The Labour Market Outcomes of Atypical Employment in Ireland and Denmark

Vanessa Gash

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Abstract

This paper examines whether atypical workers, temporary contract and part-time workers, experience similar working environments in two countries which share similar rates of market flexibility but differ in their welfare provision: Ireland and Denmark. Using the European Community Household Panel Survey, 1995-1999, we compare the job quality of atypical workers as well as their poverty risks. Irish part-time workers were found to be considerably more disadvantaged than Danish part-time workers, while temporary workers in both countries experienced poor work quality. The poverty risks of atypical workers were found to be buffered by the presence of a standard contract worker within the home.

Key Words
Temporary Contracts, Part-Time Work, Poverty Risks

Correspondence
Vanessa Gash, Max Planck Institute for Human Development, Lentzealle 94, D-14195 Berlin. Email: gash@mpib-berlin.mpg.de

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1. Introduction

Ireland and Denmark are two small countries with comparatively small economies both of whom are operating with success within the European Union. The Irish success story has received considerable attention in the popular press (Economist 2004) and in academic debate (Nolan, O'Connell and Whelan 2000; Auer 2000). Ireland's economic growth rates have been dramatic, given its previous track record (O'Connell 1999). Denmark has also been identified as an EU success story (Cox 1998; Torfing 1999) at a time when other European economies are struggling. Both countries share low unemployment rates, have ever-increasing GDP and while they are both described as flexible markets (OECD 2002) they differ in their systems of welfare provision, with the Danish model upholding a social democratic welfare state, while in Ireland the welfare state has been characterised as liberal.

This paper seeks to establish the implications of these different institutional environments for the market outcomes of atypical workers: temporary workers and part-time workers. Atypical workers, more often than not, are regarded as labour market outsiders who suffer a series of disadvantages as a result of their outsider status (Hirsch 2005; Kalleberg, Reskin and Hudson 2000). Yet, temporary and part-time jobs are considered to be an important means of providing market flexibility for economies in an age of globalisation. This paper analyses differences in the job quality and poverty risks of atypical workers, to establish whether atypical workers are marginalised or integrated within these two flexible economies.

The structure of the paper is the following: We begin with an analysis of the policies and the macro-economic context of both countries and present our hypotheses (Section 2). Section 3 presents the data used and the methodologies applied. We begin our analysis in Section 4 by presenting the wage penalties/premiums associated with atypical employment as well as the low pay risks of temporary and part-time workers. Section 5 examines whether atypical workers receive similar amounts of training from their employers, while Section 6 reveals the household context of atypical employment as well as their poverty risks. We conclude with a discussion of our main findings.

2. The Comparison

We chose to compare the implications of atypical employment in Ireland relative to Denmark for the following reasons. First, both countries *share* the following characteristics, making them suitable for comparison. They are both small in size (Ireland has a population of 4 million while the Danish population is somewhat larger at 7 million), with small economies (Irish GDP in 2002 was 0.06% of the largest European economy, Germany, while the Danish economy was 0.09% of the German economy[1]), and both operate within the European legislative and economic context. Ireland and Denmark also share similar employment protection legislation (EPL) and are both regarded as examples of flexible employment protection systems (Grubb and Wells 1993; OECD 1999, 2004). Relative to the EPL of other European economies, Ireland and Denmark, alongside the UK (not analysed here), stand out as disproportionately flexible, employers being able to hire and fire workers with relative ease.[2] Flexible EPL is expected to create a more open market, decreasing uncompensated differentials between market insiders and outsiders. Finally, there are similarities between the Danish centrally coordinated market economy and the Irish social partnership agreements, with both countries managing market and social change through social partners.

We also chose to compare Ireland and Denmark because they *differ* considerably in their welfare provision and in their childcare policy. The Danish welfare state, typically defined as social democratic (Esping-Andersen 1990), provides more generous rates of social insurance and assistance than the Irish state. While the Irish welfare state, under social partnership agreements, is committed to maintaining unemployment benefits at levels less punitive than is typical of liberal regimes (Ó Riain and O'Connell 2000), Danish expenditure in unemployment benefit per person is approximately twice that of Irish expenditure (Gallie and Paugam 2000, p. 8).

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[1] The German economy is the largest economy in the European Union, reporting a GDP of 2,107,300 million euros in 2002. The two second largest economies in the EU are the UK and France, representing economies which are, respectively, 0.79 and 0.76 of the German economy; own calculations using Eurostat data (2005).

[2]Components of EPL for both Denmark and Ireland are described in greater detail in the appendix.

In addition to this, Ireland has been comparatively laissez-faire in its policies towards the integration of women to paid employment and this is most notable in its childcare provision. In a recent comparison of state expenditure in pre-primary education, Ireland had the lowest expenditure, while Danish expenditure was the highest both as a percentage of per capita GDP and in absolute levels of income spent per child (OECD 2001). Compounding this dearth in public childcare is the absence of affordable private childcare in Ireland (Goodbody et al 1998). In Denmark, where 74% of children below school-going age are in public childcare, the cost of childcare is indexed to income in order to ensure its affordability (Rostgaard and Fridberg 1998). The inability of worker-carers[3] to purchase care within the market is likely to produce inequalities between worker-carers and those without similar responsibilities. It will be interesting to establish whether these differences, in welfare provision for the unemployed and for childcare for worker-carers, will be reflected in differences in labour market outcome between the countries. Before we present our hypotheses we provide a brief review of the incidence of atypical employment and the macro-economic context of both countries.

2.1 Incidence of Atypical Employment and Macro-Economic Context

The period from 1995 to 1999, our data window, is characterised by strong and consistent economic growth for Ireland and, to a lesser extent, Denmark. This economic growth is reflected in the employment and unemployment rates of both countries during the period. The Irish employment rate went from 66.3 to 73.5% between 1995 and 1999, for men, and from 41.2 to 51.3% for women (OECD 1995, 1999). In Denmark employment growth was not as strong though the levels of employment were considerably higher, especially for women. Employment rates for Danish men went from 80.7 to 81.2%, while for women they increased from 67% in 1995 to 71.6% in 1999. While Irish rates of unemployment converged with those of Denmark by 1999, they were 5 percentage points higher in 1995. Both countries have higher unemployment rates for women (See Table A1 in the appendix).

Ireland and Denmark are unusual in that they both share a lower and decreasing incidence of temporary work relative to the European Union average (Figure A1 in appendix). In Denmark the incidence decreased from 12% to 10% of all employees, while in Ireland it decreased from 10% to 4% between1995 and 1999. That Irish and

[3]The term worker-carer refers to workers who engage in both paid employment and unpaid care within the home.

Danish employers have little appetite for temporary contracts is likely to be a function of the flexible economies in which they find themselves. In both countries women are slightly more likely to be temporary contract workers, with temporary employment accounting for between 12-6% of Irish female employment over the period, and 12-10% of all Danish female employment (Eurostat 2000).

The countries differ in their share of part-time employment, however, with Danish rates above the EU average and Irish rates below this average (Figure A2 in the appendix). Nonetheless, as has been noted elsewhere (O'Connell 1999), one of the features of the Celtic Tiger has been a large increase in the proportion of workers working part-time, with Irish rates converging with those of the EU by the end of our observation period. While we find a slight decrease in the proportion of part-time workers in Denmark, this decrease is the tail-end of a much more dramatic decline which occurred in the early 1980s. In 1983, 45% of Danish working women were engaged in part-time employment, with this figure dropping to 22% by 1999 (OECD 2000). Finally, we note that part-time employment is predominantly female, in both Ireland and Denmark.

2.2 Hypotheses

1. We expect the flexibility of employment law in both countries to reduce uncompensated differentials between atypical and standard contract workers.[4]
2. 2 However, we expect less evidence of labour market disadvantage in Denmark, as a result of the greater strength of Danish trade unions.[5] So, while both countries share in the fruits of coordinated partnership agreements, Danish trade unions appear to be more powerful within these agreements by virtue of their relative size as well as the character of their negotiations.[6] This leads us to expect lower rates of labour market disadvantage amongst Danish atypical workers, with Danish trade unions in a better position to protect market outsiders.

[4] Previous research (Gash 2004; Polavieja 2001) have found rigid EPL to be particularly problematic for atypical workers, with employers more likely to use atypical employment as a low cost labour option in these instances.

[5] Danish trade union density was 78% over the mid to late 1990s, while Irish trade unionism was comparatively weaker at 41%. Nonetheless the concentration of trade union membership is said to differ considerably in Ireland, with high trade union membership in the public sector (http://www.eurofound.eu.int/emire/IRELAND/UNIONDENSITY-IR.html).

[6] While Danish trade unions are more powerful, in that they have higher trade union density, they are also described as both highly conciliatory and voluntarist (Esping-Andersen and Regini 2000).

3. We expect less evidence of female disadvantage in Denmark and attribute this to both the extensive public childcare system as well as the centrality of female employment issues in Danish trade unionism. Indeed, until recently, 2004, Denmark was the only country which had a female only trade union: Kvindeligt Arbejderforbund i Danmark, KAD.[7] We also note the higher female employment rates in Denmark, with female employment issues more likely to take centre stage when a higher proportion of workers are women.
4. Finally, we anticipate the Danish welfare regime to be more successful at protecting workers from poverty risk as a result of their higher rates of unemployment benefit.

[7] The KAD has recently voted to merge with the general workers' union (Sid), resulting in the merger of two large unskilled workers' unions.

3. Data and Methodology

This study is based on analyses of five waves of the European Community Household Panel (ECHP) Survey. The ECHP is a standardised comparative cross-national survey conducted in the Member States of the European Union under the auspices of the Statistical Office of the European Communities (Eurostat). The samples were drawn by each member state as simple random samples, with information collected from respondents in each panel year (1995-1999). While the Irish component of the ECHP is based on the Living in Ireland Surveys, the two datasets do not replicate each other perfectly. This is most pertinent to our analysis of wages and poverty risks, with missing income data imputed in a different manner by Eurostat than those done by the Economic and Social Research Institute (ESRI) in Ireland. While slight variation in the poverty trends reported by the Living in Ireland Survey and the Irish component of the ECHP have been noted elsewhere (Whelan et al 2003, p. 16), both datasets are regarded as robust samples of Irish households.

The statistical techniques applied sought to control for the panel structure of the data. The wage equations combine pooled ordinary least squares (OLS) and fixed effects (FE) regression models. Pooled ordinary least squares are used both to maximise on sample size and to increase the sampling pool of workers analysed, with workers in intermittent periods of employment more likely to be captured in the data over time than if one year of the panel was used. This will be particularly beneficial to the current analysis given atypical workers' increased unemployment and inactivity risk (Gash 2005). The second technique, fixed effects, was applied to test for individual unobserved time-constant heterogeneity. Failure to account for unobserved individual effects, such as motivation, may result in parameter bias. For example, the residual penalty associated with part-time employment could be attributed to part-time workers' (unmeasured) lower motivation rather than to discriminatory pay practices. In an effort to control for unobserved heterogeneity a fixed effects model on time-demeaned data[8] is run. Essentially the fixed-effect specification removes the unobserved individual component of the error term prior to estimation. The specification of the fixed effects model with time-demeaning is the following:

[8] The term 'time-demeaned data' is taken from the literature describing fixed effects estimation (Wooldridge 2003, p. 462). The term probably has its origins in the fixed effect modal being a mean across time, minus a time constant unobservable.

EQ 1: $y_{it} = \beta_1 \mathbf{X}_{it} + a_i + u_{it}, t = 1, 2, 3, 4, 5, 6.$

Where y_{it} is the logged gross hourly wages for individual *i* at time *t*, and β is the coefficient for contract type, or working-time for individual *i* at time *t*. Where *t* corresponds to the 6 years of the ECHP used, a_i and u_{it} are the time constant and time-variant composite error terms. The fixed effects transformation essentially presents the mean effect of the time variant components in equation 1, whilst subtracting out the time constant effects. This results in the following time-demeaned specification:

EQ 2: $\overline{Y}_{it} = \beta_1 \overline{X}_{it} + \bar{u}_{it}, t = 1, 2, 3, 4, 5, 6.$

Where $\overline{Y}_{it}$ is the mean value of the logged gross hourly wages for individual *i* at times *t*, and β is the coefficient for the mean value of contract type, or working-time for individual *i* at times *t*. Note that in equation 1 the a_i for the individual is fixed for each time period. This is a key assumption of this model and allows the unobserved fixed-effect to be subtracted out of the model when we transform the time-varying covariates into their time invariant averages (equation 2). The fixed-effects estimator allows for arbitrary correlation between itself and the explanatory variables in each time period. Because of this correlation any independent variables which are time constant will get subtracted out of the equation. While this would normally be considered to be a significant problem in the estimation of most wage equations, it is nonetheless possible to introduce time constant variables as interactions with variables which do vary overtime (Wooldridge 2003; Wooldridge 2002).

It is of course also possible to control for individual heterogeneity through the application of a random effects model, where the assumption is of no correlation between the individual component of the error term and explanatory covariates in each time period (Baltagi 2001). In an effort to reveal whether the fixed-effects specification was superior to a random-effects specification a Hausman (1978) test was run on the logged wages data. For both Ireland and Denmark, we found the time constant component of the error term to be correlated with the independent variables, requiring a fixed-effects specification for correct parameter estimation (Wooldridge 2003).

For our dichotomous outcomes, low pay and access to training, we applied random effects logistic regression models (Allison 1999). These control for randomly distributed components of the individual error term. The application of a fixed-effects type estimation on our dichotomous dependent variables was not possible as the time-demeaning of the dependent variable could only be done for individuals with different responses on their dependent variable across time. This limited our sample substantially.

The statistical estimations were run in Stata Special Edition 8 and in all instances controlled for clustering on the identification number of each respondent; this specifies that individuals are independent between identification numbers, but not necessarily within them. The specification of clustering on identification number within Stata software results in an automatic calculation of robust standard errors. All statistical estimations are restricted to a sample of employees, aged 18 to 64 years with no missing information on working-time or contract status.

4. Wages and Low Pay

This section analyses two inter-related research questions. The first identifies whether atypical workers are disproportionately exposed to low pay, while the second establishes whether there is a wage penalty for atypical work. If atypical workers are found to be in receipt of lower pay and/or to earn a wage penalty once we control for observed and (a portion of) unobserved covariates, it suggests that atypical workers either continue to have some unmeasured characteristic that warrants their lower hourly pay, or that they suffer a wage penalty by virtue of their outsider status.

We define low pay as current gross hourly earnings below 60% of the national median wage. The cut-off was calculated separately for each panel year. We took a cut-off of 60% to correspond with the financial poverty cut-off applied. In Ireland the monetary equivalent in 1995 was €4.97. In Denmark the equivalent is approximately twice that, at €9.31. The analysis of wages is based on logged gross hourly pay. Temporary contract workers are defined as all employees, with no missing values on the variable measuring contract status, who indicated that they were not permanent contract workers. Part-time workers are defined as those who work less than 30 hours a week in their main job, with those who self-defined as full-time removed from the part-time category. The part-time category excludes those working marginal part-time (<15 hours) – they tend not to self-define as employed and do not answer many of the employment related variables pertinent to the analysis here. It should be noted that previous analyses have found marginal part-time workers to be a distinct category of part-time worker (O'Connell and Gash 2003).

The covariates included in the models are expected to account for a portion of workers' wage penalties/premiums. These include: work experience and work experience squared, to capture non-liniarities in the effect. We expect this variable to capture the effect of probationary contract status net of contract type. Age was also introduced to the models as a categorical variable to capture some of the differential rates of pay by seniority and work experience. The variables measuring workers' human capital measure the highest level of education achieved in the first year of the sample, 1995, and was included as a categorical variable, with third level education excluded as the reference category. These categories correspond to

ISCED[9] codes: 5-7 (third level education) 3-4 (upper secondary education) 0-2 (lower secondary education).

A second human capital variable was introduced to the model, testing whether the respondent had any formal skills training.[10] The introduction of variables measuring human capital should allow us to establish whether more educated workers receive wage premiums, and whether atypical workers' lower wages are a function of their lower rates of education or not. A variable measuring labour market attachment is introduced, allowing us to identify whether discontinuous labour force attachment is penalised. There are eight categories in this variable comprising those who were: continuously employed (12 months in employment), continuously unemployed (12 months in unemployment), continuously in education (12 months in education), continuously inactive (12 months in housework or other economically inactive category); the next 3 categories consists of those who spent the majority of their time, that is between 6 months and 11 months, in either employment or unemployment and finally there is a residual category of those who were mobile across all these categories and had no majority status. This variable was measured per annum rather than through time. The labour market sector of the respondent is also included in the models, given expectations that private sector employees are likely to earn a wage premium (Gornick and Jacobs 1996). Occupational status is included in the models to control for variations in pay between different grades of worker. The occupational classification used is based on the ISCO[11] occupational categorisation. We also include dummy variables for each year of the panel to control for time dependence in remuneration.

Table 1 presents the proportion of workers in receipt of low pay for the pooled sample; we pooled the sample once we established a similar risk of being low paid in each panel year.[12] We also performed a sensitivity analysis of the impact of different cut-offs on the distribution of low pay by employment type (Table A3 in the

[9] International Standard Classification of Education (ISCED). This classification was designed in the early 1970s by UNESCO in an attempt to provide a calibrated educational classification system that can be used for comparative analyses. The classifications are frequently updated to capture changes in national education systems.

[10] The precise question asked was: Have you had formal training or education that has contributed to your present work? Y/N/NA.

[11] ISCO stands for International Standard Classification of Occupation. It is a classification system of occupations managed by the International Labour Office to ensure comparability in cross-national analysis.

appendix). While larger cut-offs resulted in larger sub-populations classified as low paid we did not find much evidence of large between contract or working-time variation in low pay risk as a result of different specifications of low pay. Table 1 reveals greater evidence of low pay in Ireland than in Denmark and also reveals a greater low pay risk for Irish women, 22%, than for Irish men, 11%. In Denmark, we find relative parity in men and women's low pay risk and also find the low pay risk to be much smaller. However, in both countries, temporary contract workers are also the most exposed to low pay, with Irish female temporary contract workers most at risk: 40%.

Male and female part-time workers are also found to be disproportionately exposed to low pay in each country. We find Danish women part-timers to exhibit both the lowest risk of low pay, of all atypical workers, and the smallest standard contract worker/atypical worker differential, with 4% of Danish women on full-time hours exposed to low pay, relative to 7% of women working part-time.

Table 1: Proportion of Employees in Receipt of Low Pay, Less than 60% of Median Hourly Wages, all Employees between 18-64 Years

		MEN	WOMEN
		%	%
IRELAND	Permanent	8.13	16.89
	Temporary	30.01	39.60
	Full-time	10.46	18.60
	Part-time	38.17	35.98
	All	11.22	22.32
	N	(775)	(1158)
DENMARK	Permanent	1.48	2.64
	Temporary	12.80	14.63
	Full-time	2.41	3.58
	Part-time	19.87	6.69
	All	2.83	4.07
	N	(178)	(238)

Table 1 highlights the proportions of workers in receipt of low pay and while we establish atypical workers to earn lower wages than standard contract workers these low wages may be a function of atypical workers' lower educational level or the

[12] Table A2 in the appendix presents the low pay risk for each panel year.

concentration of atypical employment in certain low pay sectors such as the service industry.

Our next analysis aims to identify the extent to which atypical workers remain exposed to low pay, after we control for observed and unobserved difference. We run a series of random effects models on a worker's risk of being low paid. We run the models separately for each country but introduce the dummy variables for contract type and working-time to establish whether there is a confounding effect between these variables, i.e. whether the low pay risk associated with part-time employment, for instance, is a function of the high proportion of part-time workers who are also temporary contract workers, and *vice versa*.

Table 2 reveals that even after we control for a series of covariates typically associated with the receipt of low pay, Irish temporary contract workers and part-time workers are still at higher risk of low pay. Table 2 also establishes that there is no interaction effect between part-time work and temporary contract work in Ireland.

In Denmark, we find that temporary contract workers remain at risk of low pay, after controlling for observables, but find part-time workers no longer at risk once we introduce an interaction term to the model. This suggests that Danish part-time workers' lower pay is a function of the temporary contracts held by a portion of part-time workers. Table 2 also reveals the different subsets of the labour market who are more exposed to low pay. We find that Irish women are considerably more likely to be in receipt of low pay than Irish men, while there is no such dynamic in Denmark.

Educational level has the predicted impact: in both countries those with less than third level qualifications are more exposed to low pay, while workers with formal training are also less likely to be in receipt of low pay. Workers' labour force attachment, that is the form and concentration of their labour market experience in the years prior to their current job start, are also predictive of low pay – workers who have spent time in education and labour market inactivity are more likely to earn lower wages. Finally, we find fluctuations in the risk of being low paid across time in Ireland, where we find a decreasing risk of low pay relative to 1995, while in Denmark the risk is fairly constant across time.

Table 2: Random Effects Logistic Regression of the Risk of Experiencing Low Pay, all Employees between 18-64 Years

	IRELAND		DENMARK	
	Coeff.	P>|z|	Coeff.	P>|z|
Temporary Contract	0.670	***	1.571	***
Part-time	0.663	**	-0.062	
Temporary*Part-time	0.287		1.045	~
Demographic Characteristics				
Women	1.195	***	0.248	
18-24yrs (ref 40-54 years)	0.708		1.577	*
25-29yrs	-0.086		0.515	
30-39yrs	-0.091		-0.134	
55yrs+	-0.096		0.136	
Human Capital/Education				
Upper Secondary Level Education	1.056	***	1.159	**
Lower Secondary Level Education (ref Third Level Education)	2.310	***	2.044	***
Formal Training	-0.381	**	-1.037	***
Work experience	-4.906		-0.906	
Work experience sq	7.336	**	2.705	
Labour Force Attachment				
Continuously Unemployed (ref Continuously Employed)	0.060		-1.987	~
Continuously in Education	1.406	**	1.567	**
Continuously Inactive	1.349	***	2.311	*
Mover thru Employment	0.437	*	0.299	
Mover thru Unemployment	0.597	~	-0.544	
Mover Other	1.116	***	1.248	**
Occupational Group				
Lower Prof (ref Higher Professional)	-0.303		0.801	
Clerical	1.534	***	2.017	***
Skilled manual	0.206	***	1.058	*
Manual	1.302	***	1.460	*
Public Sector (ref Private Sector)	2.559	***	-0.353	
panel year 1996	-0.030		0.475	~
panel year 1997	-0.500	**	0.468	
panel year 1998	-0.270	~	0.633	*
panel year 1999	-0.695	***	0.242	
Constant	-8.416	***	-9.396	***
Model Summary				
Observations	10,351		9,712	

Key: p<0.10=~ p<0.01= * , p<0.001= ** , p<0.0001= ***

While Table 2 controls for the probability that repeat observations of one individual may be biasing the results, and distinguishes the risk of low pay for different time periods, it does not reveal whether atypical workers are at risk of repeat spells of low pay. It may be that the flexibility of atypical employment allows workers to leave low pay with greater ease. On the other hand, it might be that temporary and part-time jobs are traps that are difficult to move on from, which would suggest that atypical workers are more at risk of extended periods of low pay. Table 3 tests these hypotheses by looking at differences between workers who have never been low paid, relative to those who have been low paid for one year, two years and three years or more, using a multinomial logistic regression.[13] The complete model, which controls for a series of covariates, is presented in the appendix (Table A4).

We find that in Ireland temporary and part-time workers are more likely to be low paid for each level of the dependent variable: those who have been low paid once during our observation window through to the long-term low paid (those who have been low paid for three years or more). Women are also equally likely to be low paid for short and long periods. It is notable that there is an increase in the coefficient for each increment, suggesting a greater tendency for women to be trapped in low pay, relative to Irish men.

In Denmark, temporary workers are at greater risk of being lower paid for short and longer periods, though the tendency to be long-term low paid is only significant at the .10 level. Danish part-time workers, however, are not disproportionately likely to be low paid for longer periods of time. This suggests that Danish part-time workers move out of low pay faster than their full-time counterparts.

[13] While it would have been better, in principle, to fit a random effects ordinal regression, the model would not converge for Ireland. While the model did converge for Denmark, there were very strong differences between the levels of the dependent variable, suggesting that the parallel regression assumption was violated and that the assumptions which underline the model were consequentially wrong (Long, Freese and Stata Corporation 2001).

Table 3: Multinomial Logistic Regression, of the Relative Risks of Being Long-Term Low Paid (three years or more), all Employees between 18-64 Years

	IRELAND		DENMARK	
	Coef.	P>|z|	Coef.	P>|z|
Once Low Paid versus Never Low Paid				
Temporary	0.655	***	0.727	***
Part-time	0.573	***	0.304	*
Women	0.569	***	0.582	**
Twice Low Paid versus Never Low Paid				
Temporary	0.797	***	0.785	**
Part-time	0.752	***	0.031	
Women	0.772	***	0.179	
Three times+ Low Paid versus Never Low Paid				
Temporary	0.525	***	0.472	~
Part-time	0.984	***	0.248	
Women	0.883	***	-0.004	

Key: p<0.10=~ p<0.01= * , p<0.001= ** , p<0.0001= ***

We have established that atypical workers in Ireland and temporary workers in Denmark are clustered at the lower end of the earnings distribution, but what about earnings at the mean? Are atypical workers earning a wage penalty relative to standard contract workers with similar characteristics?

Table 4 presents the mean gross hourly wages of atypical workers by gender and country. The wages, which are recorded in the national currency units in the ECHP, have been converted to comparable units using the purchasing power parity rates provided by Eurostat. Eurostat[14] regard the converted national currency data to reflect the worth of the Euro in real terms (Eurostat 2003, p.7). We find that temporary workers have lower hourly pay than permanent contract workers, in each country for both men and women. However, we find the wage discrepancy to be the largest for Irish men, with Irish male temporary workers earning, on average, €4.30 euro equivalents less per hour than permanent contract workers. We also note the lower earnings of women workers relative to male workers in each country, and while Danish workers are found to earn higher wages on average than Irish workers the male/female difference in earnings are similar in both Ireland and Denmark. In Ireland, women earn .84 of what men were found to earn, while in Denmark the proportion is somewhat higher at .87 (figures not shown). Table 4 also reveals part-time workers' lower gross hourly pay in both countries, though it is important to note

[14] Eurostat is the statistical office of the European Communities.

that Danish female part-time workers' earnings are very similar to those of full-time workers: 13.24 per hour versus 12.83 per hour, suggesting that part-time employment is not always poorly remunerated.

Table 4: Mean Gross Hourly Wages, all Employees between 18-64 Years

		MEN		WOMEN	
		mean	St.dev	mean	St.dev
IRELAND	Permanent	12.61	6.74	10.75	6.32
	Temporary	8.31	4.76	7.75	4.76
	Full-time	12.11	6.66	10.48	6.29
	Part-time	8.04	5.28	8.42	5.11
	All	12.00	6.66	10.04	6.12
	N	6,835		5,167	
DENMARK	Permanent	15.46	4.87	13.41	3.41
	Temporary	12.00	4.17	11.38	4.05
	Full-time	15.11	4.87	13.24	3.46
	Part-time	12.39	6.24	12.83	4.10
	All	15.06	4.92	13.17	3.57
	N	6,228		5,831	

Notes:
1. Hourly wages are measured in the national currency but have been converted here to equivalent units in accordance with annual nationally specific Purchasing Power Parities (PPP).
2. Unweighted data. Outliers above and below 0.5% of the distribution are excluded from both samples.

What Table 4 does not reveal is the extent to which the lower wages of atypical workers are a function of their individual attributes, such as their lower levels of education, or of their market position. For instance part-time workers' wages could be a function of the lower human capital of part-time workers. Table 5 controls for a series of covariates which could account for atypical workers' lower earnings.

Table 5 presents the coefficients relating to atypical employment for a multivariate pooled ordinary least squares (OLS) and a fixed-effects (FE) regression model. The OLS models were run with robust standard errors controlling for clustering within person years. In an effort to retain cases, whilst recognising that unbalanced panels may lead to over-representation of respondents who remained in the panel over time, the OLS models were run with weights which represent the inverse probability of remaining in the sample for the full 5 years. The FE models, which were run on the same sample, measure the wage penalty/premium associated with atypical

employment once we remove time constant individual heterogeneity. By presenting both sets of statistics, the OLS and the FE, we can reveal the portion of the coefficient which can be attributed to unobserved fixed effects such as unmeasured educational qualifications, worker ability and/or commitment. The complete models are presented in the appendix; each model is run with both contract type and working time and run separately for men and women (Tables A5.1a, 1b, 1c, 1d). Our analysis of wages does not include interaction terms of working-time and contract type as the variables were not significant. For the analysis in Table 5 we also exclude workers with less than two years of complete information on the variables of interest as FE models require at least two observations per person for time demeaning.

Table 5: Comparison of a Standard Pooled OLS Regression versus Fixed-Effects Regression, all Employees between 18-64 Years

			Pooled OLS (Eq.1)	P>|z|	FE Model (Eq.2)	P>|z|
Temporary Contract	**IRELAND**	MEN	-0.084	**	-0.033	*
		WOMEN	-0.163	***	-0.015	~
	DENMARK	MEN	-0.095	***	-0.039	***
		WOMEN	-0.051	***	-0.036	***
Part-Time Contract	**IRELAND**	MEN	-0.115	~	0.139	***
		WOMEN	-0.068	**	0.049	**
	DENMARK	MEN	-0.046	ns	0.072	**
		WOMEN	0.036	**	0.066	***

*Controls: age, work experience, work experience squared, educational level, job related training, labour force attachment, occupational level and industrial sector.
Key: p<0.10=~ p<0.01= * , p<0.001= ** , p<0.0001= ***

We find that atypical contract workers earn a wage penalty in the pooled OLS even after we control for observed characteristics such as educational level and occupation, and find this to be true of all types of atypical worker, for each country and for both men and women, with the one exception of female part-time employment in Denmark. Once we control for time-constant unobserved heterogeneity, the wage penalty associated with part-time employment becomes a wage premium, in Ireland for both men and women, and in Denmark for men only. This suggests that part-time workers' lower wages, at the mean, are a function of an unobservable, be it lower work commitment or skill level, and were we to control for this individual attribute part-time workers would in fact enjoy a wage premium.

Given the difference in the OLS and the FE specification of the model the theoretical implications of removing time constant individual heterogeneity requires elaboration. While the removal of unobserved individual heterogeneity is good econometrics as, in principle, it allows us to measure the impact of our observed covariates more precisely it is also problematic in so far as we are unable to explain what precisely we are removing from the model. It might be that the individual unobserved component is a characteristic facilitating the employer in his/her imposition of a lower wage, such as reticence, rather than a characteristic which affects productivity and therefore warrants lower pay.

We find no evidence of a similar dynamic for temporary contract workers, who are found to earn a penalty even after we control for individual heterogeneity. In this instance the removal of individual heterogeneity is not sufficient to remove the temporary worker wage penalty.

5. Employer-Provided Training

Here we reveal whether employers invest in their atypical contract workers through the provision of employer-provided training or whether, as is predicted in HRM theories (Geary 1992) and segmented market theories (Gordon, Edwards and Reich 1982), atypical workers are less likely to receive training as a result of their outsider status. Employer-provided training measures responses to the following question: 'Does your employer provide free or subsidised services or benefits to employees in any of the following areas?; the third benefit being 'education and training'.[15]

Table 6 presents the proportion of atypical workers in receipt of employer-provided training relative to those on standard employment contracts. The first finding of note concerns the relative paucity of employer-provided training in Ireland relative to Denmark, with 76% of all Danish men and 81% of Danish women in receipt of training, relative to 35% and 37% of Irish men and women. We also find, as expected, differences within countries by contract type and working-time, with temporary workers and part-time workers less likely to be in receipt of employer-provided training in each country and for both men and women. Table 7 tests the significance of the difference whilst controlling for a series of covariates.

The full models are presented in Tables A7a and A7b in the appendix. Here we find that female temporary workers, both Irish and Danish, remain less likely to receive training and also find this to be true of Danish male temporary workers. However, we also establish parity in receipt of training for Irish male temporary workers relative to permanent workers. Nevertheless, the percentage of permanent workers in receipt of training is quite low in Ireland, so while this contributes to relative equality between atypical and standard contract workers, Irish temporary workers are still disadvantaged at an absolute level relative to Danish temporary contract workers. Part-time workers in both countries are found to be considerably less likely to be in receipt of employer-provided training even in a model with controls for

[15] This variable is very different from that used in a recent paper by Arulampalam, Booth and Bryan (2004) where the variable measuring training should be interpreted as 'formal courses of instruction rather than on-the-job training' (2004, p.348). The precise wording of the variable is: 'Have you at any time since [the date of the year prior] attended a course in general or higher education/vocational training or education/a language course/other adult education?' The reported incidence of 'training' in the Arulampalam et al (ibid) report is 9% for Ireland and 42% for Denmark. The lower incidences of training in both cases is surprising, though perhaps attributable to self-defined activity status, with employees unlikely to claim they were in education when they self-conceive as employed. The variable used in the analysis presented here is part of a series of questions asked of employees only.

observed and unobserved heterogeneity. Employers, in both countries, clearly do not regard part-time workers as worthy of human capital investment.

Table 6: Proportion in Receipt of Employer-Provided Training, all Employees between 18-64 Years

		MEN	WOMEN
		%	%
IRELAND	Permanent	36.5	39.7
	Temporary	29.1	29.4
	Full-time	36.1	41.1
	Part-time	16.4	23.1
	All	35.5	37.2
	N	2,433	1,913
DENMARK	Permanent	79.8	83.6
	Temporary	49.8	62.9
	Full-time	77.0	83.5
	Part-time	43.3	68.5
	All	76.2	81.2
	N	4,788	4,735

Table 7: Random Effects Logistic Regression of receipt of Employer-Provided Training, all Employees between 18-64 Years

		MEN		WOMEN	
		Coeff	P>|z|	Coeff	P>|z|
IRELAND	Temporary	0.106	ns	-0.279	~
	Part-time	-1.252	**	-0.676	***
DENMARK	Temporary	-1.322	***	-0.969	***
	Part-time	-1.502	**	-0.995	**

*Controls: age, work experience, work experience squared, educational level, job related training, labour force attachment, occupational level and industrial sector.
Key: p<0.10=~ p<0.01= * , p<0.001= ** , p<0.0001= ***

6. Poverty Risks of Atypical Workers by Household Type

The poverty risks of atypical workers are investigated to identify whether atypical workers' aggregate low pay and temporary workers' wage penalty is compensated by other sources of household income. We classify households as financially poor if their current net monthly income falls below 60% of the national annual median.[16] This measure is a relative income poverty measure based on national average household income.

We begin this section by presenting the proportion of atypical workers by household type. First, we distinguish between the following household types: households with two adults, where we can assume some combined strategy of income generation and redistribution, households with one adult, and finally households classified as other in the ECHP, which are comprised of families where adult children are still living in the family home as well as shared adult accommodation. Second, the type of employment engaged in is also identified, with a distinction by contract type in our first typology and working-time in our second. Third, the number of non-employed within the household is also identified, with non-employment covering those who are in education, unemployed, retired, doing housework, or other economically inactive category. Table A8 in the appendix presents two typologies of working households for each country; Ireland is unusual in its high proportion of household types with more than two adult members, while Denmark has a higher incidence of households with one adult occupant. Table 8 below reveals the number of atypical workers by our working household typology to reveal whether atypical workers tend to be in households with another standard contract worker or not. In both Ireland and Denmark we find the vast majority of both temporary contract workers and part-time workers in households with another standard contract earner, suggesting that atypical workers are less likely to accept their posts without the security of another more stable earner in the household.

[16] While the figures presented here are aggregate figures for the 1994-1999 period the cut-off point was calculated for each panel year. The 1994 cut-off for Ireland was the equivalent of €284.51 net per month. The 1994 cut-off for Denmark was DKK5040 per month, which is the equivalent of €677.58 net per month.

Table 8: Distribution of Contract Type and Working-Time by Household Type

	IRELAND		DENMARK	
	Full-time	Part-time	Full-time	Part-time
	%	%	%	%
Full-time/Full-time	22.47	-	50.37	-
Full-time/Part-time	4.06	35.19	4.55	51.70
Part-time/Part-time	-	1.39	-	1.53
Full-time/non-employed	16.29	-	11.50	-
Part-time/non-employed	-	10.69	-	12.38
Lone Full-time worker	5.13	-	18.24	-
Lone Part-time worker	-	4.60	-	15.01
Minimum one part-time worker in multiple adult household	7.75	48.13	2.34	19.39
No part-time in multiple adult household	44.24	-	12.98	-
	Permanent	Temporary	Permanent	Temporary
	%	%	%	%
Permanent/Permanent	26.63	-	51.19	-
Permanent/Temporary	3.43	14.53	5.10	36.60
Temporary/Temporary	-	2.33	-	7.14
Perm/non-employed	16.85	-	11.33	-
Temp /non-employed	-	11.01	-	13.21
Lone Permanent Worker	5.40	-	17.49	-
Lone Temporary Worker	-	3.72	-	21.64
Minimum one temporary worker in multiple adult household	11.93	68.41	2.87	21.41
No temps in multiple adult household	35.77	-	12.02	-

The extent to which the presence of a standard contract worker protects atypical worker households from financial poverty is revealed in Table 9. Two sets of statistics are presented. The first presents the poverty risks of all temporary and all part-time workers irrespective of household status (eq.1), while the second analysis reveals differences between atypical workers by household type (eq.2). Both models control for the demographic and labour market characteristics of workers and are estimated separately for contract workers and part-time workers; this approach was adopted because the generation of a four-way (full-time, part-time, permanent, temporary) household typology became too complicated. The models are standard logistic regression models with controls for clustering on identification number. We did not try to control for unobserved heterogeneity in these models as the assumption of independence between the covariates and the individual component of the error term did not hold.

Table 9: Logistic Regression of the Poverty Risks of Atypical Workers by Household

		IRELAND				DENMARK			
		Coeff	P>|z|	Coeff	P>|z|	Coeff	P>|z|	Coeff	P>|z|
EQ 1	Temporary	0.366	**			0.542	***		
	(Ref- Permanent Worker)								
EQ 2	Temporary/Non-employed			2.437	***			1.823	***
	Lone Temporary Worker			0.158	ns			1.371	***
	Temp in multi-adult household			1.928	***			1.090	**
	(Ref- Temp in a two adult household with a Permanent worker)								
EQ 1	Part-time	0.185	Ns			0.095	***		
	(Ref- Full-time Worker)								
EQ 2	Part-time-Non-employed			2.368	***			1.909	***
	Lone Part-time Worker			1.384	*			2.316	***
	Part-time in multi-adult household			1.100	**			0.543	ns
	(Ref- Part-time worker in a two adult household with a Full-time worker)								

*Controls: age, work experience, work experience squared, educational level, job related training, labour force attachment, occupational level and industrial sector.
Key: p<0.01= * , p<0.001= ** , p<0.0001= ***

Table 9 reveals that temporary workers are more likely to be in income-poor households and we find this to be true of both Denmark and Ireland. However, we also find strong differences by household type (eq 2): temporary workers in a two-adult household with a standard contract worker, the reference category, are less likely to be exposed to income poverty than other temporary worker households. While this finding does suggest that standard contract workers' earnings provide a buffer for temporary workers from income poverty, not all temporary workers live with a standard contract worker (Table 8).

Table 9 also establishes that part-time workers in Ireland are no more likely than a full-time worker to be in a household which is income poor, though in Denmark part-time workers are more exposed to household poverty. We again find considerable variation in the poverty risks of workers by household type, with part-time workers who are not living with a full-time worker disproportionately exposed to income poverty.

7. Conclusions and Discussion

This paper sought to establish whether atypical workers experience similar working environments in two countries which share similar rates of market flexibility but differ in their welfare provision. We compared the job quality of atypical workers, as well as their poverty risks.

We found work quality, determined through the analysis of wages, low pay risk and access to employer-provided training, to be of inferior quality in Ireland. That the Danish economy is able to provide such high rates of employment quality, whilst maintaining competitiveness, is the first lesson this study offers.

While we expected the flexibility of the Irish and Danish markets to decrease uncompensated differentials between atypical and standard contract workers overall, and expected Danish trade unionism to provide relative equality between different categories of Danish worker, we found temporary workers to experience poor job quality relative to permanent workers in both countries. Temporary workers were exposed to low pay and were not found to move on from this low pay risk at a greater speed than permanent workers, they were found to earn a wage penalty even after we controlled for unobserved individual heterogeneity and were found to be less likely to receive employer-provided training. Finally, temporary workers were found to have higher poverty risks than permanent workers.

While temporary workers in Ireland and Denmark were found to share a series of labour market disadvantages, this was not true of our comparison of part-time workers. In Ireland, part-time workers were at risk of repeat spells of low pay, while there was no such risk in Denmark. Danish part-time workers were also found, at the aggregate level, to have hourly pay on a par with full-time workers. We had anticipated a portion of these findings, with Danish investment in public childcare provision and the centrality of women's (parents') employment issues in Danish trade unionism expected to equalise worker-carers' employment conditions. The analysis also revealed unexpected findings: we found part-time workers in *both* countries to earn a wage premium once we controlled for individual heterogeneity while in both countries they were also considerably less likely to receive employer-provided training.

Finally, we found Irish part-time workers to have lower poverty risks than Danish part-time workers, suggesting that household structure offers greater protection to part-time workers' income security in Ireland.

This project established that temporary work is bad work, even in highly flexibilised economies and this relative tendency remained even in the presence of high trade union density, in Denmark. This project also establishes that part-time work, while experiencing a host of disadvantages, is not as consistently disadvantaged.

While this project sought to bring the household level to an analysis of individual outcomes, further research would do well to reveal the stability of different working arrangements through time. We found a very high proportion of Irish temporary workers in multiple adult households, 67%, though as yet we do not know whether they choose to be there, and are living with friends in shared accommodation, or whether the majority of these workers are young adults in their parents' home who are unable to afford alternative accommodation given the lack of job security they face.

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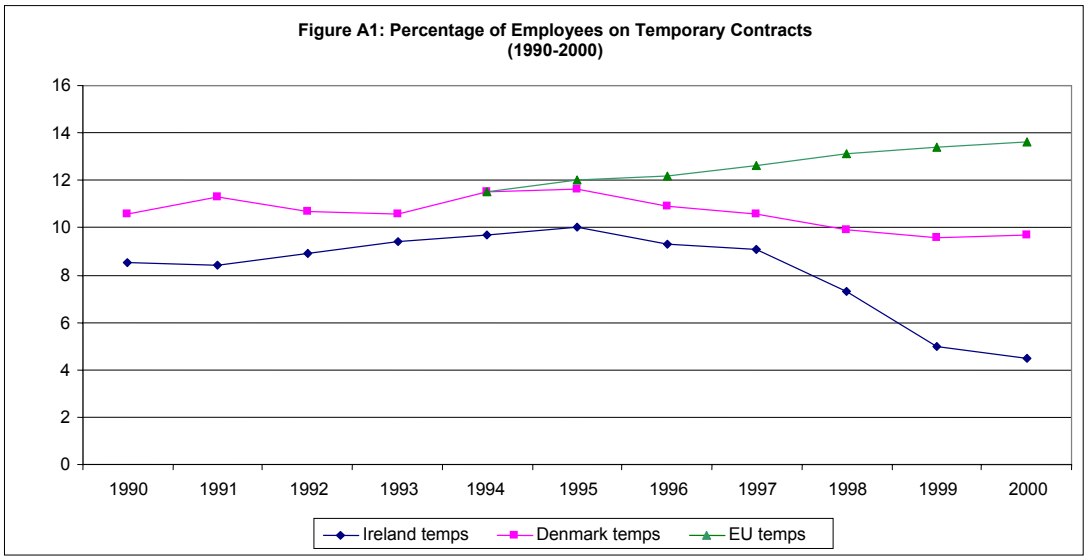
Appendix

Figures:



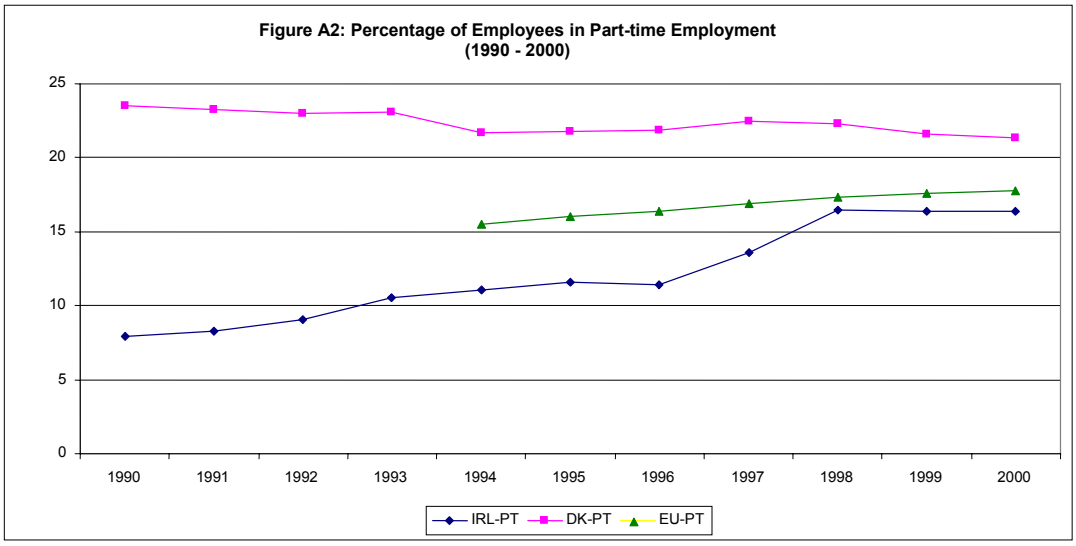


Table A1: Proportion of the Labour Force Unemployed by Country and Gender.

Percentage Unemployed as a Share of the Labour Force											
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Ireland											
All	13.4	14.7	15.4	15.6	14.3	12.3	11.7	9.9	7.5	5.6	4.2
Men	12.8	14.2	15.1	15.4	14.2	12.2	11.5	9.9	7.7	5.7	4.2
Women	14.6	15.8	16	16	14.6	12.5	11.8	9.9	7.3	5.5	4.2
Denmark											
All	7.2	7.9	8.6	9.5	7.7	6.7	6.3	5.2	4.9	4.8	4.4
Men	6.8	7.2	8	9.3	7.1	5.6	5.3	4.4	3.9	4.4	4.1
Women	7.6	8.6	9.2	9.9	8.5	8.1	7.5	6.2	6	5.4	4.8
European Union											
All				10.2	10.5	10.2	10.3	10.1	9.5	8.7	7.9
Men				9.2	9.5	9	9.2	8.9	8.2	7.6	6.8
Women				11.5	12	11.8	11.8	11.7	11.1	10.2	9.3

Source: Employment in Europe (EUROSTAT: 2001).

Table A2: Proportion of Workers on Low Pay (60% less than the median), Variation by Panel Year, all Employees aged 18-64 Years

Panel Year		IRELAND	DENMARK
1995	N	464	83
	%	16.38	3.00
1996	N	424	89
	%	16.94	3.51
1997	N	372	96
	%	15.32	3.98
1998	N	381	84
	%	16.52	3.7
1999	N	292	64
	%	14.35	2.96
Total	N	1,933	416
	%	15.97	3.42

Table A3: Proportions in Receipt of Low Pay, Analysis of different Cut-Offs: -50%, -60%, -70% of Median Hourly Wages, all Employees aged 18-64 Years

		ALL (-50% of Median)	ALL (-60% of Median)	ALL (-70% of Median)
		%	%	%
IRELAND	Permanent	5.95	11.63	18.74
	Temporary	23.36	35.38	47.31
	Full-time	7.43	13.53	21.05
	Part-time	23.40	36.29	48.34
	All	9.14	15.97	23.97
	N	(1,106)	(1,933)	(2,901)
DENMARK	Permanent	0.91	2.04	6.09
	Temporary	8.64	13.68	24.33
	Full-time	1.48	2.93	7.50
	Part-time	5.38	8.53	16.14
	All	1.83	3.42	8.27
	N	(222)	(416)	(1,004)

Table A4: Multinomial Logistic Regression of the Relative Risk of Being Long-Term Low Paid (three years or more)

	IRELAND			DENMARK		
	Coef.	Robust Std. Err.	P>|z|	Coef.	Robust Std. Err.	P>|z|
Once Low Paid versus Never Low Paid						
Temporary Contract	0.665	0.123	0.000	0.665	0.123	0.000
Part-time	0.641	0.173	0.000	0.641	0.173	0.000
Women	0.565	0.152	0.000	0.565	0.152	0.000
18-24yrs (ref 40-54 years)	1.189	0.392	0.002	1.189	0.392	0.002
25-29yrs	0.606	0.342	0.076	0.606	0.342	0.076
30-39yrs	0.257	0.243	0.289	0.257	0.243	0.289
55yrs+	-0.117	0.375	0.756	-0.117	0.375	0.756
Work experience	-5.378	3.003	0.073	-5.378	3.003	0.073
Work experience sq	5.952	2.051	0.004	5.952	2.051	0.004
Upper Secondary Level Education	0.466	0.212	0.028	0.466	0.212	0.028
Lower Secondary Level Education (ref Third Level Education)	0.868	0.247	0.000	0.868	0.247	0.000
Formal Training	-0.160	0.117	0.171	-0.160	0.117	0.171
Lower Prof (ref Higher Professional)	0.217	0.267	0.418	0.217	0.267	0.418
Clerical	0.922	0.247	0.000	0.922	0.247	0.000
Skilled manual	0.580	0.280	0.038	0.580	0.280	0.038
Manual	1.080	0.297	0.000	1.080	0.297	0.000
Public Sector (ref Private Sector)	1.114	0.182	0.000	1.114	0.182	0.000
Constant	-3.973	0.980	0.000	-3.973	0.980	0.000
Twice Low Paid versus Never Low Paid						
Temporary Contract	0.821	0.135	0.000	0.821	0.135	0.000
Part-time	0.774	0.181	0.000	0.774	0.181	0.000
Women	0.786	0.170	0.000	0.786	0.170	0.000
18-24yrs (ref 40-54 years)	0.659	0.507	0.194	0.659	0.507	0.194
25-29yrs	-0.221	0.468	0.637	-0.221	0.468	0.637
30-39yrs	-0.127	0.351	0.717	-0.127	0.351	0.717
55yrs+	-0.080	0.517	0.877	-0.080	0.517	0.877
Work experience	1.529	3.965	0.700	1.529	3.965	0.700
Work experience sq	1.920	2.643	0.468	1.920	2.643	0.468
Upper Secondary Level Education	0.264	0.218	0.226	0.264	0.218	0.226
Lower Secondary Level Education (ref Third Level Education)	1.137	0.244	0.000	1.137	0.244	0.000
Formal Training	-0.096	0.134	0.474	-0.096	0.134	0.474
Lower Prof (ref Higher Professional)	-0.466	0.330	0.158	-0.466	0.330	0.158
Clerical	0.970	0.243	0.000	0.970	0.243	0.000
Skilled manual	0.377	0.269	0.161	0.377	0.269	0.161
Manual	0.893	0.299	0.003	0.893	0.299	0.003
Public Sector (ref Private Sector)	1.920	0.260	0.000	1.920	0.260	0.000
Constant	-7.255	1.220	0.000	-7.255	1.220	0.000

Three Times + Low Paid versus Never Low Paid						
Temporary Contract	0.575	0.143	0.000	0.575	0.143	0.000
Part-time	0.975	0.174	0.000	0.975	0.174	0.000
Women	0.898	0.189	0.000	0.898	0.189	0.000
18-24yrs (ref 40-54 years)	-0.173	0.414	0.675	-0.173	0.414	0.675
25-29yrs	-0.754	0.378	0.046	-0.754	0.378	0.046
30-39yrs	-0.764	0.301	0.011	-0.764	0.301	0.011
55yrs+	0.460	0.396	0.245	0.460	0.396	0.245
Work experience	5.931	3.511	0.091	5.931	3.511	0.091
Work experience sq	-1.666	2.530	0.510	-1.666	2.530	0.510
Upper Secondary Level Education	0.490	0.302	0.105	0.490	0.302	0.105
Lower Secondary Level Education (ref Third Level Education)	1.521	0.338	0.000	1.521	0.338	0.000
Formal Training	-0.398	0.159	0.012	-0.398	0.159	0.012
Lower Prof (ref Higher Professional)	-0.485	0.429	0.258	-0.485	0.429	0.258
Clerical	1.162	0.338	0.001	1.162	0.338	0.001
Skilled manual	0.119	0.394	0.763	0.119	0.394	0.763
Manual	1.370	0.381	0.000	1.370	0.381	0.000
Public Sector (ref Private Sector)	2.265	0.279	0.000	2.265	0.279	0.000
Constant	-8.534	1.030	0.000	-8.534	1.030	0.000
Model Summary						
Obs	9712			10251		
Sig of Model	0.000			0.000		
Pseudo R2	0.224			0.218		

Table A5.1a: OLS versus FE model, Irish Male Workers

	OLS			FE		
	Coeff	St.Err	P Value	Coeff	St.Err	P Value
Temporary Contract	-0.084	0.028	0.002	-0.033	0.015	0.025
Part-time	-0.115	0.063	0.065	0.140	0.029	0.000
18-24yrs (ref 40-54 years)	-0.310	0.050	0.000	0.003	0.038	0.939
25-29yrs	-0.274	0.044	0.000	0.040	0.030	0.180
30-39yrs	-0.132	0.028	0.000	0.013	0.019	0.504
55yrs+	-0.031	0.036	0.391	0.003	0.025	0.894
Work experience	0.727	0.368	0.049	-1.800	1.285	0.161
Work experience sq	-0.794	0.282	0.005	-0.440	0.696	0.527
Upper Secondary Level Education	-0.158	0.030	0.000	-0.058	0.022	0.008
Lower Secondary Level Education (ref Third Level Education)	-0.274	0.034	0.000	-0.102	0.025	0.000
Formal Training	0.057	0.018	0.002	-0.008	0.010	0.424
Continuously Unemployed	-0.040	0.047	0.393	0.024	0.035	0.504
Continuously in Education	-0.232	0.064	0.000	-0.050	0.047	0.285
Continuously Inactive	-0.222	0.224	0.323	0.145	0.106	0.168
Mover thru Employment	-0.077	0.033	0.018	0.003	0.019	0.866
Mover thru Unemployment	-0.063	0.044	0.156	0.002	0.025	0.925
Mover Other	-0.150	0.039	0.000	-0.006	0.026	0.833
Lower Prof (ref Higher Professional)	-0.101	0.031	0.001	-0.014	0.018	0.434
Clerical	-0.347	0.032	0.000	-0.044	0.019	0.022
Skilled manual	-0.263	0.032	0.000	-0.039	0.020	0.056
Manual	-0.480	0.045	0.000	-0.090	0.023	0.000
Public Sector (ref Private Sector)	-0.235	0.020	0.000	-0.092	0.023	0.000
Constant	2.908	0.111	0.000	3.663	0.477	0.000
Model Summary						
Observations	5791			5791		

Table A5.1b: OLS versus FE model, Irish Female Workers

	OLS			FE		
	Coeff	St.Err	P Value	Coeff	St.Err	P Value
Temporary Contract	-0.163	0.022	0.000	-0.016	0.013	0.232
Part-time	-0.068	0.020	0.001	0.049	0.014	0.001
18-24yrs (ref 40-54 years)	-0.278	0.052	0.000	-0.038	0.041	0.348
25-29yrs	-0.183	0.044	0.000	-0.009	0.032	0.776
30-39yrs	-0.064	0.032	0.045	-0.009	0.023	0.694
55yrs+	0.060	0.048	0.215	-0.080	0.039	0.043
Work experience	1.585	0.459	0.001	5.594	1.742	0.001
Work experience sq	-1.297	0.337	0.000	-3.746	0.890	0.000
Upper Secondary Level Education	-0.169	0.024	0.000	-0.041	0.019	0.035
Lower Secondary Level Education (ref Third Level Education)	-0.324	0.032	0.000	-0.080	0.028	0.004
Formal Training	0.082	0.017	0.000	0.024	0.012	0.047
Continuously Unemployed	-0.108	0.090	0.228	-0.080	0.054	0.138
Continuously in Education	-0.006	0.060	0.915	-0.067	0.044	0.125
Continuously Inactive	-0.137	0.039	0.000	-0.024	0.025	0.340
Mover thru Employment	-0.055	0.027	0.044	-0.005	0.017	0.782
Mover thru Unemployment	-0.072	0.052	0.171	-0.026	0.031	0.414
Mover Other	-0.111	0.027	0.000	-0.038	0.019	0.047
Lower Prof (ref Higher Professional)	-0.087	0.035	0.014	0.007	0.021	0.746
Clerical	-0.371	0.027	0.000	-0.059	0.020	0.003
Skilled manual	-0.257	0.038	0.000	0.040	0.029	0.163
Manual	-0.371	0.040	0.000	0.007	0.030	0.805
Public Sector (ref Private Sector)	-0.255	0.022	0.000	-0.033	0.020	0.102
Model Summary						
Observations	4330			4330		

Table A5.1c: OLS versus FE model, Danish Male Workers

	OLS			FE		
	Coeff	St.Err	P Value	Coeff	St.Err	P Value
Temporary Contract	-0.096	0.016	0.000	-0.039	0.010	0.000
Part-time	-0.046	0.059	0.430	0.072	0.026	0.005
18-24yrs (ref 40-54 years)	-0.272	0.036	0.000	-0.033	0.031	0.293
25-29yrs	-0.159	0.025	0.000	-0.046	0.021	0.025
30-39yrs	-0.082	0.017	0.000	-0.020	0.013	0.110
55yrs+	0.014	0.020	0.499	-0.024	0.017	0.175
Work experience	0.950	0.228	0.000	0.088	0.973	0.928
Work experience sq	-0.814	0.193	0.000	-1.152	0.552	0.037
Upper Secondary Level Education	-0.073	0.014	0.000	-0.006	0.010	0.526
Lower Secondary Level Education (ref Third Level Education)	-0.118	0.018	0.000	-0.038	0.016	0.016
Formal Training	0.049	0.011	0.000	0.002	0.008	0.828
Continuously Unemployed	-0.120	0.057	0.034	-0.047	0.037	0.211
Continuously in Education	-0.182	0.061	0.003	-0.064	0.035	0.066
Continuously Inactive	-1.291	0.316	0.000	-0.215	0.099	0.030
Mover thru Employment	-0.049	0.017	0.003	-0.025	0.011	0.027
Mover thru Unemployment	-0.069	0.024	0.004	-0.015	0.017	0.363
Mover Other	-0.079	0.036	0.026	-0.068	0.020	0.001
Lower Prof (ref Higher Professional)	-0.113	0.019	0.000	-0.048	0.018	0.007
Clerical	-0.254	0.019	0.000	-0.116	0.022	0.000
Skilled manual	-0.247	0.018	0.000	-0.007	0.022	0.766
Manual	-0.247	0.022	0.000	-0.026	0.025	0.299
Public Sector (ref Private Sector)	0.083	0.012	0.000	0.004	0.015	0.763
Constant	2.518	0.065	0.000	2.903	0.342	0.000
Model Summary						
Observations	4982			4982		

Table A5.1d: OLS versus FE model, Danish Female Workers

	OLS			FE		
	Coeff	St.Err	P Value	Coeff	St.Err	P Value
Temporary Contract	-0.051	0.013	0.000	-0.034	0.009	0.000
Part-time	0.037	0.013	0.006	0.067	0.010	0.000
18-24yrs (ref 40-54 years)	-0.216	0.027	0.000	0.022	0.030	0.449
25-29yrs	-0.107	0.020	0.000	-0.001	0.020	0.949
30-39yrs	-0.053	0.014	0.000	-0.006	0.012	0.626
55yrs+	0.002	0.017	0.921	-0.003	0.015	0.822
Work experience	0.480	0.202	0.018	1.170	1.039	0.260
Work experience sq	-0.416	0.177	0.019	-1.540	0.568	0.007
Upper Secondary Level Education	-0.054	0.010	0.000	0.002	0.007	0.738
Lower Secondary Level Education (ref Third Level Education)	-0.101	0.016	0.000	-0.023	0.013	0.089
Formal Training	0.080	0.012	0.000	0.025	0.009	0.005
Continuously Unemployed	-0.076	0.033	0.020	0.006	0.025	0.815
Continuously in Education	-0.082	0.037	0.029	-0.007	0.024	0.759
Continuously Inactive	-0.189	0.055	0.001	-0.076	0.036	0.033
Mover thru Employment	-0.024	0.015	0.109	0.002	0.010	0.874
Mover thru Unemployment	-0.080	0.017	0.000	-0.043	0.014	0.002
Mover Other	-0.119	0.023	0.000	-0.042	0.014	0.002
Lower Prof (ref Higher Professional)	-0.133	0.013	0.000	-0.044	0.017	0.012
Clerical	-0.232	0.014	0.000	-0.115	0.019	0.000
Skilled manual	-0.246	0.031	0.000	-0.090	0.031	0.003
Manual	-0.294	0.023	0.000	-0.124	0.026	0.000
Public Sector (ref Private Sector)	0.065	0.009	0.000	0.043	0.014	0.002
Constant	2.489	0.057	0.000	2.325	0.375	0.000
Model Summary						
Observations	4684			4684		

Table A7a: Random Effects Model of the Receipt of Employer-Provided Training – IRELAND

	MEN			WOMEN		
	Coeff	St.Err	P Value	Coeff	St.Err	P Value
Temporary Contract	0.106	0.184	0.564	-0.279	0.159	0.081
Part-time	-1.252	0.413	0.002	-0.676	0.171	0.000
18-24yrs (ref 40-54 years)	-0.211	0.402	0.600	0.489	0.409	0.232
25-29yrs	-0.166	0.320	0.605	0.446	0.340	0.190
30-39yrs	-0.309	0.217	0.155	0.415	0.246	0.091
55yrs+	-0.266	0.246	0.280	-0.217	0.392	0.580
Work experience	6.025	2.850	0.035	5.336	3.644	0.143
Work experience sq	-4.323	2.210	0.050	-4.258	2.647	0.108
Upper Secondary Level Education	-0.136	0.191	0.474	-0.257	0.173	0.138
Lower Secondary Level Education (ref Third Level Education)	-0.901	0.229	0.000	-0.927	0.255	0.000
Formal Training	1.013	0.125	0.000	1.165	0.149	0.000
Continuously Unemployed	-0.741	0.540	0.170	-1.048	0.848	0.217
Continuously in Education	0.118	0.502	0.815	-0.809	0.472	0.086
Continuously Inactive	-0.368	1.339	0.783	-0.826	0.374	0.027
Mover thru Employment	-0.023	0.268	0.931	0.349	0.222	0.116
Mover thru Unemployment	-0.814	0.384	0.034	-1.009	0.478	0.035
Mover Other	0.067	0.315	0.831	-0.573	0.244	0.019
Lower Prof (ref Higher Professional)	-0.089	0.195	0.649	0.267	0.217	0.218
Clerical	-0.857	0.210	0.000	-0.866	0.186	0.000
Skilled manual	-0.941	0.199	0.000	0.144	0.271	0.595
Manual	-1.946	0.268	0.000	-0.261	0.319	0.413
Public Sector (ref Private Sector)	-1.444	0.170	0.000	-1.005	0.168	0.000
panel year 1996	0.046	0.123	0.710	0.087	0.138	0.529
panel year 1997	0.323	0.127	0.011	0.523	0.144	0.000
panel year 1998	0.136	0.130	0.294	0.316	0.144	0.028
panel year 1999	-0.071	0.137	0.604	0.275	0.152	0.070
Constant	-1.584	0.861	0.066	-2.128	1.121	0.058
Model Summary						
Observations	6333			4803		

Table A7b: Random Effects Model of the Receipt of Employer-Provided Training – DENMARK

	MEN			WOMEN		
	Coeff	St.Err	P Value	Coeff	St.Err	P Value
Temporary Contract	-1.322	0.163	0.000	-0.969	0.199	0.000
Part-time	-1.502	0.509	0.003	-0.995	0.326	0.002
18-24yrs (ref 40-54 years)	0.518	0.397	0.192	-0.342	0.446	0.443
25-29yrs	0.100	0.291	0.731	-0.293	0.334	0.381
30-39yrs	0.098	0.201	0.625	-0.255	0.228	0.263
55yrs+	-0.472	0.227	0.037	-0.618	0.261	0.018
Work experience	4.223	2.617	0.107	4.451	3.061	0.146
Work experience sq	-3.253	2.176	0.135	-3.388	2.472	0.171
Upper Secondary Level Education	-0.252	0.168	0.133	-0.304	0.168	0.070
Lower Secondary Level Education (ref Third Level Education)	-0.282	0.213	0.185	-0.474	0.232	0.041
Formal Training	0.483	0.128	0.000	0.756	0.160	0.000
Continuously Unemployed	-0.444	0.593	0.454	-0.273	0.458	0.552
Continuously in Education	-0.703	0.438	0.108	-0.434	0.427	0.310
Continuously Inactive	-0.434	0.194	0.025	-1.397	0.652	0.032
Mover thru Employment				-0.602	0.225	0.007
Mover thru Unemployment	0.045	0.296	0.879	-0.230	0.281	0.414
Mover Other	-0.123	0.338	0.716	0.108	0.295	0.714
Lower Prof (ref Higher Professional)	-0.047	0.224	0.833	-0.038	0.244	0.877
Clerical	-0.930	0.235	0.000	-0.379	0.237	0.110
Skilled manual	-1.491	0.215	0.000	-0.807	0.365	0.027
Manual	-1.715	0.263	0.000	-1.015	0.316	0.001
Public Sector (ref Private Sector)	-0.721	0.158	0.000	-1.023	0.154	0.000
panel year 1996	0.461	0.119	0.000	0.415	0.133	0.002
panel year 1997	0.727	0.164	0.000	0.736	0.194	0.000
panel year 1998	0.820	0.135	0.000	0.959	0.154	0.000
panel year 1999	1.171	0.144	0.000	1.220	0.162	0.000
Constant	1.520	0.752	0.043	1.445	0.884	0.102
Model Summary						
Observations	5351			5011		

Table A8: Working Household Typology, all Employees aged 18-64 Years

	IRELAND	**DENMARK**
TYPOLOGY BY CONTRACT TYPE	%	%
Two Adult Working Households		
Dual Earner Households		
Permanent/Permanent	21.62	45.1
Permanent/Temporary	5.52	8.85
Temporary/Temporary	0.44	0.85
Single Earner Households		
Permanent/non-employed	13.68	9.98
Temporary/non-employed	2.07	1.57
Single Adult Working Households		
One permanent worker	4.38	15.4
One temporary worker	0.7	2.57
Other Working Households		
Minimum one temporary worker	22.57	5.08
No temporary workers	29.03	10.59
TYPOLOGY BY WORKING-TIME		
Two Adult Working Households		
Dual Earner Households		
Full-time/Full-time	20.15	46.22
Full-time/Part-time	7.28	8.44
Part-time/Part-time	0.14	0.13
Single Earner Households		
Full-time/non-employed	14.61	10.55
Part-time/non-employed	1.15	1.03
Single Adult Working Households		
One full-time worker	5.09	14.83
One part-time worker	1.11	2.25
Other Working Households		
Minimum one part-time worker	11.92	3.75
No part-time workers	39.67	11.91
N	(11,145)	(11,071)

Further Details: Employment Protection Legislation concerning Atypical Workers in Ireland and Denmark

Employment protection legislation (EPL) in both Ireland and Denmark is flexible relative to many other European countries (OECD 1999; Nickell 1997; Grubb and Wells 1994) though Danish EPL is moderately more flexible. The OECD jobs study (1994) classified the OECD countries according to the rigidity of their systems of employment protection. The index ranged from 1 implying the most flexibile to 20, implying the least flexible. The US was classified as the most flexible; Denmark was the 5th most flexible, while Ireland was 12th in line. For comparative reference the UK is rated 7th, while Germany was rated 15th.

In Ireland the Unfair Dismissals (Amendment) Act 1993 was introduced to prevent employers from re-employing the same temporary contract worker on successive temporary contracts which previously prevented temporary workers from claiming unfair dismissal. While the aim of this legislation is to protect employees from employers who use temporary contracts as a source of low-cost labour, there is a risk that restrictions surrounding the hiring of temporary contract workers may lead to market rigidities as has been the case in both France (Gash 2004) and Spain (Polavieja 2001). One year after the introduction of this legislation Irish employers described Irish EPL as only moderately flexible,[17] though only 25% of Irish employers claimed that they consider the costs of hiring and firing someone a valid reason for not hiring (Barbieri, Paugam and Russell 2000).

In Denmark there are few procedural inconveniences in the termination of any type of employment contract, and end of contract payments are low to non-existent even after considerable years of service (OECD 1999). Moreover, during our observation window, there were no legislative specifications concerning the length of temporary contracts, nor were there limitations to the number of times an employee could be re-employed on successive temporary contracts.[18] While EPL in Denmark is in many ways more flexible than Irish legislation Danish EPL contains a number of clauses which aim to ensure that temporary contract work is not misused. The first concerns the maximum number of temporary employment contracts under which a temporary worker can be employed. While there is no legal limit in Danish law, employers can nonetheless be brought to a labour court to challenge their use

[17] Out of a scale of 0-10 Irish employers ranked Irish employment law at 5.

[18] The legislation concerning the re-employment of the same temporary contract worker on successive contracts has changed in recent Irish legislation. It will be interesting to observe the effects of these changes on the most current data.

of successive temporary contracts (OECD 1999), suggesting the existence of a moral code in the deployment of temporary labour. The second concerns a recent change, in the mid-1990s, which makes Danish employers responsible for the payment of temporary workers' unemployment benefit for the first two days of their spell of unemployment (OECD 1999). While the cost involved is low, it might encourage employers to reconsider the necessity of terminating a temporary worker's contract. Finally, in Denmark the level of employment protection afforded workers is decided by the social partners (Björklund 2000). This is likely to produce a more coherent employment protection system, removing any loopholes in employment law which provide incentives for employers to misuse atypical work as low-cost, disposable labour.

In Ireland the regulation of part-time employment has seen considerable changes over the 1990s, with changes in both employment law and working practice resulting from national collective bargaining agreements between the government and its social partners. The Worker Protection (Regular Part-time Employees) Act 1991 brought in a series of changes in legislation which ensured that all part-time workers who worked a minimum of 8 hours a week, and were continuously employed for a period of more than 3 months, were entitled to protection from unfair dismissal and were entitled to the same benefits that full-time workers have: maternity pay/leave, redundancy pay etc. The previous legislation only offered protection to workers who worked more than 18 hours a week and who had been in continuous employment for a minimum of one year. This resulted in the exclusion of a considerable portion of the part-time workforce from welfare entitlements (Cousins 1995). The 2001 Protection of Employees (Part-time) Act replaced the Worker Protection Act and eliminated the hourly thresholds altogether. This Act also sought to ensure that part-timers are entitled to the same earnings and benefits as full-time workers on a pro rata basis. Nonetheless, there remain discrepancies in part-timers' entitlement to pensions, with a minimum threshold of 13 weeks continuous service still required for eligibility (O'Connell, McGinnity and Russell 2004).

In Denmark part-time workers benefit from the EPL and benefit system afforded all workers. Collective agreements specify a minimum of 15 hours a week, with part-timers defined as those working between 15 hours and 30 hours a week. Part-time workers who work the minimum of 15 hours benefit from standard EPL and unemployment benefit. The thresholds for access to other benefits are somewhat

lower with workers required to work 9 hours a week in order to be entitled to sickness benefits (Lind 1999) and 10 hours a week in order to be entitled to ATP – the supplementary labour market pension (Warren 2001). This could mean, however, that marginal part-time workers are excluded from certain work-related benefits.