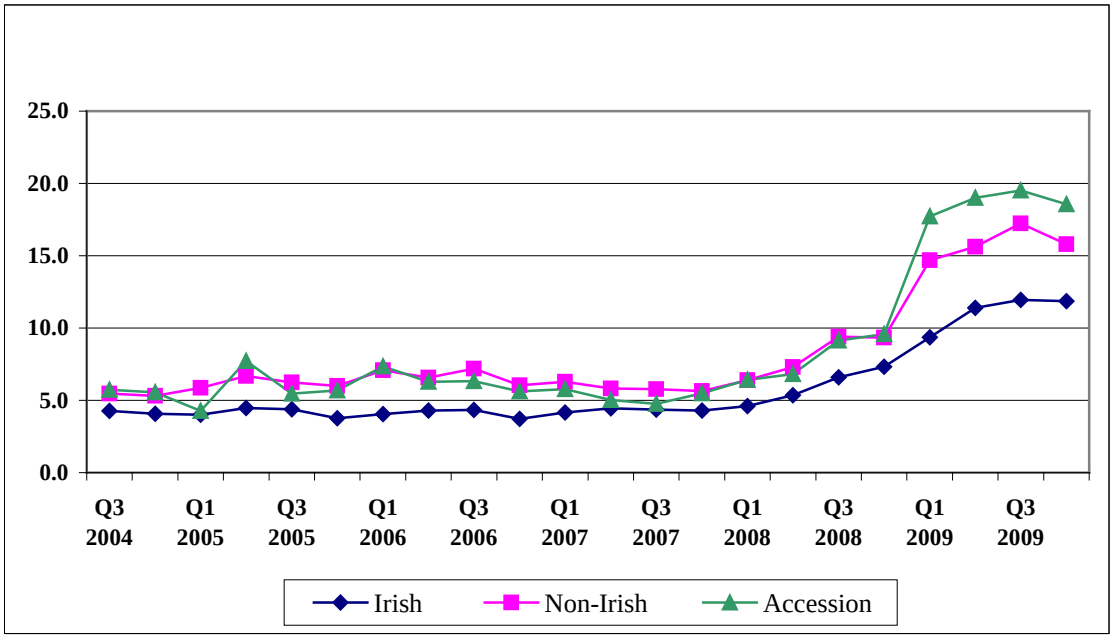
Source: Constructed with data from the *Quarterly National Household Survey* (2005-2009), Central Statistics Office.

The employment falls among non-nationals which we see in Figure 3 were large and so we would expect them to be reflected in the unemployment rate of immigrants. In Figure 4, we track the unemployment rates of Irish nationals and non-national from 2004 to 2009. We also look at immigrants from the EU's accession states as a separate category, although they are included in the non-national category too.

For the period between 2004 to the end of 2007, the rate of unemployment for Irish nationals was largely unchanged and hovered just below 5 percent. For immigrants in total, there was a fall in the rate of unemployment between 2006 and 2007, and for immigrants from the accession states this was strongest. There appeared to be a convergence between their rate of unemployment and that of the native population. In Q3 2007, the gap between the unemployment rates of Irish nationals and accession state nationals was less than 0.5 of a percentage point (4.8 percent for the accession state immigrant versus 4.4 percent for the natives). In some senses, these figures on unemployment captured much that was viewed as positive about Ireland's experience of immigration. First, it was noteworthy that Ireland could experience such a huge

population inflow without any impact on the rate of unemployment of natives[3]. Second, the convergence of the unemployment rate of the accession state (or NMS) immigrants towards that of natives was consistent with a story of labour market integration[4].

Figure 4: Unemployment Rates: 2004-2009

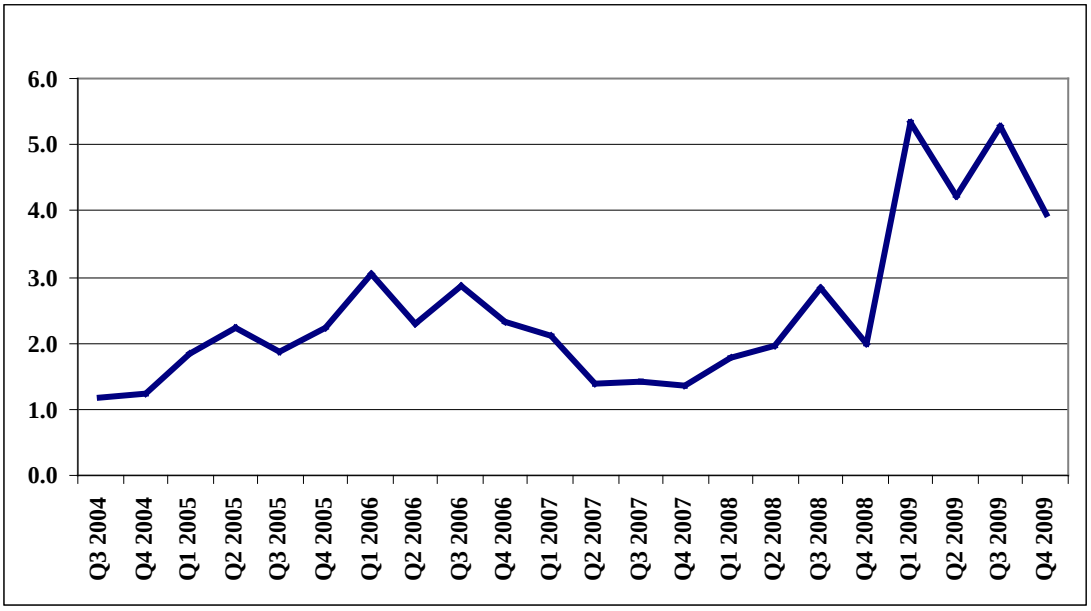


Source: Constructed with data from the *Quarterly National Household Survey* (2004-2009), Central Statistics Office.

As shown in Figure 4, the relative rates of unemployment between immigrants and natives began to diverge with the onset of recession at the start of 2008. We will use Figure 5 to illustrate this point where we look at the gap between unemployment rates. Here we look at all immigrants and the point on converging unemployment rates between 2006 and 2007 is readily seen. However, the beginning of 2009 shows a rapid divergence once again in unemployment rates with the gap exceeding 5 percentage points in both Q1 and Q3 2009. Based on the different rates of employment losses shown in Figure 3, this is not surprising and the clear lesson is that the recession was severe for immigrants in terms of employment and unemployment[5].

[3] Of course, it could have been the case that the rate of unemployment of natives would have been even lower in the absence of the large inflow. Nevertheless, the broad point appears to remain that Ireland's labour market absorbed the large inflow with limited evidence of displacement on average.
[4] Care needs to be exercised when making any conclusions about integration based on repeated cross-sections. It could have been the case that the rates of unemployment converged because unemployed immigrants left Ireland. In this case, there would be no process of integration whereby unemployed immigrants found jobs.
[5] In the Appendix, we present a figure which presents a similar picture to that in Figure 4 but which is based on unemployment payment claims.

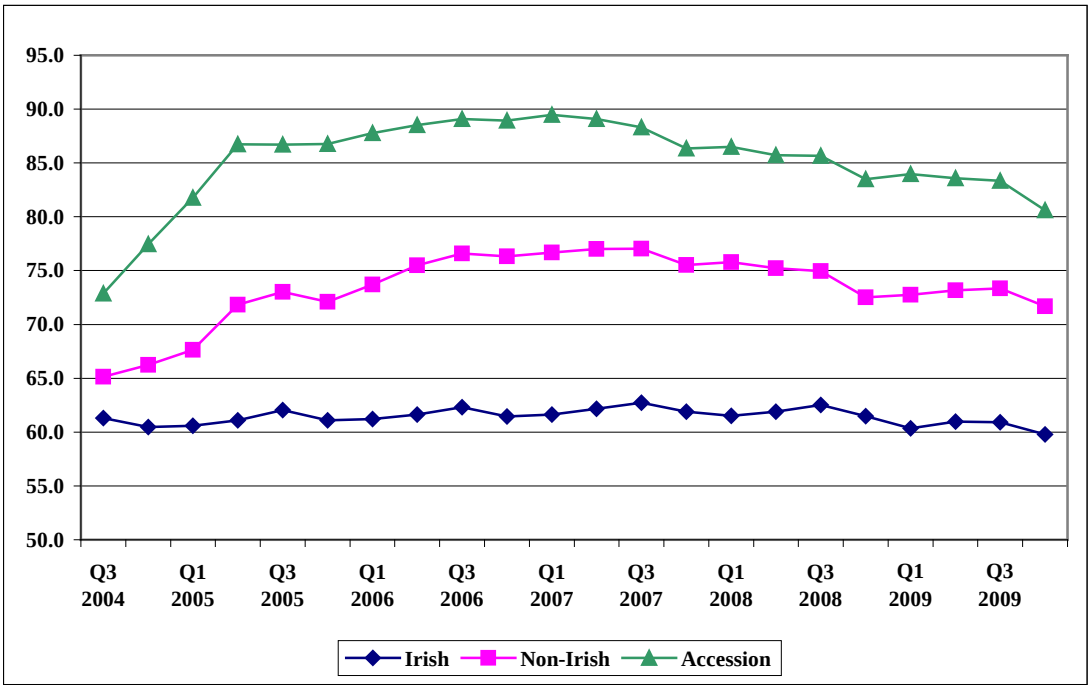
Figure 5: Gap Between Irish and Non-Irish Unemployment Rates: 2004-2009



Source: Constructed with data from the *Quarterly National Household Survey* (2004-2009), Central Statistics Office.

We look next at another dimension of labour market outcomes, inactivity. We repeat the approach used in Figures 4 and 5 by looking at the rates of participation across the groups (Figure 6) and then at the gap in those rates (Figure 7).

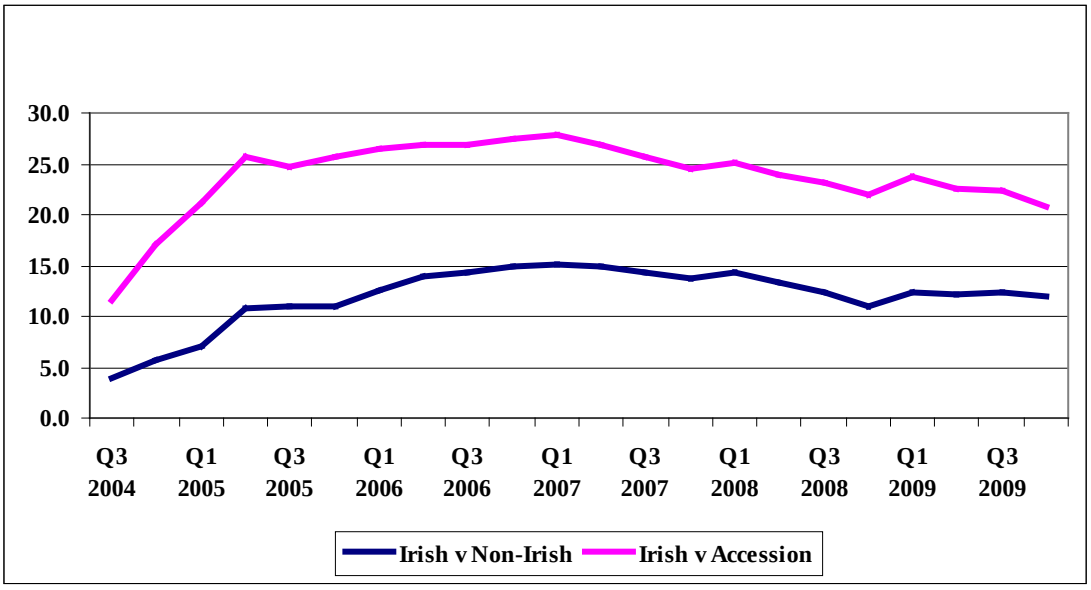
Figure 6: Participation Rates: 2004-2009



Source: Constructed with data from the *Quarterly National Household Survey* (2004-2009), Central Statistics Office.

The first point to be taken from Figure 6 is the very high rate of participation among accession state immigrants in particular. At its peak, in Q1 2007, the participation rate of accession state immigrants was almost 90 percent. The rate has declined since then but this could be due to a range of factors including reduced employment opportunities or non-working spouses joining working spouses. Participation rates declined for both immigrants and natives in the middle of 2008. In order to get a clearer sense of whether there was a different rate of decline, we look in Figure 7 at the gaps between the native participation rate and those of all immigrants and accession state immigrants.

Figure 7: Gaps Between Participation Rates: 2004-2009



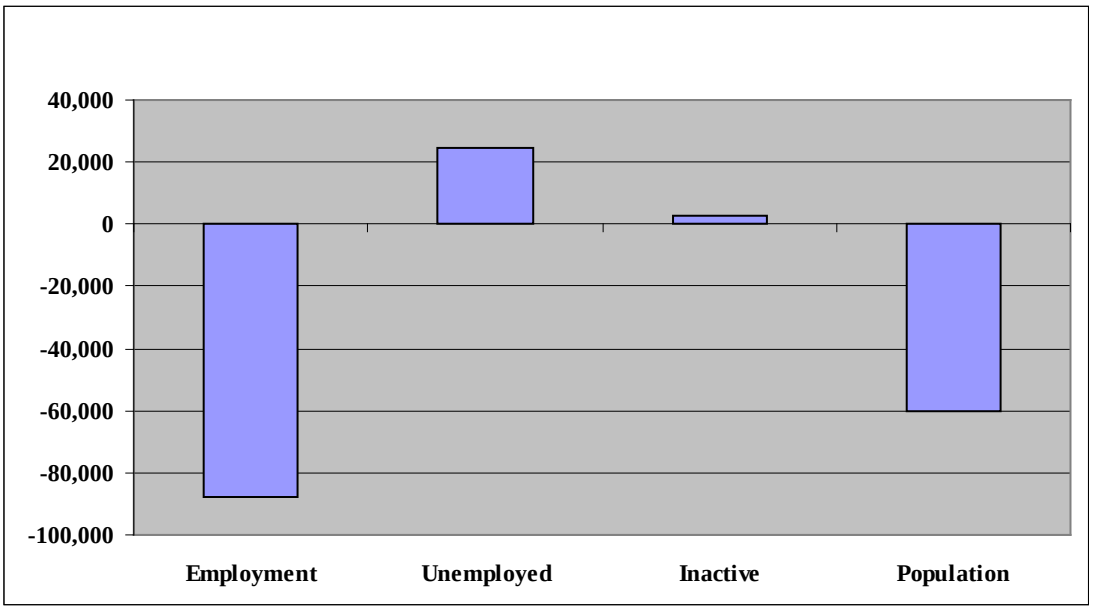
Source: Constructed with data from the *Quarterly National Household Survey* (2004-2009), Central Statistics Office.

Figure 7 is unlike Figure 5 in that there does not appear to be a clear divergence in the experiences of immigrants and natives with respect to changing rates of participation as a result of the recession. This suggests that the different rates of employment loss did not translate into a fall in the participation rate of immigrants relative to natives. We have already seen that the different rates of employment loss translated into a surge in unemployment among immigrants relative to natives but another potential channel of adjustment was out-migration. Figure 1 suggests that this was indeed a channel that has been taken by a proportion of immigrants. In Figure 8, we look at this in a slightly different way and consider how the fall in the number of immigrants employed between Q1 2008 and Q4 2009 was distributed across the three alternatives of becoming unemployed, inactive and leaving Ireland.

From Figure 8, we can see that the number of immigrants employed in Ireland fell by 87,500 over the period in question, a fall of 25 percent. The number unemployed grew by 24,500, an increase of over 100 percent. The increase in the number who declared themselves as being inactive grew by just 2,700; this was an increase of just over 2 percent. However, in absolute terms the biggest adjustment was in the number still in Ireland: this fell by 60,200 or 12 percent.

The discussion in the preceding paragraph could generate the impression that we are looking at the same people over time and assessing how those who lost their jobs reacted. As noted earlier in the paper, the data used here are not from a panel and so we need to be careful in making interpretations. However, these data are certainly consistent with a tendency for employment losses to have resulted in outflows.

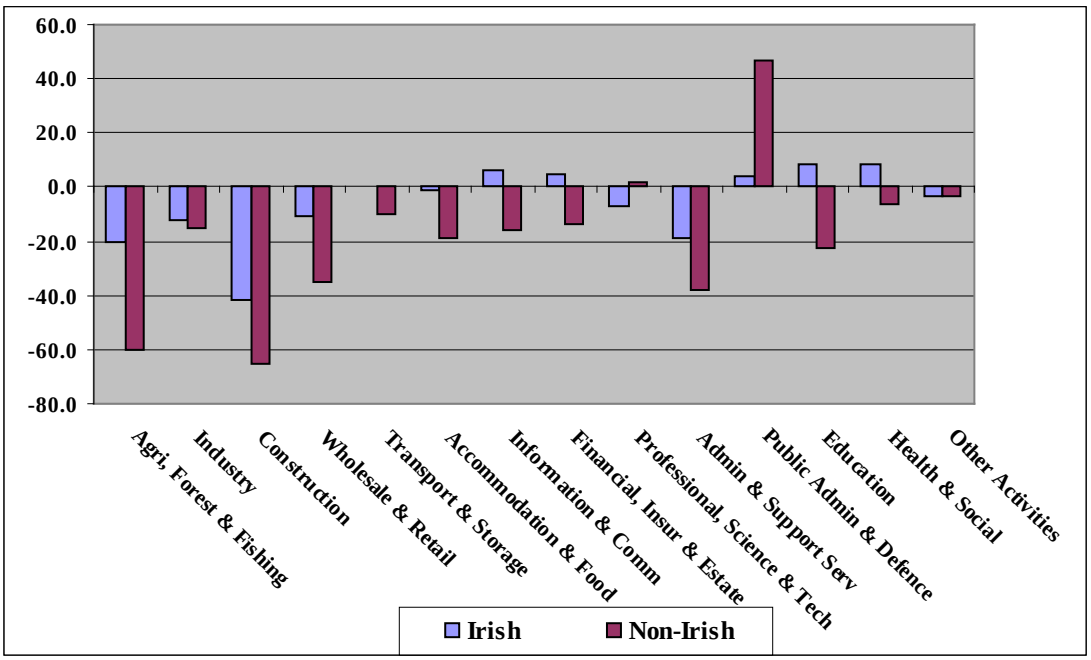
Figure 8: Changes in Employment Status of Non-Irish Nationals Between Q1 2008 and Q4 2009



Source: Constructed with data from the *Quarterly National Household Survey* (2008 and 2009), Central Statistics Office.

As a final element in this part of our analysis, we will use Figure 9 to provide some insight into the following question: was the high rate of employment loss among immigrants the result of them being heavily concentrated in contracting sectors or did they have higher rates of employment loss across all sectors? In Figure 9, we show the percentage fall in employment for immigrants and natives across sectors over the two-year period 2008-2009. The general picture that emerges is that the rate of job loss in most sectors is higher for immigrants than for natives. This suggests that the large employment losses for immigrants were not solely the result of being in vulnerable sectors.

Figure 9: Rate of Employment Loss by Sector: Q1 2008 - Q4 2009



Source: Constructed with data from the *Quarterly National Household Survey* (2008 and 2009), Central Statistics Office.

Section 3: Immigrant Employment Outcomes over the Recession: Multivariate Analysis using Microdata

The analysis in Section 2 has used published data to assess how the recession has impacted upon immigrants in Ireland. A major limitation of this analysis is that it does not take account of other socioeconomic factors which would tend to make an individual more or less likely to experience a job loss during a recession. For example, younger workers tend to be in more precarious employment situations i.e. concentrated in temporary jobs and cyclically-sensitive industries (OECD, 2009b). To the extent that immigrants are also younger than the native population, on average, the large employment losses discussed above could have been the result of age as opposed to immigrant status per se. In this section, we aim to get a closer look at the employment experiences of immigrants during the recession by using multivariate analysis in which we control for these other socio-economic characteristics.

As with the analysis in Section 2, the data used here came from the Quarterly National Household Survey (QNHS). Information for the QNHS is collected continuously throughout the year, with 3,000 households surveyed each week to give a total sample of 39,000 households in each quarter. Households participate in the survey for five consecutive quarters.

The QNHS offers one of the few large-scale surveys of immigrants in Ireland. However, it is also known that the survey undercounts the number of immigrants. This undercount may cause concern about non-representativeness in using QNHS data to analyse immigration issues. Furthermore, as the survey is only administered in English, there might be an additional concern that low-skilled immigrants are disproportionally omitted from the QNHS. However, research by Barrett and Kelly (2008) shows that the QNHS provides a reliable profile of Ireland's immigrants.

For the purpose of this paper, data from Quarter 1 of the 2008 and 2009 QNHSs were used. The 2008 data captures labour market conditions at the beginning of the recession, while the 2009 data depicts the situation in the middle of the downturn. To assess the impact of the recession on the employment prospects of immigrants, we merged the two QNHS datasets into one and introduced a series of 2009 year interaction terms into our employment probability specifications. The merged QNHS dataset consists of 143,168 individuals. After restricting our sample to the working age population[6] and eliminating individuals that had missing information on key variables[7] the final sample used in the paper consisted of 70,651 individuals[8].

As well as including information on a person's economic status (employed, unemployed or economically inactive), the QNHS also contains information on a range of demographic factors (e.g. gender, age, nationality, country of birth, marital status, year of residence in Ireland, educational attainment, geographic location, etc.), job characteristics (e.g. occupation, industry, job-type, trade union membership,

[6] Self-employed individuals are excluded from the analysis, and working age is defined as being aged between 20 and 64.
[7] Specifically, individuals for which country of birth, nationality and/or year of taking up residence in Ireland information was missing were excluded.
[8] We also eliminated individuals from the analysis whose country of birth did not match their nationality e.g. person with an Irish nationality that was not born in Ireland. Furthermore, American citizens were omitted due to small numbers.

working patterns, etc.) and unemployment information (e.g. month last worked, job search methods, etc.).

In terms of methodology, we estimated binary probit regression models where the dependent variable equalled 1 if the person was employed and zero if non-employed (i.e. unemployed or economically inactive)[9]. The following explanatory variables were included in our specifications: gender, age, education, geographic location within Ireland, whether the individual is an immigrant and year of observation (i.e. 2008 or 2009)[10]. We define immigrants as individuals who describe their nationality as being non-Irish and who were not born in Ireland. This group is then compared with individuals that describe themselves as Irish nationals and who say that they were born in Ireland. In some specifications, immigrants are divided into four regional categories: i) UK, ii) EU-13[11], iii) EU-New Member States (i.e. the accession states) and iv) Other Countries. Descriptive information on the variables included in our models is presented in Table A1 in the Appendix.

We initially estimated four sets of specifications to assess the impact of the recession on immigrants' employment propensities compared to natives. In the first set, we used a dichotomous immigrant dummy variable equalling 1 if non-Irish and zero if native. In the second set of models, immigrants were divided into the four nationality groupings outlined above. In order to identify if recently arrived immigrants are more likely to experience negative employment prospects during the recession, we included a 'recently arrived' and an 'earlier arrived' immigrant dummy variable in our third set of specifications. The year of arrival information that is contained in the QNHS was used to create these two dummy variables, with recently arrived defined as immigrants that have been in the country for a maximum of two years. In our fourth set of models, we broke out the four nationality groups into recently arrived and earlier arrived immigrants.

[9] The QNHS contains two economic status variables: the first is based on the International Labour Office (ILO) classification and the second captures an individual's own perception of their economic status (principal economic status variable).The ILO variable was used to create the dependent variable that is used in this paper.
[10] We also include a student control in our models. This is because there are a small number of individuals in our dataset that view their main economic status as being a student (identified by the principal economic status variable) but are employed according to the ILO definition.
[11] EU-15 less Ireland and the UK.

Impact of the Recession on Immigrants:

The results from the four sets of specifications are presented in Tables 1 to 4. In each case, Model 1 includes a dummy variable indicating immigrant/native and a dummy variable indicating the year of observation (2008 or 2009). In model 2, we add interaction terms between the year and immigrant dummies. If we find negative and significant coefficients on these interaction dummies, we interpret this as providing evidence of a deterioration in employment probabilities for immigrants relative to natives in 2009.

As indicated earlier, our dependent variable equals 1 if employed and zero otherwise. Only the results on our variables of interest are presented in the tables. Specifically, for each variable we present the coefficient estimates and also the marginal effects on an individual's likelihood of being employed. The results on the other covariates that we included in our models are in line with expectations and are presented in Tables A2 to A5 in the Appendix[12]. Overall, we found that an individual's likelihood of being employed decreases with age, if female and/or live in the Border/Midland/Western region of the county, while a person's probability of being employed increases with education level and if married.

The coefficient estimate on our immigrant dummy variable in Model 1 (Table 1) tells us that, controlling for factors such as age, education, gender, etc., immigrants are less likely to be employed compared to natives. The marginal effect, which gives us a sense of the size of this result, tells us that immigrants are almost 2 per cent less likely to be employed compared to natives. In relation to the impact of the recession on immigrants' employment prospects, the coefficient estimate on the immigrant*Year2009 interaction term (Model 2), being negative and statistically significant, tells us that the recession has been more damaging to the employment probabilities of immigrants relative to natives.

[12] Only the coefficient results are presented in the appendix tables. The marginal effects are available from the authors on request.

Table 1: Probit Model of Employment for Immigrants and Natives

Model		Coefficient	Standard Error	Marginal Effect	Standard Error
1	Immigrant	-0.047***	(0.017)	-0.017***	(0.006)
2.	Immigrant*Year	-0.133***	(0.032)	-0.049***	(0.012)

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

In Table 2, we show the results from our second set of models in which immigrants are divided into four nationality groupings: UK, EU-13, EU-New Member States (EU-NMS) and Other Countries. The results from Model 1 indicate that immigrants from the EU-NMS are the only immigrant group that are more likely to be employed compared to natives (7.7 per cent), whereas those from the UK and Other Countries are significantly less likely to be employed (12.4 and 8.7 per cent respectively). Interestingly, when we investigated the impact that the recession has had on immigrants from different locations (Model 2), we found that the employment prospects of immigrants from the EU-NMS are the only group that has been negatively affected by the downturn.

Table 2: Probit Model of Employment for Immigrants by Nationality and All Natives

Model:		Coefficient	Standard Error	Marginal Effect	Standard Error
1	UK	-0.327***	(0.035)	-0.124***	(0.014)
	EU-13	-0.033	(0.051)	-0.012	(0.018)
	EU-NMS	0.227***	(0.025)	0.077***	(0.008)
	Other	-0.231***	(0.028)	-0.087***	(0.011)
2	UK*Year	0.057	(0.070)	0.020	(0.025)
	EU-13*Year	0.046	(0.101)	0.016	(0.035)
	EU-NMS*Year	-0.324***	(0.050)	-0.123***	(0.020)
	Other*Year	-0.081	(0.055)	-0.030	(0.020)

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

One might expect that immigrants that have been in Ireland for a long period of time would be more integrated and, hence, would be less exposed to the recession compared to those that arrived in the country in the last couple of years. To investigate this hypothesis, our third set of specifications include a recently arrived immigrant dummy variable, defined here as immigrants that have been in the country for a maximum of two years, and an earlier arrived immigrant dummy variable. The results from our base model (Model 1) indicate that there is no difference in the employment propensities of recently arrived immigrants and natives, whereas earlier arrived immigrants are 2.6 per cent less likely to be employed compared to natives[13]. However, based on the results in Model 2, both earlier arrived and recently arrived immigrants have experienced a decline in employment probabilities, compared to natives. While the findings seem to suggest that the recession has had a bigger negative impact on recently arrived immigrants, a t-test shows that there is no statistical difference between the more recently arrived and earlier arrived immigrant coefficients.

Table 3: Probit Model of Employment for Recently Arrived and Earlier arrived Immigrants and All Natives

Model:		Coefficient	Standard Error	Marginal Effect	Standard Error
1	Recently Arrived Immigrant	0.010	(0.028)	0.004	(0.010)
	Earlier Arrived Immigrant	-0.071***	(0.019)	-0.026***	(0.007)
2	Recently Arrived Immigrant*Year	-0.167***	(0.056)	-0.062***	(0.021)
	Earlier Arrived Immigrant*Year	-0.107***	(0.038)	-0.039***	(0.014)

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

In the fourth set of specifications (Table 4), we examined whether or not recently arrived immigrants from certain locations are more exposed to the downturn compared to their earlier arrived counterparts. The first point to note from Table 4 relates to Model 1. The results from this model indicate that both recently arrived and earlier arrived immigrants from EU-NMS are more likely to be employed compared

[13] The earlier arrived immigrant coefficient is significantly different to the coefficient for the more recent arrivals.

to natives. The positive effect for the most recent arrivals from EU-NMS is largest, and this coefficient is statistically different to the coefficient for the earlier arrived EU-NMS immigrants. Apart from earlier arrived immigrants from the EU-13, all other immigrant groupings are less likely to be employed compared to natives, with the marginal effects indicating that the impact is bigger for more recently arrived immigrants. However, the difference between the Other Countries recently arrived and earlier arrived immigrant coefficients are not statistically significant.

Table 4: Probit Model of Employment for Recently Arrived and Earlier arrived Immigrants by Nationality and All Natives

Model:		Coefficient	Standard Error	Marginal Effect	Standard Error
1	UK Recently Arrived Immigrants	-0.650***	(0.090)	-0.253***	(0.035)
	EU-13 Recently Arrived Immigrants	-0.154*	(0.082)	-0.057*	(0.031)
	EU-NMS Recently Arrived Immigrants	0.348***	(0.041)	0.114***	(0.012)
	Other Recently Arrived Immigrants	-0.303***	(0.052)	-0.115***	(0.021)
	UK Earlier Arrived Immigrants	-0.270***	(0.038)	-0.102***	(0.015)
	EU-13 Earlier Arrived Immigrants	0.039	(0.064)	0.014	(0.023)
	EU-NMS Earlier Arrived Immigrants	0.153***	(0.031)	0.053***	(0.010)
	Other Earlier Arrived Immigrants	-0.207***	(0.032)	-0.077***	(0.012)
2	UK Recently Arrived Immigrants *Year	-0.149	(0.182)	-0.055	(0.069)
	EU-13 Recently Arrived Immigrants *Year	0.213	(0.163)	0.072	(0.052)
	EU-NMS Recently Arrived Immigrants *Year	-0.179**	(0.082)	-0.067**	(0.031)
	Other Recently Arrived Immigrants *Year	-0.133	(0.104)	-0.049	(0.039)
	UK Earlier Arrived Immigrants*Year	0.084	(0.076)	0.029	(0.026)
	EU-13 Earlier Arrived Immigrants*Year	-0.067	(0.129)	-0.025	(0.048)
	EU-NMS Earlier Arrived Immigrants*Year	-0.368***	(0.065)	-0.140***	(0.026)
	Other Earlier Arrived Immigrants*Year	-0.074	(0.064)	-0.027	(0.024)

Note: Standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

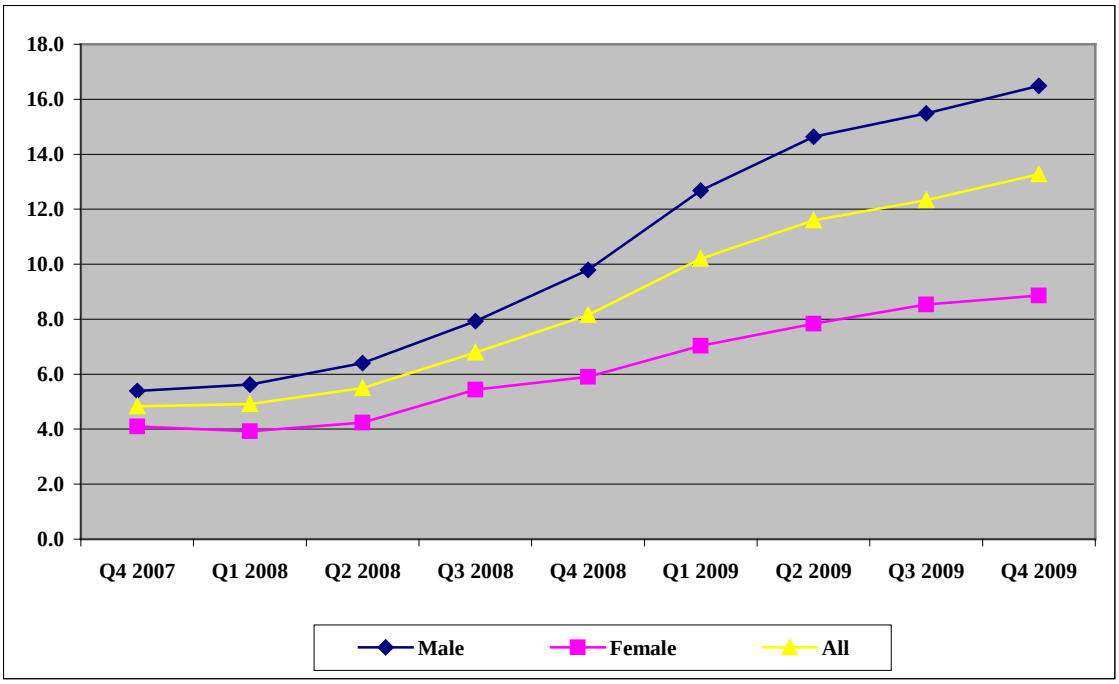
Moving on to the impact of the recession, we saw earlier (Table 2, Model 2) that the employment prospects of EU-NMS immigrants were the only nationally grouping that

were negatively affected by the downturn. The results in Table 4 (Model 2) suggest that it is the employment outlook of earlier arrived EU-NMS immigrants that has been more negatively affected by the recession. However, the difference between the EU-NMS recently arrived and earlier arrived immigrant coefficients is only statistically significant at 10 per cent; thus, this is relatively weak evidence that earlier arrived immigrants from EU-NMS are facing a tougher labour market compared to their more recently arrived counterparts.

Gender Analysis

The rapid rise in unemployment that has taken place over the downturn in Ireland has not been uniformly distributed across genders. Specifically, male unemployment has increased more than female, rising from 5.4 percent at the end of 2007 to 16.5 percent by the final quarter of 2009 whereas female unemployment increased from 4.1 to 8.9 percent over the same time period (Figure 10). This unemployment rate discrepancy is predominately due to the higher concentration of male employment in the construction sector, the industrial sector that has been worst effected by the recession.

Figure 10: Unemployment Rates: Q4 2007 – Q4 2009



Given this, we investigated if the recession had a differential effect on male and female immigrants' employment prospects by estimating separate gender models and then tested for differences in the variables of interest. The results from this analysis

are presented in Tables 5 and 6. For simplicity, we report only the immigrant/nationality and year interaction effects (coefficient and marginal effects). The results for the other covariates included in the models behaved according to expectations and are presented in Tables A6 and A7 in the Appendix.

Focussing on the immigrant status model (Table 5, Model 1), the first result to note is that there is no difference between male immigrant and native employment probabilities (Column 1). Female immigrants, on the other hand, are less likely to be employed compared to their Irish counterparts (Column 2). The result on the immigrant dummy variable in Column 3, which formally tests for statistical differences between the male and female coefficients, tells us that female immigrants are also less likely to be employed compared to male immigrants (-5.5 per cent). Turning to the impact of the recession, (Model 2), we can see from the individual gender models that the effect has been negative for both male and female immigrants. However, the insignificant difference between the coefficients in Column 3 tells us that the economic downturn has not had a differential gender effect.

Table 5: Gender Probit Models of Employment: Immigrant Status

		Coefficient			**Marginal Effect**		
		(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**
				Difference			**Difference**
		Male Model	**Female Model**	**between Models**	**Male Model**	**Female Model**	**between Models**
Model							
	Immigrant	0.015	0.136***	-0.150***	0.005	-0.052***	-0.055***
1		(0.025)	(0.023)	(0.033)	(0.008)	(0.009)	(0.013)
	Immigrant*Year	-0.132***	-0.12***	0.011	-0.044***	-0.046***	0.004
2.		(0.048)	(0.044)	(0.065)	(0.016)	(0.017)	(0.023)

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

In relation to the nationality results (Table 6, Specification 1), both UK and Other Country male and female immigrants emerge as being less likely to be employed compared to their Irish counterparts, whereas those from NMS countries have higher

employment probabilities. NMS females, however, are less likely to be employed compared to their male compatriots (Column 3), as are females from Other Countries. EU-13 females are less likely to be employed compared to Irish females as well, and also their fellow male citizens.

Table 6: Gender Probit Models of Employment: Nationality Status

		Coefficient			Marginal Effect		
		(1)	(2)	(3)	(1)	(2)	(3)
				Difference			Difference
		Male Model	Female Model	between Models	Male Model	Female Model	between Models
Model							
	UK	-0.318***	-0.35***	-0.037	-0.111***	-0.139***	-0.013
1		(0.053)	(0.048)	(0.072)	(0.020)	(0.019)	(0.026)
		0.108	-0.161**	-0.269***	0.033	-0.062**	-0.101**
	EU-13	(0.079)	(0.067)	(0.104)	(0.024)	(0.026)	(0.040)
		0.275***	0.139***	-0.136***	0.081***	0.052***	-0.050***
	EU-NMS	(0.037)	(0.036)	(0.051)	(0.010)	(0.013)	(0.019)
		-0.178***	-0.31***	-0.135**	-0.060**	-0.123***	-0.050**
	Other	(0.042)	(0.039)	(0.057)	(0.015)	(0.015)	(0.021)
Specification:							
	UK*Year	0.198*	-0.063	-0.261*	0.059**	-0.024	-0.098*
2		(0.106)	(0.096)	(0.143)	(0.029)	(0.037)	(0.056)
	EU-13*Year	0.355**	-0.156	-0.511**	0.100***	-0.060	-0.197**
		(0.158)	(0.133)	(0.207)	(0.038)	(0.053)	(0.082)
	EU-NMS*Year	-0.504***	-0.15***	0.349***	-0.182***	-0.060**	0.113***
		(0.075)	(0.070)	(0.102)	(0.029)	(0.027)	(0.029)
	Other*Year	-0.033	-0.102	-0.069	-0.011	-0.039	-0.025
		(0.081)	(0.076)	(0.111)	(0.027)	(0.030)	(0.041)

Note: Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Regarding the impact of the economic downturn on immigrants' employment prospects (Model 2), this has only been negative and significant for male and female immigrants from NMS countries. However, the effect has been more severe on NMS males compared to their female counterparts. Another interesting result to emerge from this analysis is that EU13 and UK males are more likely to be employed during

the economic downturn than Irish males, and they are also more likely to be employed compared to their fellow female citizens[14].

Section 4: Conclusion

The analysis presented in this paper shows that Ireland's recession has impacted heavily on its immigrants in terms of reduced employment and increased unemployment. This finding is in contrast to the situation in the UK and Germany, where the impact of the downturn on immigrants does not appear to have differed so significantly from the impact on natives (Sumption, 2010 and Kim, 2010). Significant outflows also appear to be happening, based on the information provided in the Quarterly National Household Survey[15]. As shown in Figure 2, in the year ending Q4 2009, the population of non-nationals fell by 8.9 percent, or 41,500. This rate of net outflow is as high as at any time during the current crisis so there is no sign as yet of a levelling off in the outflow. In spite of this, it should also be noted that there was still well over 400,000 non-nationals living in Ireland (aged 15 and over) towards the end of 2009 and this represented 12 percent of the population. Even if outflows persist at their current rate for another year or two, Ireland will retain a significant non-national population and so issues of integration will remain.

Our econometric analysis has shown that the employment probabilities of immigrants from the accession states were particularly badly hit between Q1 2008 and Q1 2009, particularly NMS males compared to both Irish males and their fellow female citizens. In this context, it is interesting to note that the rate of outflow for accession state immigrants was also higher than for other immigrant groups between these two dates. Over this period, the population of all non-nationals fell by 4.3 percent but the fall for immigrants from the accession states was 9.2 percent. In a more recent period, the rate of net outflow has become more similar across groups – the average in the year ended

[14] We estimated separate gender models with recently arrived and earlier arrived immigrant dummy variables included, and another specification that had recently arrived and earlier arrived nationality dummy variables, to assess if the recession had a differential gender effect for such immigrant groups. Apart from recently arrived NMS females, who emerged to be more likely to be employed during the recession than their male counterparts, and earlier arrived EU13 females, who were less likely to be employed during the downturn than their fellow male citizens, all other immigrant/nationality results from these two analyses were insignificant (results available from the authors on request).

[15] The Central Statistics Office produces a release annually on *Population and Migration Estimates*. The most recent version was published in September 2009 and relates to the year ending April 2009. Under normal circumstances, this time lag is not a problem but in the current context, the existing information from that source is dated

Q4 2009 was a net outflow of 8.9 percent, with the figure for accession state immigrants being 9.2 percent.

Ireland's experience of immigration during its boom provided a new context in which to study immigration. Similarly, its recession has provided insights into the situation of migrants during a rapid downturn. The lessons appear to be that the labour market disadvantage which immigrants experienced in the boom, in terms of lower wages and occupational downgrading, manifested itself in rapid job losses in the recession. Figure 8 is consistent with a story in which much of the reaction to job losses by immigrants has been to out-migrate but we need to be careful on this due to the point made earlier about the fact that cross sectional data is being used and not a panel. If it is the case that the employment loss has resulted in outflows, Ireland can be said to have enjoyed a benefit to its economy from immigration. An inflow allowed labour demand to be met in a boom and then for that labour to be released in the downturn. In this way, Ireland's openness to immigration has been rewarded.

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Appendix

Figure A1: Numbers on the Live Register as a Percentage of the Labour Force: July 2004 to December 2009

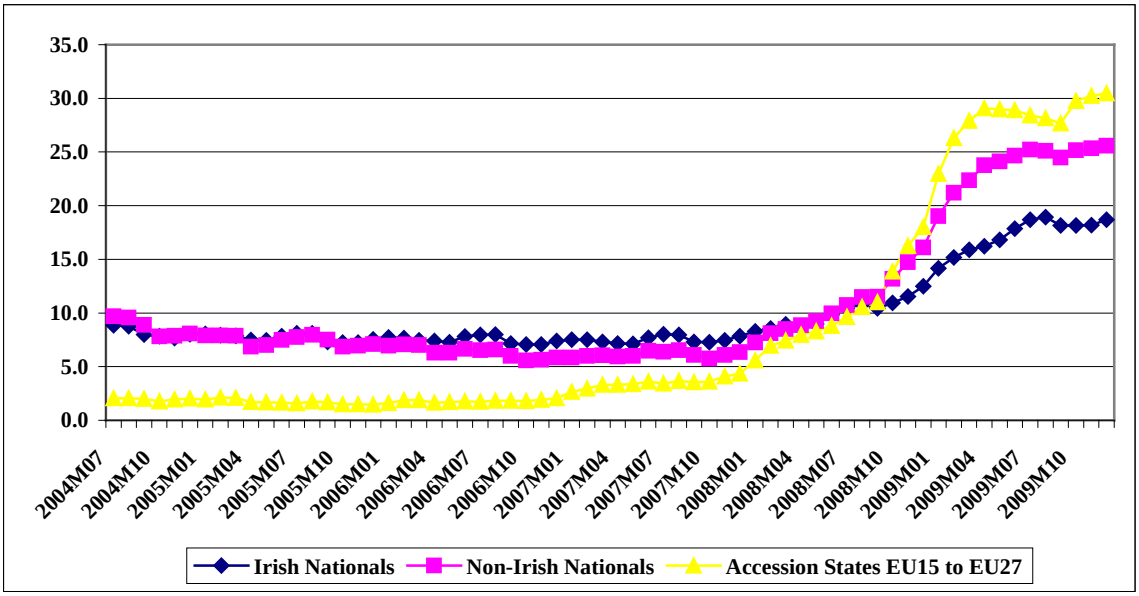

Table A1: Descriptive Statistics on Merged 2008 and 2009 (Q1) QNHS Variables

	All		Natives		Immigrants	
	Mean	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
Employed	65.7	0.475	65.3	0.476	68.5	0.464
Unemployed	5.9	0.236	5.5	0.227	9.2	0.290
Economically Inactive	28.4	0.451	29.2	0.455	22.2	0.416
Female	55.0	0.498	55.8	0.497	48.8	0.500
Age 25-34	24.6	0.430	22.0	0.414	43.4	0.496
Age 35-44	23.0	0.421	22.9	0.420	23.7	0.426
Age 45-54	21.1	0.408	22.4	0.417	11.7	0.321
Age 55-59	9.4	0.292	10.3	0.304	3.0	0.170
Age 60-64	8.7	0.282	9.5	0.293	2.7	0.163
Married	54.2	0.498	54.6	0.498	51.3	0.500
Widowed	1.9	0.135	2.0	0.140	0.8	0.091
Divorced	4.9	0.216	4.9	0.215	5.0	0.218
Secondary	43.9	0.496	45.3	0.498	33.6	0.472
Post-Secondary	9.4	0.292	9.6	0.294	8.1	0.273
Third-Level Non Degree	11.0	0.312	11.0	0.313	10.4	0.305
Third-Level Degree and Higher	19.4	0.395	18.5	0.389	25.7	0.437
Student	5.1	0.220	4.9	0.217	6.1	0.239
Border/Midland/Western Region	23.7	0.425	24.0	0.427	21.4	0.410
Immigrant	12.0	0.325	-	-	-	-
UK	2.1	0.142	-	-	17.3	0.378
EU-13	1.2	0.108	-	-	9.8	0.297
EU-NMS	5.1	0.221	-	-	42.8	0.495
Other Countries	3.6	0.187	-	-	30.2	0.459
Recently Arrived Immigrant	3.7	0.190	-	-	31.2	0.464
Earlier arrived Immigrant	8.2	0.275	-	-	68.8	0.464
Observations	70,651		62,182		8,469	

Note: Std. Dev. is abbreviation for standard deviation.

Table A2: Probit Model of Employment for All Immigrants and All Natives

	Model 1		Model 2	
	Coefficient	**Standard Error**	**Coefficient**	**Standard Error**
Constant	0.477***	(0.022)	0.468***	(0.022)
Female	-0.366***	(0.011)	-0.366***	(0.011)
Age 25-34	-0.040**	(0.020)	-0.039*	(0.020)
Age 35-44	-0.201***	(0.022)	-0.199***	(0.022)
Age 45-54	-0.203***	(0.023)	-0.202***	(0.023)
Age 55-59	-0.545***	(0.026)	-0.544***	(0.026)
Age 60-64	-0.970***	(0.027)	-0.969***	(0.027)
Married	0.058***	(0.014)	0.058***	(0.014)
Widowed	0.030	(0.039)	0.029	(0.039)
Divorced	-0.047*	(0.026)	-0.046*	(0.026)
Secondary	0.447***	(0.015)	0.446***	(0.015)
Post-Secondary	0.582***	(0.021)	0.582***	(0.021)
Third-Level Non Degree	0.879***	(0.021)	0.879***	(0.021)
Third-Level Degree and Higher	1.076***	(0.019)	1.076***	(0.019)
Student	-1.425***	(0.026)	-1.425***	(0.026)
Border/Midland/Western Region	-0.064***	(0.012)	-0.064***	(0.012)
Immigrant	-0.047***	(0.017)	0.024	(0.024)
Year 2009	-0.156***	(0.010)	-0.140***	(0.011)
Immigrant*Year2009	-	-	-0.133***	(0.032)
Observations	70,651		70,651	
Pseudo R2	0.1370		0.1372	

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A3: Probit Model of Employment for Immigrants by Nationality and All Natives

	Model 1		Model 2	
	Coefficient	**Standard Error**	**Coefficient**	**Standard Error**
Constant	0.438***	(0.023)	0.427***	(0.023)
Female	-0.366***	(0.011)	-0.366***	(0.011)
Age 25-34	-0.033	(0.020)	-0.030	(0.020)
Age 35-44	-0.170***	(0.022)	-0.168***	(0.022)
Age 45-54	-0.176***	(0.023)	-0.174***	(0.023)
Age 55-59	-0.513***	(0.026)	-0.510***	(0.026)
Age 60-64	-0.936***	(0.027)	-0.933***	(0.027)
Married	0.059***	(0.014)	0.059***	(0.014)
Widowed	0.034	(0.039)	0.034	(0.039)
Divorced	-0.045*	(0.026)	-0.044*	(0.026)
Secondary	0.460***	(0.015)	0.461***	(0.015)
Post-Secondary	0.594***	(0.021)	0.596***	(0.021)
Third-Level Non Degree	0.899***	(0.021)	0.901***	(0.021)
Third-Level Degree and Higher	1.105***	(0.019)	1.106***	(0.019)
Student	-1.389***	(0.026)	-1.387***	(0.026)
Border/Midland/Western Region	-0.062***	(0.012)	-0.061***	(0.012)
UK	-0.327***	(0.035)	-0.355***	(0.049)
EU-13	-0.033	(0.051)	-0.058	(0.074)
EU-NMS	0.227***	(0.025)	0.405***	(0.038)
Other Countries	-0.231***	(0.028)	-0.187***	(0.041)
Year 2009	-0.156***	(0.010)	-0.140***	(0.011)
UK*Year2009	-	-	0.057	(0.070)
EU-13*Year2009	-	-	0.046	(0.101)
EU-NMS*Year2009	-	-	-0.324***	(0.050)
Other Countries*Year2009	-	-	-0.081	(0.055)
Observations	70,651		70,651	
Pseudo R2	0.1396		0.1401	

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A4: Probit Model of Employment for Recently Arrived and Earlier Immigrants and All Natives

	Model 1		Model 2	
	Coefficient	**Standard Error**	**Coefficient**	**Standard Error**
Constant	0.473***	(0.022)	0.465***	(0.023)
Female	-0.366***	(0.011)	-0.366***	(0.011)
Age 25-34	-0.038*	(0.020)	-0.037*	(0.020)
Age 35-44	-0.197***	(0.022)	-0.197***	(0.022)
Age 45-54	-0.200***	(0.023)	-0.199***	(0.023)
Age 55-59	-0.542***	(0.026)	-0.541***	(0.026)
Age 60-64	-0.967***	(0.027)	-0.966***	(0.027)
Married	0.058***	(0.014)	0.058***	(0.014)
Widowed	0.030	(0.039)	0.030	(0.039)
Divorced	-0.045*	(0.026)	-0.045*	(0.026)
Secondary	0.447***	(0.015)	0.447***	(0.015)
Post-Secondary	0.583***	(0.021)	0.583***	(0.021)
Third-Level Non Degree	0.880***	(0.021)	0.880***	(0.021)
Third-Level Degree and Higher	1.077***	(0.019)	1.077***	(0.019)
Student	-1.424***	(0.026)	-1.423***	(0.026)
Border/Midland/Western Region	-0.064***	(0.012)	-0.064***	(0.012)
Recently Arrived Immigrant	0.010	(0.028)	0.084**	(0.038)
Earlier Immigrant	-0.071***	(0.019)	-0.011***	(0.029)
Year 2009	-0.155***	(0.010)	-0.140***	(0.011)
Recently Arrived Immigrant*Year	-	-	-0.167	(0.056)
Earlier Immigrant*Year	-	-	-0.107***	(0.038)
Observations	70,651		70,651	
Pseudo R2	0.1371		0.1373	

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A5: Probit Model of Employment for Recently Arrived and Earlier Immigrants by Nationality and All Natives

	Model 1		Model 2	
	Coefficient	**Standard Error**	**Coefficient**	**Standard Error**
Constant	0.437***	(0.023)	0.428***	(0.023)
Female	-0.367***	(0.011)	-0.367***	(0.011)
Age 25-34	-0.031	(0.020)	-0.030	(0.020)
Age 35-44	-0.170***	(0.022)	-0.169***	(0.022)
Age 45-54	-0.176***	(0.023)	-0.175***	(0.023)
Age 55-59	-0.513***	(0.026)	-0.511***	(0.026)
Age 60-64	-0.936***	(0.027)	-0.934***	(0.027)
Married	0.059***	(0.014)	0.059***	(0.014)
Widowed	0.034	(0.039)	0.033	(0.039)
Divorced	-0.044*	(0.026)	-0.044*	(0.026)
Secondary	0.460***	(0.015)	0.461***	(0.015)
Post-Secondary	0.594***	(0.021)	0.596***	(0.021)
Third-Level Non Degree	0.899***	(0.021)	0.900***	(0.021)
Third-Level Degree and Higher	1.106***	(0.019)	1.107***	(0.019)
Student	-1.386***	(0.026)	-1.386***	(0.026)
Border/Midland/Western Region	-0.061***	(0.012)	-0.061***	(0.012)
UK Recently Arrived	-0.650***	(0.090)	-0.583***	(0.121)
EU-13 Recently Arrived	-0.154*	(0.082)	-0.262**	(0.116)
EU-NMS Recently Arrived	0.348***	(0.041)	0.421***	(0.053)
Other Recently Arrived	-0.303***	(0.052)	-0.240***	(0.072)
UK Earlier Immigrants	-0.270***	(0.038)	-0.311***	(0.054)
EU-13 Earlier Immigrants	0.039	(0.064)	0.075	(0.097)
EU-NMS Earlier Immigrants	0.153***	(0.031)	0.386***	(0.053)
Other Earlier Immigrants	-0.207***	(0.032)	-0.164***	(0.050)
Year 2009	-0.155***	(0.010)	-0.140***	(0.011)
UK Recently Arrived*Year	-	-	-0.149	(0.182)
EU-13 Recently Arrived*Year	-	-	0.213	(0.163)
EU-NMS Recently Arrived*Year	-	-	-0.179**	(0.082)
Other Recently Arrived*Year	-	-	-0.133	(0.104)
UK Earlier Immigrants*Year	-	-	0.084	(0.076)
EU-13 Earlier Immigrants*Year	-	-	-0.067	(0.129)
EU-NMS Earlier Immigrants*Year	-	-	-0.368***	(0.065)
Other Earlier Immigrants*Year	-	-	-0.074	(0.064)
Observations	70,651		70,651	
Pseudo R2	0.1400		0.1405	

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A6: Male and Female Probit Models of Employment with Immigrant Status Variable (Coefficient Results)[16]

	Specification 1			Specification 2		
	(1) Male Model	(2) Female Model	(3) Difference between Models	(1) Male Model	(2) Female Model	(3) Difference between Models
Constant	0.353***	0.269***	-0.084*	0.343***	0.261***	-0.081*
	(0.031)	(0.031)	(0.044)	(0.032)	(0.031)	(0.044)
Age 25-34	0.029	-0.090***	-0.119***	0.031	-0.089***	-0.120***
	(0.028)	(0.028)	(0.040)	(0.028)	(0.028)	(0.040)
Age 35-44	-0.153***	-0.236***	-0.082*	-0.152***	-0.234***	-0.083*
	(0.032)	(0.031)	(0.044)	(0.032)	(0.031)	(0.044)
Age 45-54	-0.300***	-0.156***	0.144***	-0.298***	-0.155***	0.144***
	(0.034)	(0.032)	(0.046)	(0.034)	(0.032)	(0.046)
Age 55-59	-0.641***	-0.501***	0.140***	-0.640***	-0.500***	0.140***
	(0.039)	(0.036)	(0.053)	(0.039)	(0.036)	(0.053)
Age 60-64	-1.124***	-0.896***	0.228***	-1.123***	-0.895***	0.228***
	(0.039)	(0.037)	(0.054)	(0.039)	(0.037)	(0.054)
Married	0.512***	-0.287***	-0.799***	0.512***	-0.287***	-0.798***
	(0.021)	(0.019)	(0.029)	(0.021)	(0.019)	(0.029)
Widowed	0.235***	-0.200***	-0.435***	0.236***	-0.201***	-0.436***
	(0.080)	(0.046)	(0.092)	(0.080)	(0.046)	(0.092)
Divorced	-0.035	-0.149***	-0.114**	-0.035	-0.149***	-0.114**
	(0.043)	(0.033)	(0.054)	(0.043)	(0.033)	(0.054)
Secondary	0.486***	0.435***	-0.051*	0.486***	0.435***	-0.051*
	(0.022)	(0.021)	(0.030)	(0.022)	(0.021)	(0.030)
Post-Secondary	0.543***	0.611***	0.068	0.543***	0.611***	0.068
	(0.033)	(0.028)	(0.043)	(0.033)	(0.028)	(0.043)
Third-Level Non-Degree	0.790***	0.927***	0.137***	0.790***	0.926***	0.137***
	(0.034)	(0.027)	(0.044)	(0.034)	(0.027)	(0.044)
Third-Level Degree and Higher	0.966***	1.144***	0.178***	0.966***	1.144***	0.178***
	(0.028)	(0.025)	(0.038)	(0.028)	(0.025)	(0.038)
Student	-1.504***	-1.408***	0.096*	-1.504***	-1.407***	0.097*
	(0.039)	(0.036)	(0.053)	(0.039)	(0.036)	(0.053)
Border/Midland/Western Region	-0.092***	-0.043***	0.048*	-0.091***	-0.043***	0.048*
	(0.019)	(0.016)	(0.025)	(0.019)	(0.016)	(0.025)
Immigrant	0.015	-0.136***	-0.150***	0.087**	-0.073**	-0.161***
	(0.025)	(0.023)	(0.033)	(0.036)	(0.032)	(0.048)
Year 2009	-0.293***	-0.066***	0.227***	-0.276***	-0.053***	0.223***
	(0.016)	(0.014)	(0.021)	(0.017)	(0.015)	(0.023)
Immigrant*Year2009	-	-	-	-0.132***	-0.120***	0.011
	-	-	-	(0.048)	(0.044)	(0.065)
Observations	31,813	38,838	70,651	31,813	38,838	70,651
Pseudo R2	0.160	0.132	0.152	0.160	0.132	0.153

Note: Standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

[16] Marginal effects are available from the authors on request.

Table A7: Male and Female Probit Models of Employment with Nationality Status Variables (Coefficient Results)[17]

	Specification 1			Specification 2		
	(1) Male Model	(2) Female Model	(3) Difference between Models	(1) Male Model	(2) Female Model	(3) Difference between Models
Constant	0.317***	0.229***	-0.088**	0.303***	0.221***	-0.082*
	(0.032)	(0.031)	(0.045)	(0.032)	(0.031)	(0.045)
Age 25-34	0.030	-0.076***	-0.107***	0.034	-0.075***	-0.109***
	(0.028)	(0.028)	(0.040)	(0.028)	(0.028)	(0.040)
Age 35-44	-0.125***	-0.202***	-0.077*	-0.126***	-0.200***	-0.075*
	(0.032)	(0.031)	(0.045)	(0.032)	(0.031)	(0.045)
Age 45-54	-0.277***	-0.125***	0.152***	-0.276***	-0.124***	0.152***
	(0.034)	(0.032)	(0.047)	(0.034)	(0.032)	(0.047)
Age 55-59	-0.612***	-0.467***	0.145***	-0.610***	-0.466***	0.145***
	(0.039)	(0.036)	(0.053)	(0.039)	(0.036)	(0.053)
Age 60-64	-1.093***	-0.860***	0.232***	-1.089***	-0.859***	0.231***
	(0.040)	(0.038)	(0.055)	(0.040)	(0.038)	(0.055)
Married	0.515***	-0.286***	-0.802***	0.517***	-0.286***	-0.804***
	(0.022)	(0.019)	(0.029)	(0.022)	(0.019)	(0.029)
Widowed	0.249***	-0.199***	-0.448***	0.251***	-0.200***	-0.451***
	(0.080)	(0.046)	(0.092)	(0.080)	(0.046)	(0.092)
Divorced	-0.030	-0.150***	-0.120**	-0.032	-0.150***	-0.118**
	(0.043)	(0.033)	(0.054)	(0.043)	(0.033)	(0.054)
Secondary	0.501***	0.446***	-0.055*	0.503***	0.446***	-0.057*
	(0.022)	(0.021)	(0.030)	(0.022)	(0.021)	(0.030)
Post-Secondary	0.554***	0.623***	0.070	0.557***	0.624***	0.067
	(0.033)	(0.028)	(0.043)	(0.033)	(0.028)	(0.043)
Third-Level Non-Degree	0.810***	0.945***	0.135***	0.813***	0.945***	0.132***
	(0.035)	(0.027)	(0.044)	(0.035)	(0.027)	(0.044)
Third-Level Degree and Higher	1.001***	1.166***	0.165***	1.003***	1.167***	0.164***
	(0.029)	(0.025)	(0.038)	(0.029)	(0.025)	(0.038)
Student	-1.465***	-1.373***	0.092*	-1.463***	-1.373***	0.090*
	(0.039)	(0.036)	(0.053)	(0.039)	(0.036)	(0.053)
Border/Midland/Western Region	-0.088***	-0.042***	0.046*	-0.089***	-0.042***	0.046*
	(0.019)	(0.016)	(0.025)	(0.019)	(0.016)	(0.025)
UK	-0.318***	-0.355***	-0.037	-0.418***	-0.325***	0.094
	(0.053)	(0.048)	(0.072)	(0.075)	(0.066)	(0.100)
EU-13	0.108	-0.161**	-0.269***	-0.095	-0.080	0.015
	(0.079)	(0.067)	(0.104)	(0.117)	(0.097)	(0.152)
EU-NMS	0.275***	0.139***	-0.136***	0.576***	0.219***	-0.356***
	(0.037)	(0.036)	(0.051)	(0.060)	(0.051)	(0.079)
Other Countries	-0.178***	-0.313***	-0.135**	-0.161***	-0.257***	-0.096
	(0.042)	(0.039)	(0.057)	(0.062)	(0.057)	(0.084)
Year 2009	-0.295***	-0.065***	0.230***	-0.276***	-0.053***	0.223***
	(0.016)	(0.014)	(0.021)	(0.017)	(0.015)	(0.023)
UK*Year2009	-	-	-	0.198*	-0.063	-0.261*
	-	-	-	(0.106)	(0.096)	(0.143)

[17] Marginal effects are available from the authors on request.

Table A7: continued

	Specification 1			Specification 2		
	(1) Male Model	(2) Female Model	(3) Difference between Models	(1) Male Model	(2) Female Model	(3) Difference between Models
EU-13*Year2009	-	-	-	0.355**	-0.156	-0.511**
	-	-	-	(0.158)	(0.133)	(0.207)
EU-NMS*Year2009	-	-	-	-0.504***	-0.155**	0.349***
	-	-	-	(0.075)	(0.070)	(0.102)
Other Countries*Year2009	-	-	-	-0.033	-0.102	-0.069
	-	-	-	(0.081)	(0.076)	(0.111)
Observations	31,813	38,838	70,651	31,813	38,838	70,651
Pseudo R2	0.163	0.134	0.155	0.165	0.135	0.156

Note: Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

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