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Temporary Work in Poland: Who Gets the Jobs?

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Abstract

In recent years, Poland witnessed a dramatic decline in its unemployment rate and, from having had one of the worst jobless records in the EU-27, the country now posts a figure below the Union average. However, this remarkable turnaround has apparently been driven by amendments to the country's Labour Code, which have generated an enormous increase in temporary working. On the basis of gross flow data from five consecutive annual panels from the Labour Force Survey, the paper identifies a strong link between this growth and the fall in unemployment. A multinomial logit model then reveals the flows were most heavily concentrated among males and the less well educated. There was also some evidence that fixed-term work lured previously discouraged, inactive individuals back into the labour market. However, the requirement that Poland aligns its temporary employment legislation with that of the EU could conceivably lead to at least a partial reversal of these developments.

Keywords: Unemployment, Temporary Work, Labour Market Dynamics

1. Introduction

Judged by the ambitions espoused in the successive Strategies to emerge in the wake of the Delors' White Paper on Growth, Competitiveness and Employment, Poland's already relatively weak labour market performance deteriorated sharply in the years immediately following the formal recognition of the country's application for EU membership in 1997. For example, its trajectories on the employment, unemployment and economic activity rates of all groups were counter to the objectives of the Lisbon Agenda and its subsequent refinements.¹ Even on the eve of the country's accession, official forecasts of its future labour market performance were not optimistic (E. Comm., 2004). In the event, the outcome was altogether more propitious, with a growth of over 1.6 million jobs and a reduction of unemployment by 1.7 million over the years 2003-2007. While still far too low by Lisbon standards, this was accompanied by an increase in the employment rates of both men and women, which casts the epoch in sharp relief to earlier years of jobless growth.

However, 85 per cent of the growth in employment over the period was composed of temporary positions, which places the development squarely in the terrain of a topical, wide-ranging and controversial debate that continues to provoke a steady stream of literature. As such, any empirical treatment needs to be selective in its approach and this paper is structured in the following way. The next section highlights the evolution of some major Polish labour market indicators since 1997, as viewed through the lens of the EU's strategic policy objectives that have evolved over the past two decades. Section 3 examines temporary working across Europe and considers the relevant legislative frameworks in the EU, in general, and Poland, in particular. Thereafter, Section 4 seeks to explore the links between the growth in temporary work and the fall in unemployment, using panel transition data across seven, mutually exclusive labour market states drawn from the Labour Force Survey (LFS). A multinomial logit model is then employed to identify the characteristics of those who have been most likely to enter non-permanent jobs from

the other labour market locations identified here. Section 5 represents a postscript and considers the potential durability of the changes observed on the Polish labour market to 2007 in the light of, first, the hard law emanating from the Commission in apparent support of the Union's strategic ambitions and, second, the world economic crisis, which impacted in the final year of this paper's period of analysis. Section 6 provides a summary and conclusion.

2. An overview of the Polish labour market

This context for the work is provided by an examination of certain salient features of the Polish labour market over the years 1997-2007. As such, it does not review developments in the country's early transition years, about which there are numerous detailed accounts, including Funck and Pizzati (2002), Allison and Ringold (1996), Grotkowska *et al.* (2005), Kramer (1995) and OECD (1994). The period under review can be divided conveniently into two: the years 1997-2003, over which Poland's record on numerous counts was little short of disastrous, and the years 2003-2007, when there was a rapid and impressive reversal of fortune on many fronts. Table 1 provides the summary detail, with the measures highlighted being based on, although not replicating exactly, the list of Structural Indicators (SIs) used by the Commission to assess progress towards satisfaction of the Lisbon objectives in one guise or another. In particular, the youth unemployment rate is a rather conspicuous absentee from the current SIs given the attention devoted to it not only in the EES Employment Guidelines, but also by Delors in his path-breaking White Paper (E. Comm., 1993).

1997-2003

Between 1997, when its application for membership of the EU was recognised formally by the Council (E. Comm., 1997; EC, 1997), and 2003, Poland's performance against many of the

ambitions and targets of the European Employment Strategy (EES) and the Lisbon Agenda, under which the EES was subsumed in 2000 (EC, 2000), had been woeful, as Table 1 elaborates. Thus, notwithstanding healthy economic growth rates over the period, with the exception of the slowdown experienced in 2001 and 2002, progress was secured not simply without employment creation, but with the loss of some 1.5 million jobs. Set in the context of what had evolved by 2003 into the lowest employment rate in the then EU-15 and the ten countries that were to accede in the following year, the conflict with the Lisbon target of an employment rate of 70 per cent for those aged 15 to 64 by 2010 was all too evident. Furthermore, the country's unemployment rate of nearly 20 per cent was higher than that of any existing or accession country. However, relatively high growth in the face of falling employment did at least mean that Poland achieved impressive productivity improvements, thereby satisfying at least one of the, often seemingly contradictory, goals set in order to achieve the Lisbon ambitions. The impact of this on living standards, as measured by GDP per capita in PPS, was nevertheless muted by the low labour utilisation rate and Poland's convergence towards the EU-15 norm was slower than its differential growth performance might otherwise have led one to expect.

In addition to maintaining an aggregate employment rate target, the Council also set goals for females and for older workers, defined as those between the ages of 55 and 64. In the former case, the ambition espoused at Lisbon was to achieve a figure of sixty per cent by 2010, with Poland again performing poorly. Given growing demographic pressures, the Stockholm Spring Council of 2001 (EC, 2001) formalised the EU's labour market ambitions for older workers by setting a target employment rate of fifty per cent, again to be achieved by 2010. The generous and frequently criticised Polish early retirement and disability pension provisions of the time (E.

Comm., 2006; OECD, 2004; World Bank, 2004) clearly made this appear a rather fanciful aspiration.

While the attainment of full employment represents a convenient short-hand for Europe's labour market goals, they are often portrayed in overtly social terms, with the prevention of social exclusion being high on the agenda. Reductions in both long-term and youth unemployment are viewed as making important contributions in this regard (E. Comm., 2002). In the former case, the Commission has elected to focus primarily on the number of people unemployed for twelve months or more, deflated by the total economically active population of the relevant gender. Poland's situation clearly deteriorated in the years leading up to its accession and, by 2003, the 11 per cent of the workforce without work for more than a year was exceeded only in Slovakia out of all present 27 Member States. Put somewhat more vividly, the Polish figure for the latter year translated into 55 per cent of all unemployed being long-term workless. Indeed, by the fourth quarter LFS of that year, some 22.6 per cent had been without a job for more than 24 months. That the situation on the post-1997 labour market evolved into a near crisis is exemplified further by the plight of young people. Thus, while the general tendency throughout the EU was for reduction, or at least relative stability, Poland witnessed a near doubling of its youth unemployment rate in the years to 2003 to over 42 per cent.

2003-2007

The deterioration of the labour market situation in the first six years of its pre-accession epoch clearly called for a radical policy response and, in 2002, the government unveiled a quite comprehensive reform package ("Entrepreneurship – Development – Work") with this purpose in mind. It must be noted, however, that Poland was struggling with its fiscal commitments under the

Stability and Growth Pact (E. Comm., 2004a), due in large part to its failure to contain public expenditure on social protection, and the effectiveness of any such reform programme was always questionable. Indeed, that part of the scheme targeted at unemployed young people (First Job) was abandoned in 2005 largely on grounds of cost (Surdej, 2008). It is significant therefore that a fundamental revision of the Labour Code, inspired by Jerzy Hausner, the then Minister of Labour and Social Policy, was also introduced in 2002, which, most notably, liberalised the country's temporary working provisions.

With growth resumed at respectable levels in the years from 2003, this time the economy did generate jobs and, by 2007, the increase in employment more than compensated for the losses endured in the period examined above. This new work had one dominant characteristic, which is that 85 per cent of it was performed under temporary contracts. In consequence, Poland lagged only Spain in the EU-27 in terms of the significance of such labour in 2007. Note though should be made of the fact that this paper does not distinguish between fixed-term workers hired directly by the employing enterprise and those recruited through temporary work agencies. The justification for this is twofold. First, the Polish LFS questionnaire did not make the distinction until 2006. Second, while growing, temporary agency workers (TAWs) made up only 1.7 per cent of those on short-term assignments in 2007.

The alternative possible explanation for the growth in employment was EU accession in 2004. However, integration with the Single Market had largely been achieved well before then; for example, 80 per cent of Poland's exports and 70 per cent of its imports were with the EU by the year 2000, levels that remained more or less constant for the rest of the decade. Admittedly, there was a surge in FDI inflows in the years from 2003, but this was a phenomenon shared by virtually every sub-region of the world and was not restricted to New Member States. Also, past booms in

FDI, as in the years 1998 to 2000, were not associated with any employment growth, let alone with a surge in temporary working. EU membership did, of course, bring with it the free movement of labour, although this did not initially cover all Member States and, furthermore, the fall in unemployment in Poland was more or less matched by the increase in employment. In addition, migration was not impossible prior to accession and freedom of movement probably served simply to legitimise some portion of it that was formerly illegal.

The increase in employment was reflected in a fall of unemployment by 1.7 million, reducing its rate below ten per cent for the first time since the inception of the country's LFS in 1992. Furthermore, the overall employment rate and those for females and older workers increased, although the figures attained were still well below the Lisbon targets and remained less than those achieved in 1997. Rather predictably, labour productivity, while still growing, did so at a somewhat slower pace than previously. Convergence in real GDP per capita continued, although its speed, as in most other new entrants, remained slow. One of the most notable achievements of the years following 2003 was the reduction in youth unemployment, which halved. Seemingly equally impressive was the fall in long-term unemployment as a percentage of the active population. However, it must be noted that this still masked a situation in which over half of all unemployed individuals had been without work for more than a year.

3. Temporary work

The use of fixed-term contracts and TWAs varies considerably across EU space, with Poland and Spain having twenty per cent or more of all employees on fixed-term contracts in 2005, while, in Austria, the figure was only just over four per cent.² From Table 2 it is apparent that, in most Member States, the majority of workers still have permanent contracts, with the only exceptions being the two small island states of Cyprus and Malta. Casual inspection of the data

does not reveal any systematic differences between the original EU-15 and the new entrants from Central and Eastern Europe. Notwithstanding the recent attention they have received, temporary agencies only accounted for one and a half per cent of all employment contracts, with their penetration being highest in Greece, where the figure exceeded four per cent. Finally, almost nine per cent of employed workers in the EU apparently had no formal contract of employment at all, with the numbers being particularly high in Greece, Ireland and Malta.

Table 2 about here

The extent to which fixed-term contracts and TAWs are favoured by employers is likely to depend upon the relative ease with which they can dismiss temporary and permanent employees. A common way of measuring this is the OECD's Employment Protection Legislation (EPL) index (OECD, 2004), which is a multi-faceted measure covering the overall strictness of employment security regulations. The expectation is that *ceteris paribus* there will be a positive relationship between the percentage of employees in temporary jobs and the EPL index for permanent workers and, conversely, a negative relationship between the percentage of temporary workers and their own EPL index. Estimates of these simple relationships are shown in Figures 1 and 2, wherein temporary workers include both those on fixed-term contracts and TAWs.³ The former of the Figures shows the anticipated, albeit weak, positive relationship. There are three clear outliers: Poland and Spain both have a very high percentage of workers on temporary contracts, given the values of their EPL indices, while the reverse holds true for Austria. Figure 2 reveals the anticipated negative relationship in the latter case, although the simple regression line is very poorly determined. Four countries – the Czech Republic, Poland, Slovakia and the UK – have low employment protection for temporary workers, whereas it is particularly high in France and Greece. Once again, Austria, Poland and Spain are distinct outliers.

Figures 1 & 2 about here

The EU's temporary work Directives

The Essen Council Resolutions on the 1999 Employment Guidelines invited the social partners to address issues relating to the modernisation of the organization of working arrangements in an attempt to make the Union more productive and competitive (OJ, 1999). In the same year, the Directive on Fixed Term Work (OJ, 1999a) was issued.⁴ In the Directive, Member States were charged with ensuring that a series of safeguards for fixed-term workers were put into place. First, the non-discrimination clause required that they were to be treated on equal terms with those on open-ended contracts in terms of pay and working conditions. Second, measures were to be taken to combat the abuse of such workers; for example, by keeping an individual on a series of short-term contracts when, in reality, the job that they were doing was a permanent one. Third, fixed-time contract staff were to be informed about any relevant vacancies that arose within the organization. Finally, employers were to facilitate access to training for these workers so that they could enhance their skills, career development and occupational mobility.

It was not until November 2008 that the Commission issued a Directive on temporary agency work (OJ, 2008). This states that TAWs are to be offered working and employment conditions at least as good as those offered to permanent employees. The provisions within this Directive cover pay, health and safety, social insurance, paid leave entitlement, access to training and the right to receive notification of vacancies.

Temporary work legislation in Poland

Article 25 of the 1996 Polish Labour Code dictated that three successive fixed-term contract renewals, with a maximum duration of three months each, automatically meant that the worker's

legal status would be that of a permanent employee. Hausner's revised Labour Code enacted in August 2002 abolished both time limits and restrictions on the successive number of permissible renewals. Amongst other reforms, it also provided for the use of substitution agreements whereby a temporary employee could replace a permanent worker on justified absence, for example through sick or maternity leave. Previously, no recognition of such a possibility was afforded under Polish labour law. Furthermore, employers are only required to give temporary staff two weeks' notice, whereas permanent workers enjoy notice periods of up to three months, and, in the former case, no reason for dismissal need be provided. Even when the legislation was framed, it was recognised that it would need to be amended on accession in order to comply with the Fixed-Term Work Directive. In the event, the revision adopted in 2004 merely reinstated the rule that a third temporary contract would be presumed to be a permanent one, but with no time limit on their length being imposed.⁵

Having first been recognised in law in 2001, the most important piece of legislation covering temporary agency work is the Temporary Employment Agencies Act, effective from April 2004. This provided for the use of TAWs in a wide, although not universal, range of circumstances. In general, they cannot work for a single employer for more than 12 months in any consecutive three year period, although this can be extended to 36 months if the posting is to cover an absent employee.⁶ In the latter case, however, the agency worker cannot return to the same firm for another 36 months. In addition, the Act imposed various non-discrimination clauses between temporary and permanent employees, although not necessarily equal pay. Against the wishes of the Ministry of Labour, the legislated Act still made it possible to employ TAWs on civil contracts, which typically do not entitle them to social insurance, the minimum wage or working time limits.⁷

4. Labour market dynamics

While there is a large body of literature dealing with temporary work, the emphasis to date in micro-studies has been on whether such positions act as a springboard to a permanent job or whether individuals employed on fixed-term contracts cycle between them and repeated spells of unemployment and the impact of temporary work on future earnings (see, for example, Amuedo-Dorantes *et al.* (2006); Autor and Houseman (2005); Blanchard and Landier (2002), Böheim and Weber (2006), Booth *et al.*, 2002; Gerfin *et al.* (2005); Ichino *et al.*, 2008; Maloney, 1999). This paper aims to complement this research by examining the source states of temporary workers and the factors that influence the likelihood of making the observed transitions.

Aggregate state transitions

Initial attention focuses on gross conditional transition probabilities. These relate to movements in status defined by enumerating the number of people who are in a given labour market state at some initial period (t_0) and then calculating what proportion of them are in each labour market state at the terminal time (t_1). For this purpose, individuals are located in one of seven exhaustive, mutually exclusive situations; permanent paid employment, temporary paid employment, self-employment, unpaid family workers (UFWs), unemployed, discouraged workers and other economically inactive. While the rationale for this selection is largely self-evident, brief comment on some of the choices is merited.

As above, temporary workers include those who have been hired directly by their employers or have been placed by TWAs. The self-employed have been identified separately, not simply because they are relatively numerous in the context of the EU, but also because various authors have pointed to the way that Polish employers have coerced erstwhile employees to set up on their own account in order to avoid the rigours of the country's employment legislation (Portet,

op. cit.). The relaxation of the temporary work rules might have been expected to reduce this pressure. While not unknown elsewhere in the EU, Poland has a not insignificant number of individuals who claim to be unpaid family workers.⁸ It is therefore of some interest to examine the extent to which those with this status were affected by the legislative change. Finally, the inactive were divided into two groups – discouraged and other – because it seems highly likely that their motivations and reactions to the liberalisation of the labour market regime would differ. The discouraged are those who said they did not believe they would find a job or had stopped searching because they had already tried everything without success. Activation of such individuals is core to the Lisbon Strategy's means of both dealing with ageing populations, which is as important in Poland as elsewhere, and for reducing social exclusion. The group of others consists not only of those who are out of the labour force because of domestic responsibilities or through genuine retirement, but also the many in Poland who have retired early or have accessed disability benefits. As noted earlier, the latter two segments of the Polish population have long been a target of the Commission.

In the Polish LFS, individuals are interviewed for two consecutive quarters, then dropped for the following two quarters, after which they re-enter the sample for another two quarters before being discarded. This means that three possible panels can be constructed from the Survey covering one quarter, one year and 15 months, respectively. In this paper, attention focuses on the annual data and figures from the five such panels for the period 2002 to 2007 are used. The transition summaries in Table 3 are an aggregation of the labour market flows that occurred in each of the individual panels, with the inflows into temporary work being reported in the third column. The results indicate that, even amongst those in fixed-term positions, there is a strong state persistence. Almost seventy per cent of those employed in a temporary post in the base year were

still on a temporary contract twelve months later, either with the same employer or another one. Inflows to temporary work from permanent positions were predictably low, with less than two per cent making such moves. Gross inflows of the same order of magnitude were also observed for those leaving self-employment and other inactivity. Although the flows were higher for UFWs and discouraged individuals, neither exceeded four per cent. The most notable finding, however, relates to the movements from unemployment to temporary work, with almost 16 per cent of the jobless making this transition over the time period considered. This outcome suggests the important role that temporary jobs played in reducing Poland's unemployment rate.

Table 3 about here

An alternative way of exploring these flows is to examine movements between states relative to the terminal stocks and these transitions are presented in Table 4. This reveals that almost 19 per cent of individuals in temporary employment at t_1 were previously unemployed, while a further 11 per cent had been economically inactive. Not unexpectedly given its size, permanent employment constituted another significant source of temporary workers, with six per cent of the closing stock having such a background.⁹

Table 4 about here

A multinomial logit model of micro-flows

Formally, the multinomial logit model (MNL) can be expressed as:

$$\ln \Omega_{m|b}(x) = \ln \frac{\Pr(y=m|x)}{\Pr(y=b|x)} = x\beta_{m|b} \text{ for } m=1 \text{ to } J$$

where b is the base category. Given that $\ln\Omega_{b|b}(x) = \ln 1 = 0$, then $\beta_{b|b}$ must equal 0. This means that the log odds of an outcome compared to itself are always zero and therefore the effects of the independent variables must also be zero.

The MNLM makes the assumption commonly known as the independence of irrelevant alternatives (IIA), which means that the odds ratio for any two alternatives should not depend on the other alternatives that are available. Two common tests of IIA are those proposed by Hausman and McFadden (HM) (1984) and Small and Hsiao (SM) (1985). However, it is commonly found that the HM and SM tests provide conflicting evidence on whether the IIA assumption is upheld.¹⁰ Furthermore, Cheng and Long (2007) found that the size properties of both of these tests can be extremely poor and the authors concluded that they are not useful for ascertaining the validity of IIA. McFadden (1974) and Long and Freese (2006) therefore advocate care in specifying the model such that it has distinct alternatives and that is the approach adopted here.¹¹

The estimated model in this case is:

$$\frac{Pr(y = m|x)}{Pr(y = b|x)} = \beta_0 + \beta_1 TERTIARY + \beta_2 VOCSEC + \beta_3 GENSEC + \beta_4 LOWERSEC \\ + \beta_5 YOUNG + \beta_6 FEMALE + \beta_7 YOUNGFEM + \beta_8 OLDER + \beta_9 POSTWORK \\ + \beta_{10} HOH + \beta_{11} DISABLED + \beta_{12} TOWN + \beta_{13} GROWTH + \sum_{i=1}^{15} \delta_i v_i + e$$

with specific definitions, together with descriptive statistics, being presented in the Appendix.

Here comment is restricted to general observations and the rationale underlying the inclusion of the regressors.

TERTIARY, *VOCSEC*, *GENSEC* and *LOWERSEC* are dummy variables that identify the highest level of education attained by LFS respondents, with the base category being those with, at best, primary education. Notwithstanding major reforms of the primary and secondary education

systems in 1991 and 1998 and an enormous expansion of higher education, including the emergence of many private sector universities, the labour market relevance and adequacy of Polish education at all levels remains an issue of debate (OECD, 2006). Fixed-term contracts could conceivably be an input to overcoming such reservations, although it should be noted that OECD (2002) pointed to the heavy concentration of temporary working amongst the less well educated. Nevertheless, their evidence indicated that this was not a universal phenomenon with the UK, for example, exhibiting more temporary employment for higher educational strata.

YOUNG is a dichotomous variable that identifies workers under the age of 25; a group that the international evidence suggests are heavily over-represented amongst fixed-term workers (E. Comm., 2007; OECD, 2002). It will also be recalled that the labour market plight of young people was one of the major driving forces behind the 2002 reforms, making inclusion of the identifier a natural point of departure. *FEMALE* is a standard shift dummy variable taking the value one for the women in the sample, although it might be noted that in the OECD in general there is no real evidence of a gender bias in the temporary workforce (OECD, *op. cit.*).

At the same time as the situation of young people in Poland was a cause of concern, so too was that of older workers. In the latter case, however, the problem was perceived less in terms of unemployment than in premature labour market exit and the impact that, in principle, it had on the employment rate (E. Comm., 2001). At the heart of the problem was the ease with which many workers could access relatively generous early and pre-retirement benefits. In fact, two reforms have been introduced that are designed to influence the opportunity set confronting older workers. The first was the change from a pay-as-you-go pension scheme to a funded system in 1999 for those aged under fifty at its inception.¹² This provided such workers with the incentive to develop longer social insurance contribution histories. The second was a tightening of the early retirement

pension eligibility criteria with effect from 2002, although this was far from comprehensive.¹³

These amended incentives for those entering later working life provide the justification for the inclusion of a dummy variable identifying those males aged 55-64 and females aged 50-59 in the current sample (*OLDER*). The model also includes a dummy variable equal to unity for those beyond the official retirement age (*POSTWORK*), which, for now, remains at 65 for men and 60 for women. Its inclusion is merited on the grounds that temporary employment may be a rational strategy for these seeking a staged labour market exit and because fixed-term contracts may be more likely to induce firms to hire such workers. *HOH* identifies those individuals who claim to be head of their household, while those with a disability, a segment of the Polish population that has long been an object of concern (E. Comm., 2003; 1997), are captured by the dummy variable *DISABLED*.

The remaining variables reflect, to some extent, the prevailing local and national socio-economic environment. First, *TOWN* takes the value of one for those who lived in a town as opposed to a village. While this distinction is somewhat arbitrary, it goes a long way towards singling out those who lived in urban as opposed to rural localities.¹⁴ The interest in this distinction stems from the rural development deficit that has long been recognised in Poland (MARD, 2007; E. Comm., 1997) driven, in part, by an un-restructured semi-subsistence agriculture that houses a good deal of disguised unemployment. Second, *GROWTH* measures the rate of increase of real national GDP, with there being some evidence that the availability of temporary jobs is pro-cyclical (OECD, 2002). Finally, the v_i are voivodship dummies, with the base region being Mazowieckie¹⁵.

The results for the MNLM are presented in Tables 5 and 6, with the associated Wald tests for variable significance given in Table 7. These tests reject the null hypothesis that the estimated

parameter values across equations are jointly statistically insignificant for all of the variables. An additional series of Wald tests was undertaken to see if there was evidence to suggest that any of the seven labour market states could be combined. The results, presented in Table 8, show that the data reject all possible combinations, hence each is retained as a separate category in the empirical analysis. The MNL coefficient values reported in Table 5 represent the impact on the log of the odds of moving into temporary work from one of the alternative labour market states, relative to an identical individual remaining in a temporary position between t_0 and t_1 ; hereafter referred to as the odds.

Education

For moves out of unemployment into short-term work, all of the education dummies bar *LOWERSEC* are statistically significant and negative, which suggests that it is the least well educated who have been drawn most intensively from the unemployment pool into temporary positions. The results also indicate that individuals with general or lower secondary education were more likely than others to make the move from the other inactive group to temporary work and, of those claiming to be discouraged in the initial time period, the respondents with tertiary education were the least likely to take up a short-term post. As far as moves from permanent employment to a temporary job are concerned, there is some evidence, albeit at the 10% significance level, that possession of vocational secondary education increased the odds of making this move whereas being educated only to lower secondary level reduced it. Collectively, these results concur with the OECD's (2002) finding that it is those with poorer educational attainments who tend to occupy temporary positions.

Personal characteristics

The results suggest that the upsurge in temporary working did not disproportionately favour younger unemployed workers, but neither did it discriminate against them and their unemployment rate fell in line with the overall figure. However, those aged less than 25 were more likely to leave other inactivity – often presumably some form of extended education – and family positions for a temporary post than were others. Conversely, there is no evidence that fixed-term openings unduly facilitated the exit of older respondents from the other inactive category. However, amongst discouraged individuals, those approaching retirement were more likely to move to a temporary job than those of all other ages, whereas those in the *POSTWORK* group were less likely to make this transition. There is therefore some evidence that fixed-term contracts may prolong the labour market careers of certain older workers. This is reinforced by the result indicating that the move from a permanent position to a short-term one was more likely for those in the older working age group, while youths had reduced odds of so doing.

In the particular case of Poland, the findings highlight significant differences between men and women with respect to temporary working. Thus, females were less likely to enter fixed-term posts from permanent jobs, self-employment, unemployment and the discouraged inactive group, but were more likely to make the transition from other inactivity. This latter finding may be indicating that fixed-term positions offer women a route back into the labour market following a career break.

Heads of households were less likely to move from unemployment and labour market inactivity into a temporary post, which may reflect the operation of various benefit traps in Poland. The results also show that while suffering a disability reduced the likelihood of an individual

moving from a permanent position, family post or discouragement into a short-term one, there is evidence they were drawn out of inactivity into temporary posts.

Socio-economic environment

Of the socio-economic variables included in the model, *GROWTH* was statistically significant in four of the transitions modelled. For the flows out of permanent jobs, unemployment and other inactivity, the parameter estimates are all negative. The first of these findings is easy to rationalise, although the latter two are somewhat puzzling in an era when virtually all new jobs were temporary. In contrast, the parameter estimate was positive and significant for the transition out of the discouraged category, which is more in line with the findings from elsewhere that fixed-term working behaves pro-cyclically.

The results for the second indicator in this group, *TOWN*, show that individuals in urban areas were more likely to rejoin the labour market by leaving other inactivity to take up a temporary post than were similar individuals domiciled in rural localities. On the other hand, this finding was reversed for inflows from self-employment, which is at least suggestive of a process wherein the growth in temporary working succeeded in drawing individuals from the farming sector, where restructuring remains to be completed.

For reasons of economy, the regional dummy variables included in the model are not reported in Table 5, but are summarised in Table 6, which lists those that were statistically significant for each transition. With two major exceptions, the results indicate little systematic variation in the inflows across regions. Most notable was that nine of them achieved statistical significance, and were negative, in the transition from a permanent position to a fixed-term one. The regions concerned have little in common; geographically they are dispersed and, whereas

Warmińsko-Mazurskie, previously the home of the state farms, consistently posted the highest unemployment rates in the country, those in Wielkopolskie ranks amongst the lowest.

For the flows out of inactivity, five voivodship parameter estimates are positive and significant; Lubelskie, Podlaskie, Śląskie, Świętokrzyskie and Warmińsko-Mazurskie. This suggests that temporary contracts have been successful in drawing people back into the labour market in areas with very different underlying characteristics. Thus, whilst historically Lubelskie, Podlaskie and Warmińsko-Mazurskie were agricultural, the former two still house small-scale private agriculture, whilst the latter lost many jobs when the state farms collapsed and now suffers the most severe social problems in the country. In contrast, Śląskie and Świętokrzyskie are far more industrialised, with the former housing Katowice where the former Nova Huta steelworks are based. All other flows appear to have been relatively neutral across Polish regional space.

5. Postscript: 2007 and beyond

The analysis in this paper covers the period to the second quarter of 2007, with the findings indicating a marked improvement in various labour market indicators in the five preceding years. Since that time, there have been two major developments that might have been expected to reverse at least some of the advances made over that period. The first was the global economic crisis. Between the third quarter of 2007 and the second quarter of 2009, Eurostat data indicate that the EU-27 endured a loss of almost three million jobs. In Estonia this translated into an employment fall of over ten per cent and, even in the evidently flexible environment obtaining in Spain, a reduction of 7.6 per cent. In Poland, on the other hand, employment grew by more than 400,000, an increase of 2.7 per cent. What is more, while the number of workers on temporary contracts held steady and therefore the percentage of the workforce employed on temporary contracts fell

back slightly, the latest available figure for the second quarter of 2009 (26.5) is now the largest of any EU Member State.

The second was that, as suggested above, the Polish legislation on temporary employment is too liberal to satisfy the precepts of the EU's Fixed-Term Work Directive. This was confirmed in 2008 when the Commission released its assessments of the transposition of the Directive by Member States (E. Comm., 2008). Its criticisms included, first, that the Polish legislation does not provide equal protection for all classes of temporary worker. Second, that it is easier to terminate a temporary contract than a permanent one. Third, that there are no limits on the possible duration of a fixed-term employment contract. Fourth, while the Labour Code does state that the maximum number of successive temporary contracts that can be concluded between an employer and a worker is three, the definition of successive is that there be less than one month between them. The Commission has now queried whether the latter time limit is long enough. Fifth, no objective reasons are needed to enter into or to renew a fixed-term contract. It is apparent from the language of the report that the laxity of Poland's efforts in these areas will be challenged in the future, even if this would seem unlikely in the current economic environment.

6. Summary and conclusions

The last few years have witnessed a strong reversal in the fortunes of Poland's labour market. There have been both a large increase in employment and a sharp reduction in unemployment. Furthermore, the improvements have persisted through at least the first two years of the global economic downturn. The driving force behind these developments would appear to be the amendments to the Labour Code adopted in 2002 which, most notably, relaxed many previous constraints on the employment of temporary workers. Indeed, 85 per cent of the growth in

employment between their introduction and 2007 was made up of workers on fixed-term contracts. This has meant that Poland has moved from a position where it had one of the lowest temporary work intensities in what was to be the EU-27 to having its highest.

Of major significance for public policy is that the increase in the temporary workforce has drawn many individuals from the unemployment pool: a feat that several years of healthy economic growth alone had previously failed to accomplish. On the basis of the findings of a MNLM examining flows onto fixed-term contracts from six other labour market states over the years 2002-2007, the erstwhile unemployed tended to be males with relatively low levels of educational attainment, the latter being a group that had long faced particular difficulties on the labour market. While the time period examined is clearly short, there was further evidence that the flows into temporary posts were negatively related to the rate of growth of the overall economy which, if the relationship persists, could be a useful additional hedge against a return to unemployment rates of twenty per cent and chronic levels of long-term joblessness. At the very least, the Polish labour market weathered the first two years of the current economic crisis better than those of many other Member States. There was also evidence that the upsurge in temporary jobs attracted formerly discouraged workers approaching retirement back into employment, which could have beneficial implications for the social security budget that has been identified as a contributory factor in Poland's struggle to meet its obligations under the EU's Stability and Growth Pact. At the same time, it could be a useful weapon in the fight against the near universal problem of dealing with an ageing population and meeting the targets set under the Lisbon Agenda.

However, such arguments should not be marshalled without recognising that, in injecting some much needed flexibility into its labour market, Poland has been adjudged by the European

Commission to have gone too far. In particular, its temporary employment laws now contravene the EU's Fixed-Term Work Directive and will need to be tightened at some point in the future. While it seems unlikely that the Commission would insist upon such moves in the middle of a severe recession, when it does, Poland may be confronted with a major dilemma. The country's public finances are not such as to allow it to adopt the Danish approach to flexicurity, whereby liberal but compliant levels of flexibility are combined with a generous social security system and mandatory activation programmes for the unemployed. It is therefore to be hoped that whatever amendments are made to its temporary working provisions do not lead to a rehearsal of the debate on whether a temporary job is better than no job at all?

REFERENCES

- Allison, C. and D. Ringold (1996), 'Labor Markets in Transition in Central and Eastern Europe', Technical Paper no. 352, Washington: World Bank.
- Amuedo-Dorantes, C., M.A. Malo and F. Muñoz-Bullón (2006), 'The Role of Temporary Help Agencies in Facilitating Temp-to-Perm Transitions', IZA DP No. 2177.
- Autor, S. and S.N. Houseman (2005), 'Temporary Agency Employment as a way out of poverty', MIT Working Paper, 05-25.
- Bernabè, S. and M. Stampini (2009), 'Labour mobility during transition: Evidence from Georgia', *Economics of Transition*, vol. 17 no. 2, pp. 377-409.
- Blanchard, O. and A. Landier (2002), 'The perverse effects of partial labour market reform: fixed-term contracts in France', *The Economic Journal*, vol. 112, issue 480, pp. F214-44.
- Böheim, R. and A. Weber (2006), 'The effect of marginal employment on subsequent labour market outcomes', IZA Discussion Paper, No. 2221.
- Booth, A., J.J. Dolado and J. Frank (2002), 'Symposium on temporary work introduction', *The Economic Journal*, vol. 112, issue 480, pp. F181-88.
- Cheng, S. and J.S. Long (2007), 'Testing for IIA in the multinomial logit model', *Sociological Methods and Research*, vol. 35, no. 4, pp. 583-600.
- E. Comm. (European Communities) (2008), *Employment in Europe 2008*, Luxembourg: E. Commu.
- E. Comm. (2007), *Employment in Europe 2007*, Directorate-General for Employment, Social Affairs and Equal Opportunities.
- E. Comm. (European Commission) (2006), 'Country-Study: Growth and Competitiveness in the Polish Economy: The Road to Real Convergence' *European Economy Occasional Papers*, No. 27, Directorate-General for Economic and Financial Affairs.
- E. Comm. (European Commission) (2004), *European Economy: Economic Forecasts*, No. 2, Spring, Directorate-General for Economic and Financial Affairs.
- E. Comm. (European Commission) (2004a), 'Report from the Commission: Poland', SEC(2004) 576 final, Brussels.
- E. Comm. (2003), 'Joint Inclusion Memorandum: Poland', Directorate-General for Employment and Social Affairs, SEC(2003).

E. Comm. (European Commission) (2002), 'Scoreboard on Implementing the Social Policy Agenda', COM(2002) 89 final, Brussels.

E. Comm. (2001), 'Joint Assessment of Employment Priorities in Poland', Directorate-General for Employment and Social Affairs.

E. Comm. (European Commission) (1997), 'Agenda 2000 – Commission Opinion on Poland's Application for Membership of the European Union', DOC/97/16, Brussels

E. Comm. (European Commission) (1993), 'Growth, Competitiveness and Employment: The Challenges and Ways Forward into the 21st Century', COM(93) 700 final.

EC (European Council) (2005), Presidency Conclusions Brussels European Council 22 and 23 March.

EC (European Council) (2001), Presidency Conclusions Stockholm European Council 23 and 24 March.

EC (European Council) (2000), Presidency Conclusions Lisbon Extraordinary European Council 23 and 24 March.

EC (European Council) (1997), Presidency Conclusions Luxembourg European Council 12 and 13 December.

EFILWC (European Foundation for the Improvement of Living and Working Conditions) (2007), *Fourth European Working Conditions Survey*, Luxembourg: Office for Official Publications of the European Communities, available at:

<http://www.eurofound.europa.eu/publications/htmlfiles/ef0698.htm>, accessed 24/03/2009.

EFILWC (European Foundation for the Improvement of Living and Working Conditions) (2008), 'Poland: temporary agency work and collective bargaining in the EU',

<http://www.eurofound.europa.eu/eiro/studies/tn0807019s/p10807019q.htm>, accessed 07/11/2009.

Eurostat (2009), Eurostat Database, <http://epp.eurostat.ec.europa.eu>, accessed 12/08/2009.

Eyraud, F. and D. Vaughan-Whitehead, (2007), *The evolving world of work in the enlarged EU: Progress and Vulnerability*, Geneva: International Labour Office.

Funck, B. and L. Pizzati (eds) (2002), *Labor, Employment and Social Policies in the EU Enlargement Process*, Washington: World Bank.

Gerfin, M., M. Lechner and H. Steiger (2005), 'Does subsidised temporary employment get the unemployed back to work?', *Labour Economics*, vol. 12, no. 6, pp. 807-35.

Grotkowska, G., M. Socha and U. Sztanderska (2005), *Flexibility and Security in the Labour Market. Poland's Experience.*, Geneva: ILO.

- GUS (Główny Urząd Statystyczny) (2009), www.stat.gov.pl/gus/definicje_ENG_HTML.htm?id=ANG-1672.htm, accessed 5/8/2009.
- Hausman, J. and D. McFadden (1984), 'Specification tests for the multinomial logit model', *Econometrica*, vol. 52, no. 5, pp. 1219-40.
- Ichino, A., F. Mealli and T. Nannicini (2008), 'From temporary help jobs to permanent employment: what can we learn from matching estimators and their sensitivity?', *Journal of Applied Econometrics*, vol. 23, no. 3, pp. 305-327.
- Kramer, M. (1995), 'Polish Workers and the Post-Communist Transition, 1989-1993', *Communist and Post-Communist Studies*, vol. 28, no. 1, pp. 71-114.
- Long, J.S. and J. Freese (2006), *Regression Models for Categorical Variables Using Stata*, 2nd edition, Texas: Stata Press.
- Maloney, W.F. (1999), 'Does Informality Imply Segmentation in Urban Labor Markets? Evidence from Mexico', *The World Bank Economic Review*, vol. 13, no. 3, pp. 275-302.
- MARD (Ministry of Agriculture and Rural Development) (2007), *National Strategic Plan for 2007-2013 Rural Development*, Warsaw.
- OECD (2006), *Economic Survey of Poland 2006*, Paris.
- OECD (2004), *OECD Economic Surveys: Poland*, Paris: OECD.
- OECD (2002), *Employment Outlook 2002*, Paris.
- OECD (1994), *The Labour Market in Poland*, Paris: OECD.
- OJ (1999), Council Resolution of 22 February 1999 on the 1999 Employment Guidelines, *Official Journal of the European Communities 1999/C 69/02*.
- OJ, (1999a), Council Directive 1999/70/EC of 28 June 1999 concerning the framework agreement on fixed-term work concluded by ETUC, UNICE and CEEP, *Official Journal of the European Communities L175*.
- OJ, (2008), Directive 2008/104/EC of the European Parliament and of the Council of 19 November 2008 on temporary agency work, *Official Journal of the European Union L327*.
- McFadden, D. (1974), 'Conditional Logit Analysis of Qualitative Choice Behavior', in Zarembka (ed.), pp. 105-42.
- Pagés, C. and M. Stampini (2007), 'No education, no good jobs? Evidence on the relationship between education and labor market segmentation', IZA Discussion Paper, No. 3187.

Portet, S. (2005), 'Poland: Circumventing the Law or Fully Deregulating', in Vaughan-Whitehead (ed), pp. 273-338.

Portet, S. And K. Sztandar-Sztanderska (2007), 'Poland: Vulnerability under pressure from unemployment', in: Eyraud and Vaughan-Whitehead (eds), pp. 359-398.

Small, K.A. and C. Hsiao (1985), 'Multinomial logit specification tests', *International Economic Review*, vol. 26, no. 3, pp. 619-27.

Surdej, A. (2008), 'First Job Programme, Poland', Dublin: European Foundation for the Improvement of Living and Working Conditions.

Vaughan-Whitehead, D. (2005), *Working and Employment Conditions in New3 EU Member States*, Geneva: International Labour Office.

World Bank (2004), 'Growth, Employment and Living Standards in Pre-Accession Poland', Report No. 28233-POL, Washington.

Zarembka, P. (1974), *Frontiers in Econometrics*, New York: Academic Press.

Table 1: Key labour market indicators 1997-2007

	1997		2003		2007	
	Poland	EU-15	Poland	EU-15	Poland	EU-15
Annual ave real GDP growth 1997-2003 & 2004-2007			3.9	2.4	5.4	2.4
Tot emp (000s)	15229.5	151724.5	13616.8	164799.1	15240.5	175249.4
Tot emp rate 15-64 (%)	58.9	60.7	51.2	64.5	57.0	67.0
Real lab prod ppe (2000 = 100)	85.7	96.1	123.4	101.7	136.9	106.7
GDP per cap (PPS)	7600	18700	10100	23600	13400	27800
Fem emp rate 15-64 (%)	51.3	50.8	46.0	56.2	50.6	59.7
Emp rate 55-64 (%)	33.9	36.4	26.9	41.7	29.7	46.5
U>12mth (% econ act)	5.0	4.8	11.0	3.3	4.9	2.8
U>12mth (% tot U)	46.4	48.6	55.9	41.4	51.3	40.2
U 15-24 (%)	23.2	19.6	41.9	15.3	21.7	14.7

Source: Eurostat (2009).

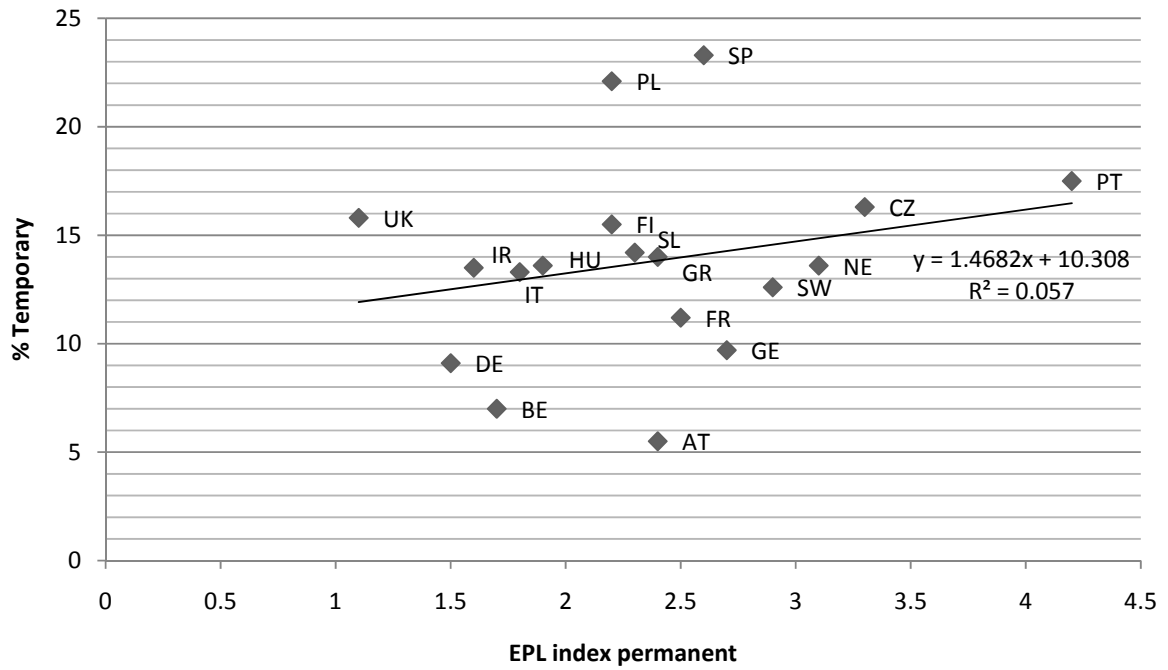
Table 2: Contract status of employed workers in 2005

Country	Permanent (%)	Fixed-Term (%)	Temporary Agency (%)	Apprenticeship/ Training (%)	No Contract (%)	Other etc. (%)
EU-27	76.0	11.1	1.5	0.9	8.6	7.6
Austria	77.3	4.1	1.4	1.1	8.6	1.3
Belgium	88.3	5.9	1.1	0.4	2.6	1.8
Bulgaria	70.0	19.2	2.5	0.8	5.7	1.7
Cyprus	46.1	8.3	3.7	41.5	0.4	0.0
Czech Republic	75.4	14.6	1.7	5.5	1.3	1.4
Denmark	80.3	7.2	1.9	0.9	8.9	0.9
Estonia	81.2	9.5	0.9	0.5	6.5	1.5
Finland	79.1	15.0	0.5	1.2	2.2	2.0
France	82.6	8.3	2.9	0.8	3.7	1.7
Germany	83.9	8.5	1.2	1.9	3.5	1.1
Greece	52.8	9.9	4.1	0.3	28.2	4.6
Hungary	82.2	12.7	0.9	0.1	4.2	0.0
Ireland	59.7	10.5	3.0	0.9	24.7	1.3
Italy	72.8	12.2	1.1	3.2	8.2	2.4
Latvia	85.0	9.1	0.8	0.4	3.9	0.9
Lithuania	81.2	9.6	0.9	0.3	5.8	2.2
Luxembourg	88.1	7.8	0.6	1.1	0.4	2.1
Malta	49.2	8.9	0.0	0.4	39.1	2.4
Netherlands	83.1	12.2	1.4	0.3	1.9	1.1
Poland	69.9	20.0	2.1	0.7	5.8	1.4
Portugal	70.6	15.7	1.8	1.1	8.5	2.3
Romania	87.4	5.5	0.6	0.1	4.4	1.9
Slovakia	83.5	13.7	0.5	0.3	1.3	0.6
Slovenia	76.9	13.0	0.7	0.4	8.6	0.4
Spain	66.0	20.8	2.5	1.5	8.1	1.1
Sweden	85.1	12.0	0.6	0.2	0.1	1.9
UK	66.0	13.2	2.6	1.1	14.7	2.4

Note: ‘Other etc.’ includes ‘Other’, ‘Don’t Know/No Opinion’, ‘Refusal’.

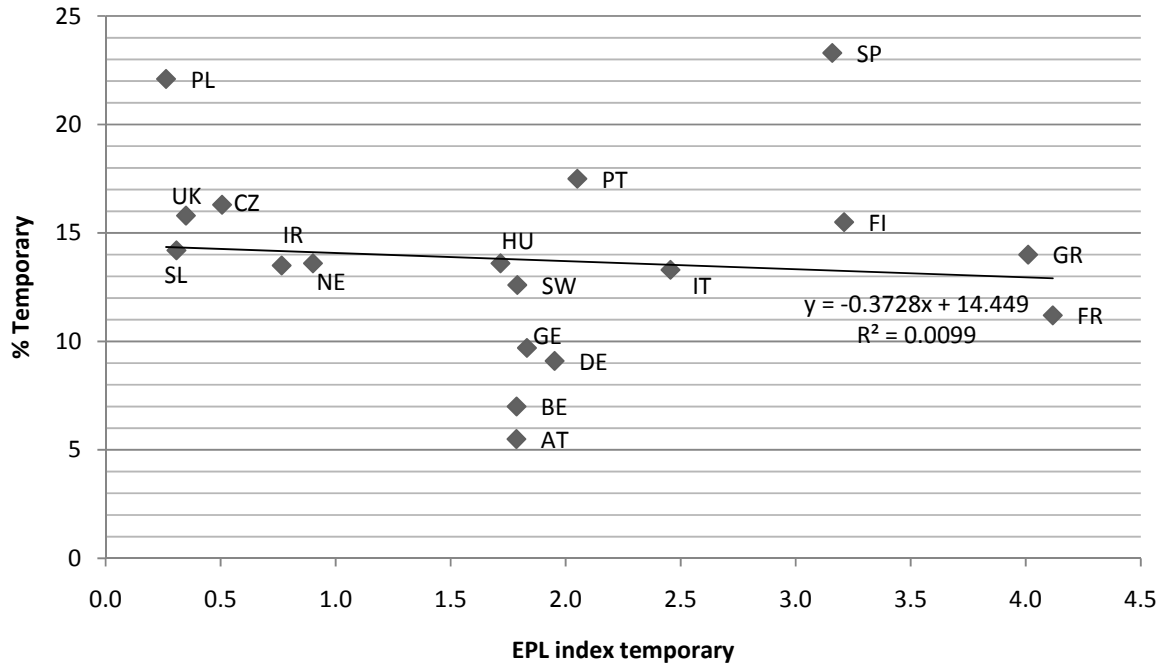
Source: EFILWC (2007), own calculations.

Figure 1



Source: EFILWC (2007) and OECD (2004).

Figure 2



Source: EFILWC (2007) and OECD (2004).

Table 3: Conditional outflow transition probabilities 2002-2007

State at t_1	Perm	Temp	Selfemp	UFW	Unemp	Discouraged	Other inactive	Stock at t_0
State at t_0								
Perm	0.9240	0.0189	0.0056	0.0012	0.0168	0.0018	0.0317	21036
Temp	0.1571	0.6868	0.0130	0.0044	0.0837	0.0059	0.0491	6131
Selfemp	0.0100	0.0125	0.9205	0.0195	0.0100	0.0015	0.0260	9119
UFW	0.0112	0.0292	0.0849	0.8158	0.0060	0.0012	0.0517	2497
Unemp	0.0372	0.1554	0.0211	0.0061	0.6381	0.0465	0.0955	8146
Discouraged	0.0081	0.0395	0.0105	0.0064	0.0733	0.6342	0.2280	1241
Otr inactive	0.0048	0.0168	0.0041	0.0041	0.0233	0.0083	0.9386	40850

Source: Polish LFS, 2002-2007, own calculations.

Table 4: Conditional inflow transition probabilities 2002-2007

State at t_1	Perm	Temp	Selfemp	UFW	Unemp	Discouraged	Other inactive
State at t_0							
Perm	0.9243	0.0585	0.0128	0.0100	0.0489	0.0238	0.0164
Temp	0.0458	0.6194	0.0087	0.0108	0.0711	0.0225	0.0074
Selfemp	0.0043	0.0168	0.9170	0.0714	0.0126	0.0088	0.0058
UFW	0.0013	0.0107	0.0232	0.8174	0.0021	0.0019	0.0032
Unemp	0.0144	0.1862	0.0188	0.0201	0.7205	0.02373	0.0191
Discouraged	0.0005	0.0072	0.0014	0.0032	0.0126	0.4928	0.0069
Otr inactive	0.0094	0.1011	0.0181	0.0670	0.1321	0.2129	0.9412
Stock at t_1	21030	6798	9154	2492	7214	1597	40735

Source: Polish LFS, 2002-2007, own calculations.

Table 5: Multinomial logit results

	Permanent→Temporary	Self Employed→Temporary	Unpaid Family Worker→Temporary
	Coefficient (t-stat)	Coefficient (t-stat)	Coefficient (t-stat)
<i>CON</i>	-1.0278*** (3.77)	-2.6953*** (4.68)	-3.6464 (1.62)
<i>TERTIARY</i>	0.1568 (0.81)	0.1038 (0.32)	-0.4325 (0.13)
<i>VOCSEC</i>	0.2635* (1.91)	0.0362 (0.14)	0.5471* (1.75)
<i>GENSEC</i>	0.1290 (0.55)	0.0796 (0.17)	0.1819 (0.36)
<i>LOWERSEC</i>	-0.4646** (2.00)	0.0976 (0.30)	-0.2187 (0.45)
<i>YOUNG</i>	-0.7725*** (4.70)	-0.8407*** (2.50)	1.1571*** (3.90)
<i>FEMALE</i>	-0.2749** (2.43)	-0.6196*** (2.63)	-0.0410 (0.17)
<i>OLDER</i>	0.5221** (2.08)	-0.3746 (0.06)	-13.9318*** (14.06)
<i>POSTWORK</i>	-0.3324 (0.26)	-16.2565*** (18.52)	-12.7016*** (8.48)
<i>HOH</i>	0.0839 (0.75)	-0.1186 (0.51)	-3.0129 (0.44)
<i>DISABLED</i>	-17.8474** (9.13)	-0.1191 (0.01)	-15.4174*** (8.12)
<i>TOWN</i>	0.1159 (0.93)	-0.5059*** (2.60)	-4.4897 (0.67)
<i>GROWTH</i>	-0.1840*** (5.09)	-0.0648 (0.84)	0.0375 (0.40)
+ voivodship dummies			

Table 5: Multinomial logit results (continued)

	Unemployed→Temporary	Discouraged→Temporary	Other Inactive→Temporary
	Coefficient (t-stat)	Coefficient (t-stat)	Coefficient (t-stat)
<i>CON</i>	-0.3143 (1.57)	-5.2890 (1.48)	-2.9549*** (10.72)
<i>TERTIARY</i>	-0.3879*** (3.33)	-15.5793*** (16.89)	0.1843 (0.98)
<i>VOCSEC</i>	-0.2708*** (3.13)	-0.2496 (0.61)	0.0070 (0.05)
<i>GENSEC</i>	-0.3212*** (2.56)	0.3760 (0.40)	0.7320*** (4.91)
<i>LOWERSEC</i>	0.0356 (0.34)	0.3308 (0.86)	1.3526*** (10.46)
<i>YOUNG</i>	-0.0016 (0.02)	-0.3280 (0.85)	1.3546*** (13.66)
<i>FEMALE</i>	-0.1251* (1.76)	-0.7820* (1.89)	0.4227*** (4.61)
<i>OLDER</i>	-0.1423 (0.69)	1.9302*** (3.38)	0.2849 (0.86)
<i>POSTWORK</i>	-2.3018 (0.30)	-14.8779*** (15.58)	0.6547 (1.30)
<i>HOH</i>	-1.0828*** (12.47)	-0.9460** (2.54)	-0.8574*** (6.49)
<i>DISABLED</i>	-0.2028 (0.46)	-16.5770*** (8.40)	2.6534*** (9.34)
<i>TOWN</i>	-0.0501 (0.70)	-0.4368 (1.27)	0.1745* (1.80)
<i>GROWTH</i>	-0.0954*** (4.53)	0.3327** (2.22)	-0.0659** (2.20)
+ voivodship dummies			
<i>N</i> : 6,798 <i>AIC</i> : 14,572 <i>BIC</i> : 15,718 Cragg-Uhler R^2 0.225			

Notes:

1. The reported t-statistics are derived from bootstrapped standard errors using 500 replications.
2. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively. Absolute t-values are in parentheses.

Table 6: Regional effects

Origin state	Significant dummy variables
Permanent	Dolnośląskie ^{**} (-), Kujawsko-Pomorskie ^{***} (-), Łódzkie ^{***} (-), Malopolskie ^{**} (-), Podkarpackie ^{**} (-), Pomorskie ^{**} (-), Warmińsko-Mazurskie ^{**} (-), Wielkopolskie [*] (-), Zachodniopomorskie ^{**} (-).
Self employed	Kujawsko-Pomorskie ^{***} (+), Świętokryskie [*] (+).
Unpaid family worker	Warmińsko-Mazurskie ^{***} (-).
Unemployed	Dolnośląskie ^{**} (+).
Discouraged	-
Other inactive	Lubelskie [*] (+), Podlaskie ^{**} (+), Śląskie [*] (+), Świętokryskie ^{***} (+), Warmińsko-Mazurskie ^{**} (+).

Notes:

1. The base voivodship Mazowieckie, houses the capital Warsaw.
2. ^{***}, ^{**} and ^{*} indicate significance at the 1%, 5% and 10% levels, respectively.

Table 7: Wald tests for parameter significance

	χ^2 [6] (Prob > χ^2)
<i>TERTIARY</i>	295.80 ^{***} (0.00)
<i>VOCSEC</i>	20.06 ^{***} (0.00)
<i>GENSEC</i>	41.15 ^{***} (0.00)
<i>LOWERSEC</i>	125.85 ^{***} (0.00)
<i>YOUNG</i>	252.78 ^{***} (0.00)
<i>FEMALE</i>	48.76 ^{***} (0.00)
<i>OLDER</i>	210.90 ^{***} (0.00)
<i>POSTWORK</i>	372.17 ^{***} (0.00)
<i>HOH</i>	192.55 ^{***} (0.00)
<i>DISABLED</i>	115.54 ^{***} (0.00)
<i>TOWN</i>	14.18 ^{**} (0.02)
<i>GROWTH</i>	47.29 ^{***} (0.00)
<i>Voivodship dummies</i>	792.07 ^{***} (0.00)

Notes:

1. ^{***}, ^{**} and ^{*} indicate significance at the 1%, 5% and 10% levels respectively.

Table 8: Likelihood ratio tests for combining alternatives

	χ^2 (Prob > χ^2)
1 vs 3	151.47*** (0.00)
1 vs 4	677.27*** (0.00)
1 vs 5	301.78*** (0.00)
1 vs 6	433.72*** (0.00)
1 vs 7	530.44*** (0.00)
1 vs 2	218.91*** (0.00)
3 vs 4	96.11*** (0.00)
3 vs 5	105.69*** (0.00)
3 vs 6	330.27*** (0.00)
3 vs 7	509.62*** (0.00)
3 vs 2	483.01*** (0.00)
4 vs 5	868.50*** (0.00)
4 vs 6	337.93*** (0.00)
4 vs 7	830.02*** (0.00)
4 vs 2	941.69*** (0.00)
5 vs 6	403.24*** (0.00)
5 vs 7	360.51*** (0.00)
5 vs 2	250.31*** (0.00)
6 vs 7	430.70*** (0.00)
6 vs 2	442.65*** (0.00)
7 vs 2	569.63*** (0.00)

Notes:

1. *** indicate significance at the 1% level.

Appendix

Table A1: Variable definitions

Variable mnemonic	Description	Mean	Min	Max	Std. Dev.
<i>TERTIARY</i>	1 if the individual has tertiary education, 0 otherwise.	0.1247			0.3304
<i>VOCSEC</i>	1 if the individual has vocational secondary education, 0 otherwise.	0.2705			0.4443
<i>GENSEC</i>	1 if the individual has general secondary education, 0 otherwise.	0.0965			0.2953
<i>LOWERSEC</i>	1 if the individual has lower secondary education, 0 otherwise.	0.1545			0.3614
<i>YOUNG</i>	1 if the individual is less than 35, 0 otherwise.	0.2923			0.4548
<i>FEMALE</i>	1 if the individual is female, 0 otherwise.	0.4481			0.4973
<i>OLDER</i>	1 if the individual is 55-64 (men), 55-59 (women), 0 otherwise.	0.0388			0.1932
<i>POSTWORK</i>	1 if the individual is 65+ (men), 60+ (women), 0 otherwise.	0.0074			0.0855
<i>HOH</i>	1 if the individual if head of household, 0 otherwise.	0.3132			0.4638
<i>DISABLED</i>	1 if the individual is disabled, 0 otherwise.	0.0129			0.1130
<i>TOWN</i>	1 if the individual lives in a town, 0 otherwise.	0.5916			0.4916
<i>GROWTH</i>	The growth rate of real national GDP. (http://www.stat.gov.pl)	5.4995	1.5	6.35	1.4803

Notes:

1. All of the education variables relate to the individual's highest level of completed education.
2. Data from the Polish Labour Force Survey (Badania Aktywności Ekonomicznej Ludności [BAEL]) unless otherwise stated.

NOTES

¹ Various European Councils after Lisbon specified more precise targets, while the Mid-Term Review of the Strategy integrated the previously separate economic and employment guidelines and aimed for the improved governance of a re-launched Growth and Jobs Strategy (EC, 2005).

² Temporary jobs can take a number of quite distinct forms (Booth *et al.*, 2002).

³ The OECD computes an EPL for temporary workers by using a simple average of the individual indices for those on fixed-term contracts and TAWs. Given the unequal size of these two groups, a weighted average is used here, with the weights being the employment shares of the two groups.

⁴ This Directive only covered workers with fixed-term contracts and did not apply to TAWs.

⁵ On the temporary work legislation, see Portet and Sztandar-Sztanderska (2007).

⁶ EFILWC (2008) reports that some less scrupulous, normally smaller, agencies flout the 12 month restriction for TAWs by swapping the workers amongst themselves.

⁷ Further consideration of the employment agencies legislation can be found in Portet (2005) and Portet and Sztandar-Sztanderska (2007).

⁸ Eurostat defines family workers as persons who help another member of the family run a farm or other business, provided they are not classed as employees.

⁹ Bernabè and Stampini (2009) and Pages and Stampini (2007) proposed a complementary indicator to the standard transition matrix, namely transition tendencies, which takes account of the number of openings created in the destination states. On this occasion, however, the conclusions mirror those in Table 4 and the measure is not reported but is available from the authors on request.

¹⁰ In this application, the HM test upheld the null hypothesis for all pairs of outcomes whereas the SH test rejected it.

¹¹ A multinomial probit specification could have been used as it does not assume IIA. However, the model frequently fails converge and, if the specification has more than three choices, it is normally necessary to place restrictions on the variance covariance matrix.

¹² It should be noted that those aged between thirty and fifty had to make an irrevocable choice between staying in the old system and entering the new one.

¹³ In order to be eligible for early retirement payments individuals had to be certified as eligible for unemployment benefit; that is, without work.

¹⁴ Any settlement wishing to be awarded the status of a town has to have its application approved by the Council of Ministers (GUS, 2009).

¹⁵ Voivodship unemployment rates are a possible alternative to the regional dummies, but they suffer from the problem of hidden unemployment in rural localities. In any event, the inclusion of the former did not materially affect any of the other parameter estimates and the results are not reported. The findings are available from the authors on request.