Consortium of Household Panels for European Socio-Economic Research

CHER

Wage mobility

by Brunon Górecki & Marian Wisniewski

Document n° 14 2003

Corresponding author:

Brunon Górecki
Department of Economics
Warsaw University
Dluga Street 44/50
00-241 Warsaw , Poland
Phone: +48 (22) 55 49 144
E-mail: gorecki@coin.wne.edu.pl

Marian Wisniewski
Department of Economics
Warsaw University
Dluga Street 44/50
00-241 Warsaw , Poland
Phone: +48 (22) 55 49 144
E-mail: wisniewski@ceeerc.wne.edu.pl

This publication was supported by the European Commission within the programme "Improving the Human Research potential and the Socio-Economic Knowledge Base"

Comparative Research on Household Panel Studies

This series presents the results of research projects based on the analysis of one or more household panel studies from the CHER micro database. Papers will cover the wide range of substantive topics and investigations of the particular problems of comparative research.

The series contains in papers no. 1 – 16, among other papers, the results of all of the work being carried out as part of the CHER project, which was funded by the European Commission under within the program "Improving the Human Research potential and the Socio-Economic Knowledge Base. CHER aims to develop instruments for analyzing, programming and stimulating socio-economic policies, and for comparative research on policy issues such as labor force participation, income distribution, unpaid work, poverty, household composition change, and problems of the elderly.

Coordination of the CHER project is provided by CEPS/INSTEAD, Differdange, Luxembourg.

The main partners are:
Joachim R. Frick, Deutsches Institut für Wirtschaftsforschung , DIW Berlin, Germany
Kimberly Fisher, Institute for Social & Economic Research, ISER Essex University, Colchester, UK

The distinguished partners are:
Alain Degenne, Institut du Longitudinal CNRS-LASMAS, Caen, France
Franco Peracchi, Centre for International Studies on Economic Growth, CEIS, Tor Vergata University, Rome, Italy
Sergi Jimenez, Department of Economics, Universidad Carlos III, UIIIM, Madrid, Spain
Zoltan Fabian, Social Research Informatics Center , TARKI Budapest, Hungary
Brunon Gorecki, Dept. of Economics, University of Warsaw, UWARS, Poland
Ruud Muffels, WORC/TISSER, Katholieke Universiteit Brabant, Tilburg, Netherlands
Rudy Marynissen, University of Antwerp, UIA, Antwerp, Belgium
John Kallas, National Centre for Social Research, EKKE, Athens, Greece
Erwin Zimmermann, The Swiss Household Panel, SHP, Neuchâtel, Switzerland

For more information about this series, or to submit papers for inclusion, contact:

Günther Schmaus
CEPS/INSTEAD
Anc. Bât. administratif ARBED
Rue E. Mark, Boîte postale 48
L- 4501 Differdange
Tel: +352 58 58 55-509
Fax: +352 58 55 88

e-mail:gunther.schmaus@ci.rech.lu
url: http://cher.ceps.lu

Acknowledgement

This research was carried out as part of the work of the *Consortium of Household Panels for European Socio-economic Research (CHER), within the programme "Improving the Human Research potential and the Socio-Economic Knowledge Base" (*Project number HPSE-CT-1999-00037).

Readers wishing to cite this document are asked to use the following form and words:

Górecki, B. and Wisniewski, M. (2003) - "**Wage mobility",** CHER Working paper 14, CEPS/INSTEAD, Differdange, G.-D. Luxembourg

For an on-line version of this working paper and others in the series, please visit the Institute's website at: *http://cher.ceps.lu/*

ISBN 2-87987-360-6

Internal CEPS identification: 05.03.0069

Wage mobility

by
Brunon Gorecki and Marian Wisniewski
Warsaw University

Wage mobility is the change of earnings of an employed person that takes place in time. This change can be nominal or real - measured on a money scale, or relative – represented by a change in the relative position of a person's wages measured on a wage distribution scale.
Wage mobility is an interesting issue for at least two reasons. Firstly, it plays a dominant role in moulding the wage distribution and wage inequality at a given moment in time. Secondly, as a dynamic component of wage inequality, it can have a more significant impact on motivation and satisfaction than wage inequality itself.

It is impossible to describe all factors that have an impact on wage mobility. Part of the factors can be located on a macro level. Some of those will have a long-term character and will be associated with transformation processes of the economy, technological changes, changes in the demographic structure (aging of the society) or market changes (increased international integration, globalisation). Post-communist transition economies that undergo major changes in the process of adjusting their economic systems to the requirements of decentralised market economies will also fall in this group. Other macroeconomic factors have a short-term impact on wage mobility and will be associated with cyclical components.

However, crucial for determining wage mobility will be microeconomic factors. Some of them have a long-term, predictable character and are associated with human capital changes in the life cycle of a person or with changes in needs and preferences in the life cycle of the family or household the person belongs to. Others will be unpredictable and accidental and can be seen as a lucky or unlucky coincidence that will have an impact on a person's labour force participation decisions.

In this paper we are not going to deal with all aspects of wage mobility. We will focus on three issues. In the first part we will look at wage mobility from a macro perspective and will

try to measure the intensity of wage mobility in different countries. To explain the differences between countries we are going to identify two components of mobility: the first is associated with a rise in the overall wage level, the second – with differences in the wage rise across individuals.

The second part of this paper will be devoted to the microeconomic level. We will argue that mobility is the total effect of interactions between several groups of different individuals: those who win, those who loose and those whose situation doesn't change. We will try to describe the characteristics of some of those groups.

In the third part we are going to continue the microeconomic analysis, but we focus on another factor that plays an important role in determining wage mobility: job mobility. We will argue that the decision to continue or to change jobs has a significant impact on wage changes. We will also attempt to quantify the wage gains (or losses) of individuals who change jobs, taking into account if the job change has been voluntary or forced.

1. Wage mobility from the macro perspective

In the first part of the paper we are going to asses the extent of wage mobility for as many countries as possible using the CHER database. On principle in this part we are not going to explore in depth the reasons behind high or low wage mobility in different countries. However, we will try to distinguish between two dimensions of mobility, which will enable us to show two complimentary approaches to wage changes that happen over time.

Mobility measures applied in this study serve more as tools, than are the focus of consideration as such. For this reason a measure proposed by G. Fields & A. Ok [1996 &1999] will be used, because of its important properties, namely: scale invariance, symmetry, subgroup decomposability, and multiplicative path separability. Due to additivity of this measure we can use the approach developed by Markandya [1984], and decompose total mobility into two components. The first one reflects the effect of economic growth of the whole economy or of some social or demographic groups of interest. The second one is the

result of transfers of incomes among individuals in the society. This component measures individual variation in earnings or incomes.

The Fields & OK mobility measure can be defined as follows.

Let x_j and y_j be the log of earnings of person j = 1, 2, ...n; in starting and final points of time respectively. Then p(x, y) – the relative mobility measure is expressed as

$$p(x,y) = \frac{\sum_{j=1}^{n} |x_j - y_j|}{\sum_{j=1}^{n} x_j} * 100$$

As was mentioned above the measure can be disaggregated into two parts. The first one is the difference between the whole amounts of incomes in starting and final periods. The second part results from income transfers from losers to gainers (and hence will be called transfer mobility). Because each euro lost by the a loser has to be gained by a winner, the total mobility due to transfer of income across individuals can be expressed as twice the amount lost by losers.

In the case of a growing economy, that is when:

$$\sum_{j=1}^{n} y_j - \sum_{j=1}^{n} x_j > 0$$

the numerator of the index can be expressed as:

$$\begin{aligned}\sum_{j=1}^{n} |x_j - y_j| &= \sum_{j\in W} (y_j - x_j) - \sum_{j\in L} (y_j - x_j) \\ &= \sum_{j\in W} (y_j - x_j) + \sum_{j\in L} (y_j - x_j) - 2\sum_{j\in L} (y_j - x_j) \\ &= \sum_{j=1}^{n} (y_j - x_j) + 2\sum_{j\in L} (x_j - y_j)\end{aligned}$$

were W and L denote sets of winners and losers respectively.

Similarly, in a shrinking economy, we will have:

$$\sum_{j=1}^{n} |x_j - y_j| = \sum_{j=1}^{n} (x_j - y_j) + 2\sum_{j\in W} (y_j - x_j).$$

If the wage growth in the economy is experienced by everyone then no matter how evenly the growth is spread between individuals, the total value of the index will be attributed to its first component and the second part (transfer mobility) will be equal to zero. This means that the

individual component does not shows us the inequality of wage growth, but a more basic inequality, namely the fact that while the wages of some individuals are growing, those of others will be falling.

Using CHER data year to year mobility measures are calculated for the following list of countries: Austria (95/98), Belgium (94/98), Belgium (94/98), Denmark (94/98), Finland (96/97), France (94/98), Germany (94/2000), Greece (94/98), Hungary (94/97), Ireland (94/98), Italy (94/98), Luxembourg (95/2000), Netherlands (94/98), Poland (94/2000), Portugal (94/98), Spain (94/98) and UK (94/2000).

Table 1. presents total mobility observed between 1994 and 2000 for all countries listed above. The most striking results are reported for UK which has the highest mobility coefficients for the whole period and demonstrates the extreme intensity of the wage mobility. Poland and Italy seem to be other economies exhibiting a great wage instability in the observed period. .

TABLE 1. Total mobility indices

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
1 Austria (95/98)		2,97	2,82	2,91		
2 Belgium (94/98)	4,29	3,35	3,24	3,09		
3 Denmark (94/98)	2,80	2,81	2,56	2,92		
4 Finland (96/97)			2,97			
5 France (94/98)	2,56	2,33	2,26	1,90		
6 Germany (94/2000	2,60	2,82	2,66	2,44	2,53	2,47
7 Greece (94/98)	3,62	2,75	2,71	2,95		
8 Hungary (94/97)	3,55	3,44	3,14			
9 Ireland (94/98)	4,51	4,25	4,68	4,45		
10 Italy (94/98)	5,35	5,52	5,00	4,96		
11 Luxembourg (95/2000)		1,30	1,34	1,41	1,55	1,58
12 Netherlands (94/98)	1,91	1,93	2,05	2,36		
13 Poland (94/2000)	5,14	4,17		5,21	4,94	4,71
14 Portugal (94/98)	2,72	2,67	2,41	2,43		
15 Spain (94/98)	3,08	3,33	3,30	3,46		
16 UK (94/2000)	7,42	6,66	8,31	8,23	7,44	8,06

The results also indicate a fairly high wage mobility for Ireland. Wage mobility indices for Hungary, Spain and Belgium lie in the middle range. Greece and France fall in the group of

countries with relatively small wage mobility. The highest wage stability is reported for the Netherlands and Luxembourg.

High wage mobility in some countries could be caused by a high growth rate of the economy which is likely to reward most workers, but the benefits might significantly differ in size. It could be also caused by extensive structural changes that would result in a absolute advance of some workers and a demotion of others. In order to decide which of the two factors dominates in each country we are going to examine transfer or individual mobility, i.e. the second component of the wage mobility index (see Table 2).

TABLE 2. Total individual mobility indices

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
1 Austria (95/98)		2,67	2,11	1,79		
2 Belgium (94/98)	3,12	3,16	2,77	2,36		
3 Denmark (94/98)	1,94	2,04	1,55	1,96		
4 Finland (96/97)			2,24			
5 France (94/98)	1,90	1,59	1,49	1,20		
6 Germany (94/2000	1,52	1,40	1,67	1,42	1,29	1,30
7 Greece (94/98)	2,76	2,34	2,27	2,46		
8 Hungary (94/97)	3,40	3,07	2,91			
9 Ireland (94/98)	2,49	2,95	2,47	2,19		
10 Italy (94/98)	4,45	3,44	4,76	3,06		
11 Luxembourg (95/2000)		0,80	0,80	0,96	0,99	1,23
12 Netherlands (94/98)	1,32	1,05	1,25	1,50		
13 Poland (94/2000)	3,64	3,13		4,29	4,73	4,66
14 Portugal (94/98)	2,17	1,95	1,66	1,85		
15 Spain (94/98)	2,46	3,22	2,23	2,73		
16 UK (94/2000)	6,99	6,01	8,23	7,73	6,80	6,18

UK leads the group of economies with dynamic structural changes. It is only plausible that Poland and Hungary, two countries in transition, undergoing deep structural changes, have the highest individual mobility indices. This argument is even more valid in the case of Poland, which used to be the most closed among all the CHER countries and has to go through extensive reforms. Italy demonstrates the equivalent level of transfer mobility as Poland. Belgium, Ireland, Greece and Spain belong to a group of countries where we could suspect some structural changes that would generate relatively high individual mobility. France,

Germany, the Netherlands and Luxembourg are mature economies where changes are rather moderate or do not result in the demotion of some workers.

In our opinion it would be an interesting exercise to compare results obtained for countries that have similar social or demographic structures. To keep the presentation as transparent as possible in the remaining analysis we will focus on Germany, Hungary and Poland. Tables 3, 4 and 5 show some similarities for those three countries.

TABLE 3. Individual mobility by age

	Age	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
Germany	< 30	1,63	1,38	1,59	1,29	1,18	1,22
	30-44	1,61	1,33	1,61	1,44	1,31	1,23
	45+	1,33	1,50	1,80	1,47	1,30	1,43
Hungary	< 30	3,49	3,53	2,35			
	30-44	3,04	3,25	2,73			
	45+	2,10	2,17	2,67			
Poland	< 30	1,80	1,17		3,95	5,62	4,38
	30-44	1,83	1,22		4,14	4,47	4,61
	45+	0,81	0,73		4,68	4,74	4,58

Table 3 presents mobility by age in the analyzed countries. While in Germany there are no significant differences between mobility across age groups, this is not true for Hungary and Poland, where younger workers are much more mobile than older ones. These results indicate greater opportunities for the young on one hand and a higher level of economic insecurity on the other.

TABLE 4. Individual mobility by education level

Country	Education	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
Germany	prim+voc	1,64	1,71	1,97	1,64	1,39	1,57
	seco	1,56	1,28	1,69	1,38	1,31	1,31
	high	1,35	1,37	1,44	1,35	1,20	1,17
Hungary	prim+voc	3,45	3,15	2,57			
	seco	3,26	3,48	2,16			
	high	2,75	2,32	2,75			
Poland	prim+voc	3,65	3,51		5,08	5,47	5,05
	seco	3,60	2,81		3,35	3,96	4,03

	high	3,72	2,65	2,94	3,32	4,07

Individual mobility by education levels are reported in Table 4. Again in Germany wage mobility patterns do not differ significantly across education, while in Hungary and Poland a lower level of education translates into higher mobility which can be explained by a smaller ability of the less educated to adapt to new economic challenges created by the transformation process.

TABLE 5. Individual mobility by gender

Country	Gender	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
Germany	Male	1,53	1,38	1,77	1,43	1,31	1,33
	Female	1,50	1,45	1,44	1,40	1,24	1,21
Hungary	Male	3,36	3,45	2,97			
	Female	3,14	2,65	2,85			
Poland	Male	3,82	3,49		4,88	4,65	4,75
	Female	3,41	2,67		3,44	4,84	4,14

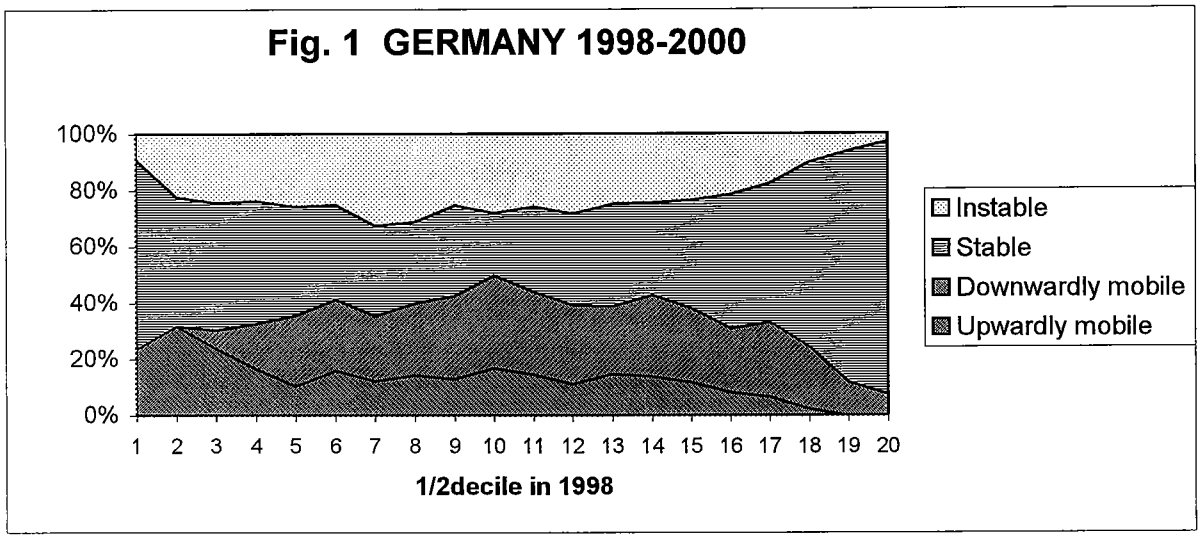
The last table (Table 5) describes individual mobility indices by gender. In all three countries men are more mobile than women. This means that men have a higher chance of advancing, but also of being demoted, on the wage ladder.

2. Individual determinants of wage mobility

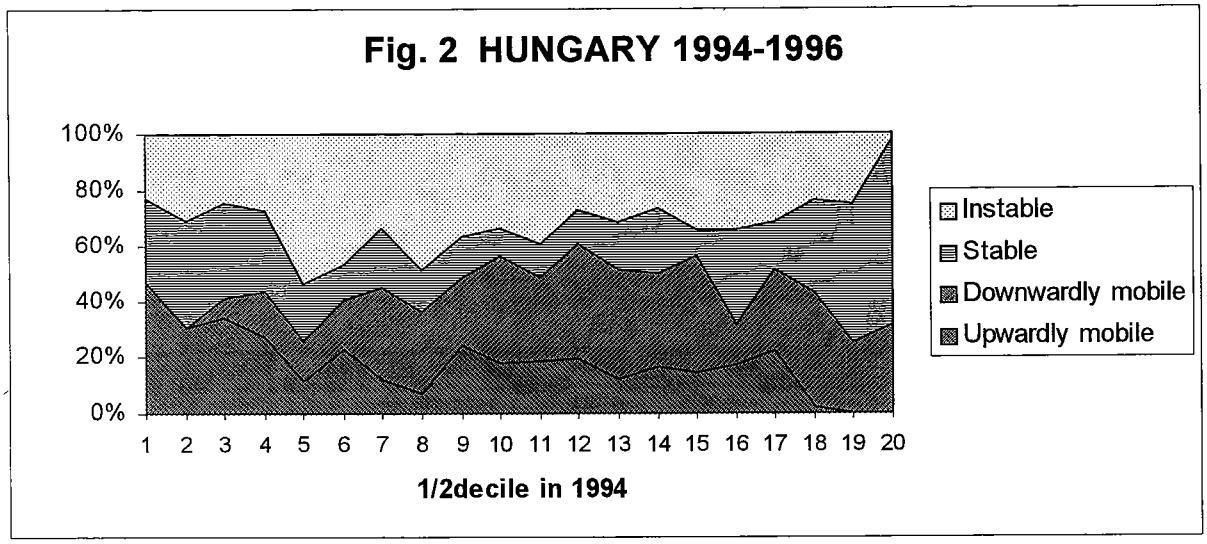
The second part of the paper intends to go deeper into the individual aspects of mobility. We want to explain, what individual characteristics decide about being in the group of advancers or in the group of losers. Applying the concept of income mobility trajectories, proposed by J. Gershuny, and J. Brice (1996), we disaggregate the set of individuals in our sample whose wages have been observed during the period 1998-2000, into four groups. The first group, called the upwardly mobile, consists of workers, who exhibit sustained upward movements by at least one decile and never experienced a fall of their earnings during the three year panel

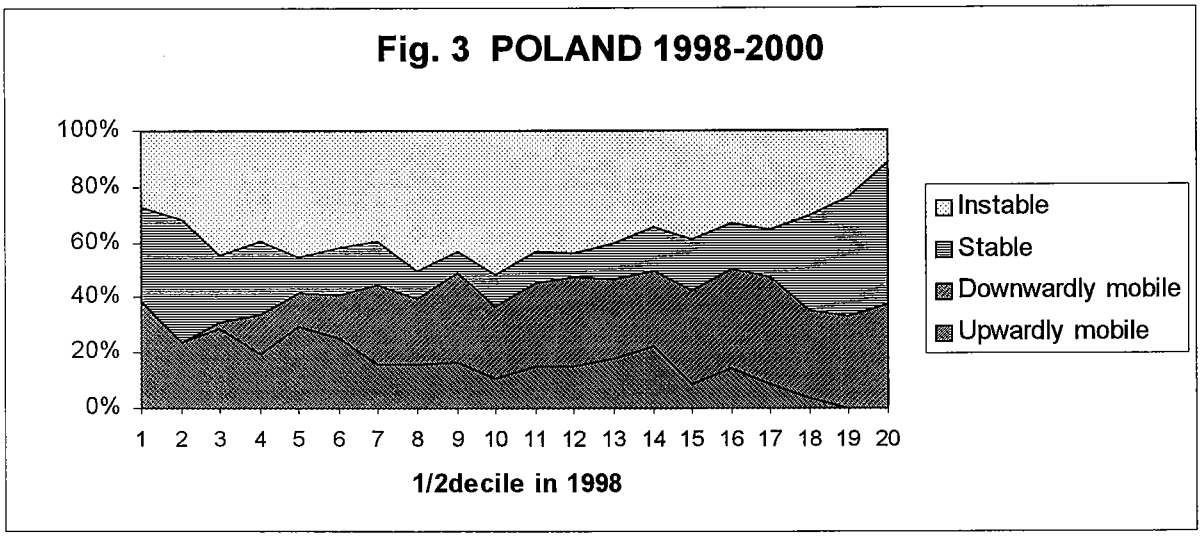
period. The second group, called the stable, includes individuals whose earnings might have moved up or down, but only within the limits of the nearest decile during the whole panel period. To the third group, called the downwardly mobile, we incorporate those employees, whose earnings showed sustained downward movements by at least one decile and never increased. All remaining individuals fall into the last group, called the instable.

Because of the large amount of cases that would have to be analyzed (15 countries x 4 groups = 60 cases) we will restrict our analysis to only three countries:. Figures 1-3 present distributions of employees between these groups during 1998-2000 in Germany, Poland and Hungary respectively.



A comparison of the three figures lets us conclude that there is a much greater instability area for Poland and Hungary (the upper part of figures 2 and 3), where the corresponding distributions are almost rectangular, which means, that uncertainty is experienced by individuals from almost all decile groups in these countries. In Germany (Fig. 1), on the contrary, a vast area of the panel is occupied by the stable group.





Starting from this observation we can go a step further in our analysis.

The idea is that there should be some specific characteristics (may be not distinctly observed, but rather have a latent nature) governing each of the four groups separately, that put individuals in a certain group.

To test this hypothesis the Heckman selection model will be applied. The model consists of two equations. The first one, of the regression type, will be used to describe earnings in each of the four groups. The second one, of a probit form, presents the selection mechanism. To avoid difficulties with inflation effects as well as convertibility of currencies issues, earning variables in the regression equation are defined as the log of yearly measured earnings of a person divided by the mean earnings in a given year. Thus we apply a regression called "regression towards the mean".

Variables used in the Heckman selection model are as follows:

Sex: sex = 1 if male, sex = 0 if female;

Age: age3054 = 1 if age of an earner between 30 and 54, age3054= 0 otherwise,
age55+ = 1 if age of an earner 55 or over, = 0 otherwise,
age3054= age55+ = 0 if age of an earner below 30 years;

Education: edusec = 1 if the individual has only secondary education, edusec = 0 otherwise,
eduuni = 1 if the individual has university education, eduuni = 0 otherwise,
edusec = eduuni = 0 if the individual has only primary education;

Earnings: Y_{-1} – variable Y lagged one year,
Y_{-2} - variable Y lagged two years.

In the probit selection model variables for sex, age and education are defined the same way as in the regression equation. In addition, we define the following variables:

Marital status: mar = 1 if the individual is married, mar =0 otherwise,

Children at home: child = 1 if there are any children at home, child =0 if there aren't,

House: house = 1 if the individual is a house owner, house = 0 if not,

Level of Satisfaction: sat = 1 if the individual is satisfied with her/his income, sat = 0 if not.

Heckman models with the above set of variables were estimated for all four groups of career paths in each of three countries: Germany, Hungary and Poland .

Thus the estimated model is as follows:

$$Y = \beta_0 + \beta_1 Y_{-1} + \beta_2 Y_{-2} + \beta_3 sex + \beta_4 age_{3054} + \beta_5 age_{55} + \beta_6 edu\,\text{sec} + \beta_7 eduuni + u_1$$

and we assume that Y (for each country and each type of career path) is observed if

$$\gamma_0 + \gamma_1 sex + \gamma_2 mar + \gamma_3 child + \gamma_4 age_{3054} + \gamma_5 age_{55} + \gamma_6 edu\,\text{sec} + \gamma_7 eduuni + \gamma_8 house + \gamma_9 sat + u_2 > 0$$

were u_1 and u_2 are white noise errors which have a correlation factor equal to ρ.

Estimation results are presented in the tables A1, A2 and A3 in the Appendix. They can be summarised as follows. The χ^2 test is a Wald test with a null hypothesis that all coefficients in the regression model (except for the constant) are equal to 0. From the results reported in the tables we see that all models are statistically significant. Crucial for our analysis is LR test of independence of the two equations represented by estimate of ρ.(which is given in the

bottom panel of each output table). If the hypothesis $\rho = 0$ was accepted this would mean that the earning equation is independent of the selection mechanism. This in turn would mean, that sociological, demographical or psychological variables used in the probit selection model do not determine people's career paths. In this case different types of mobility would be the products of the regressors and the independent random effects. If however the hypothesis $\rho = 0$ was rejected this would mean that specific economic career paths are determined by statistically significant forces expressed in the selection equation by the regressors and other unobservable factors correlated with them.

In all three countries the stable group is not self-selective. The same applies to all not-stable groups in Hungary an Germany, but not in Poland where the self-selection mechanism seems to be significant.

Factors that increase the probability of belonging to the upwardly mobile group are very similar across all three countries. The single most important factor is a higher level of education. In Poland and Hungary the difference between the beneficial influence of secondary and tertiary education is noticeable, but only in Germany tertiary education results in a radical increase in the odds of having a lasting wage growth. In all countries males are more likely to achieve a long-run wage growth then females. The same holds for young people compared to older individuals.

It is worthwhile to notice that the "opposite" group, the downwardly mobile, does not arise from reversing the characteristics that are favourable to falling into the upwardly mobile group. Interestingly, it is the same factors that make it more likely to belong to both groups, but in the case of the downwardly mobile all factors have a much lesser influence and most of them are statistically insignificant. Despite the fact that we managed to prove the existence of a self-selection mechanism only in the case of Poland, the similarity of factors behind falling into the upwardly mobile and downwardly mobile indicates that there are some unobservable characteristics that decide which individuals will experience a lasting wage growth or wage decline.

3. Job mobility versus wage mobility

In this part we want to analyse the impact of job mobility on wage mobility. We can assume that those individuals who change jobs have a significant contribution to wage mobility. Wage changes of individuals, who continue employment at the same place, depend on the following factors: (1) human capital changes (general or job specific); (2) a gradual fall of employers uncertainty about the employees productivity. Different theories attribute different weights to those two components. The job-search approach (Burdett 1978, Jovanovic 1979) ignore both factors and assume a flat wage profile with respect to job tenure. The on-the-job training theory (Mortensen 1988) ignores the second component and underlines the importance of job specific human capital. According to this approach human capital is a concave function of job tenure, i.e. human capital is increasing with job tenure but at a decreasing rate. Another example is the job-matching approach (Mortensen 1988) that ignores the first component and exposes the second one, but leads to the same conclusions as the on-the-job training theory: the wage increments diminish with the length of time worked for one employer. All three theories predict lower wage increases for employees who stay longer with the same employer (lets call them stayers). They also predict benefits for those who volunteer to change their job (this group will be called movers). According to the job-search approach a mover will shift onto a higher flat wage profile. In line with the two other theories a mover will shift onto a wage profile with a higher gradient. It is thinkable, that the job change will be associated with a fall in wages if it is going to be compensated for by a higher wage dynamics in the future.

To simplify matters we can assume that a job change has two effects:

- a one-off move of the wage profile (which will be denoted as shift)
- a change of the slope of the wage profile (which will be denoted as gradient).

The simplification is based on the assumption that during the first few years after the job change the gradient effect is constant and not diminishing. This is equivalent to averaging the decreasing gradient effects over this period. If we observe a mover's wage at some point in time after the job change we see an overall effect of both changes (TWE: total wage effect). If the observation is made long enough after the job change then we will be able to see the long-run wage effect (LRWE).

The analysis of the impact job mobility has on wage mobility is not as simple as it might seem at first glance. It is not enough to compare stayers with movers since the group of stayers might be very heterogeneous and consist not only of "true" long-run stayers, but also movers

who are only current stayers at this particular moment in time. There are two possible approaches to this analysis. The first one implemented by Holmlund (1984) uses the Heckman's procedure which takes into account the self-selection processes that take place in the stayers' group. The second one has been developed by Abbott and Beach (1994) and Campbell (2001) and is based on a detailed identification of different categories of stayers and movers. We have decided to use the latter approach since it enables us to give a more interesting interpretation of the results.

Lets assume that we are going to observe all individuals in three different moments in time: t_1, t_2 and t_3 such that the time lap between t_1 and t_2 is the same as between t_2 and t_3 and equal to two years. The sample consists of individuals who are employed at all three moments in time. In addition, we are going to define a starting date t_0 such that $t_0 = t_1 - 2$. Now we can define the following categories of individuals:

Stayer: did not change jobs in the period $<t_0, t_3>$,

CMover: current mover – changed jobs in period $(t_1, t_2>$, status in periods $<t_0, t_1>$ and $(t_2, t_3>$ is irrelevant;

PMover: past mover – changed jobs in $<t_0, t_1)$ and did not move in $<t_1, t_3>$;

FMover: future mover – changed jobs in $(t_2, t_3>$, did not move in $<t_0, t_2>$;

PFMover: past and future mover – changed jobs in $<t_0, t_1>$, did not move in $(t_1, t_2>$ and moved in $(t_2, t_3>$.

The group of interest are the CMovers, who changed jobs in the analysed period $(t_1, t_2>$ which will be called the current period. All remaining groups make different categories of individuals who didn't change jobs in the current period.

In order to measure the total wage effect TWE we have to observe

CMover – FMover

since FMovers should have the same unobservable characteristics as CMovers and the difference between the two groups is that FMovers have a long tenure (since they have not moved in period $<t_0, t_2>$) and the effects of their last job change have already diminished. FMovers are in the same phase of their wage profile as Stayers, but will have different unobservable characteristics if Stayers are determined in a self-selection process.

The TWE can be decomposed into two components. The difference

CMover – PMover

identifies the one-off effect of the shift of the wage profile since both groups have the same gradient of their wage profiles. The difference

$$\text{PMover} - \text{FMover}$$

identifies the gradient change effect since in this case we observe the new and old gradients.

The impact of job mobility on wage mobility described above will be valid only in the case of individuals who have a discretionary choice to stay or move. Those, who are forced to move (dismissal, lay-off, employers bankruptcy) have a much lower reservation wage and will be willing to accept job offers that voluntary movers would not accept. Therefore in our analysis we will distinguish between two categories of CMovers: voluntary CMover(v) and forced CMover(f).

In the estimation model we are going to use the same set-up as Holmlund (1984), Keith and McWilliams (1997) and Campbell (2001). At time t_1 we can write the wage equation for the *i-th* individual as follows:

$$\ln(W_{1i}) = \alpha_1 + \beta_1 X_{1i} + \varepsilon_{1i}$$

and similarly for time t_2. By subtracting the equation for t_2 from the equation for t_1 we get the following:

$$\Delta \ln(W_i) = (\alpha_2 - \alpha_1) + \beta_2 \Delta X_i + (\beta_2 - \beta_1) X_{1i} + (\varepsilon_{2i} - \varepsilon_{1i})$$

Further assuming a simple relationship for $(\beta_2 - \beta_1) = \delta\beta_1$ we get:

$$\Delta \ln(W_i) = \alpha + \beta_2 \Delta X_i + \delta \ln(W_{1i}) + \varepsilon_i^*$$

where $\alpha = \alpha_2 - \alpha_1(1 - \delta)$ and $\varepsilon_i^* = \varepsilon_{2i} - (1 + \delta)\varepsilon_{1i}$. Estimations will be performed using the final model:

$$\Delta \ln(W_i) = \alpha + \beta \Delta X_i + \delta \ln(W_{1i}) + \text{CMover(v)} + \text{CMover(f)} + \text{PMover} + \text{FMover} + \text{PFMover} + \varepsilon_i^*,$$

where: W denotes annual wages and salaries (pxxi03), corrected by inflation rates. X denotes the number of hours per week usually worked (pxxl10), and CMover(v), CMover(f), PMover, FMover and PFMover are dummy variables that take the value of 1 if an individual falls in a

given category and 0 otherwise. Voluntary job changes are identified by the variable pxxe18 = 1.

The logarithmic form of the model enables us to transform the parameters to get the rate of wage change associated with each factor. The constant α reflects the wage dynamics for stayers and the dummy variable estimates identify the change in the constant that will characterise each category of movers.

One potential problem that could be associated with the above model is the correlation between the variable W_{1i} and the residual ε_i*. We tried using instrumental variables methods by estimating a separate wage equation for time t_1 and then inserting the predicted values of W_{1i} instead of the observed values. Unfortunately it is not easy to find good instrumental variables for the wage equation. Using instrumental variables in the model resulted in a significant fall of the goodness-of-fit parameter R^2 (below 0.10) so we decided not to use this approach.

The empirical analysis has been carried out for 11 countries, that is for all countries for which all necessary data is reported in the CHER database. The pxxl12 variable (year started with current employer) played a key role in the set-up of the model. For 8 countries data was reported for the period 1994-1998, which gives us t_0=1992, t_1=1994, t_2=1996, t_3=1998. In this case the wage growth equation has been estimated for the period 1994-1996. For two countries, Hungary and Austria, the reported data covers only a shorter 4-year period. In this case we kept the length of the past and current period, but decreased the future period to one year. This means that in those two countries the number of FMovers might be underestimated while the number of Stayers might be overestimated.

Table 6: Stayers and movers by country

	Country	Period	No of employees	Stayers	cmovers (v)	cmovers (f)	pmovers	fmovers	pfmovers
				in %					
12	Austria	1995-1998	1799	78,5%	4,6%	6,1%	8,0%	2,5%	0,4%
13	Denmark	1994-1998	1509	62,6%	8,7%	9,7%	7,6%	8,5%	2,9%
3	Germany	1996-2000	3635	72,6%		12,4%	7,1%	5,7%	2,2%
16	Greece	1994-1998	1263	76,0%	3,0%	5,5%	7,3%	6,6%	1,6%
4	Hungary	1994-1997	544	70,2%	5,0%	12,3%	9,9%	1,8%	0,7%
17	Ireland	1994-1998	1279	73,8%	5,9%	6,7%	6,4%	5,2%	2,0%
5	Italy	1994-1998	2854	84,0%	2,1%	4,0%	5,2%	3,5%	1,2%
7	Netherlands	1994-1998	2316	75,0%	4,2%	6,9%	4,7%	7,4%	1,9%

18	Portugal	1994-1998	2456	80,1%	3,3%	5,7%	5,2%	4,4%	1,2%
19	Spain	1994-1998	2109	78,0%	3,2%	8,5%	4,6%	4,6%	1,2%
10	UK	1994-1998	2231	36,0%	11,6%	24,1%	10,0%	11,0%	7,4%

Table 6 reports the division of workers between different job mobility categories. It is obvious that there are significant differences in the extent of job mobility between the 11 countries. An extreme case is the UK, where job stability for the 6-year period 1992-1998 is so low (36% of Stayers), that the result might seem unrealistic. It is however in line with Campbell's (2001) results from British Household Panel Survey demonstrating that in a nine-years period 1988-1997 the job stability rate was about 27%. Apart from Britain the largest job mobility is reported for Ireland (73.8%), Germany (72.6%), Hungary (70.2%) and Denmark (62.6%), whereas Portugal (80.5%), Austria (78.5%) and Spain (78%) are characterised by the largest job stability.

Table 7: Wages of stayers and movers

Employees	Austria	Denmark	Germany	Greece	Hungary	Ireland	Italy	Netherlands	Portugal	Spain	UK
Stayer											
average wage*	105	101	107	106	102	109	103	101	106	107	99
annual wage growth											
first period	-0,2%	0,9%	0,6%	-0,3%	-7,6%	2,4%	0,0%	1,5%	1,7%	0,6%	1,6%
second period	0,8%	1,8%	1,8%	6,6%	-1,5%	5,1%	2,8%	1,0%	3,2%	2,2%	0,5%
whole period	0,2%	1,4%	1,2%	3,1%	-5,6%	3,7%	1,4%	1,3%	2,4%	1,4%	1,0%
Cmover (voluntary)											
average wage*	79	98		86	84	79	85	107	86	69	92
annual wage growth											
first period	1,1%	5,4%		4,9%	-10,6%	7,4%	10,5%	4,2%	-1,7%	4,6%	8,8%
second period	12,6%	5,6%		8,0%	2,4%	13,5%	4,8%	2,3%	7,4%	11,6%	4,6%
whole period	4,8%	5,5%		6,4%	-6,5%	10,4%	7,6%	3,3%	2,8%	8,0%	6,7%
Cmover (forced)											
average wage*	69	91	77	62	107	62	69	83	66	60	102
annual wage growth											
first period	-4,9%	4,2%	2,1%	1,9%	2,6%	4,2%	-2,3%	0,7%	0,0%	0,4%	1,8%
second period	15,2%	2,7%	9,1%	20,7%	-3,6%	16,9%	13,0%	6,0%	9,0%	7,9%	2,4%
whole period	1,4%	3,4%	5,5%	10,9%	0,5%	10,4%	5,0%	3,3%	4,4%	4,1%	2,1%
Pmover											
average wage*	89	102	83	80	85	77	87	85	77	90	97
annual wage growth											
first period	4,7%	8,0%	13,0%	19,7%	2,8%	24,2%	12,7%	11,7%	16,6%	17,7%	6,9%
second period	0,8%	0,9%	5,3%	6,0%	-8,8%	6,5%	4,8%	1,6%	3,4%	2,4%	0,3%
whole period	3,4%	4,4%	9,1%	12,6%	-1,2%	15,0%	8,7%	6,5%	9,8%	9,8%	3,5%
Fmover											
average wage*	107	104	93	90	86	88	87	114	79	101	105
annual wage growth											
first period	5,1%	0,6%	1,5%	3,4%	-18,1%	5,4%	0,7%	8,3%	3,0%	8,8%	2,3%

second period	3,1%	-0,4%	0,5%	4,6%	3,1%	4,1%	-3,1%	-2,7%	0,5%	-7,0%	-3,0%
whole period	4,4%	0,1%	1,0%	4,0%	-11,6%	4,8%	-1,2%	2,7%	1,7%	0,6%	-0,4%
Pfmover											
average wage*	84	96	67	82	89	68	80	82	70	67	105
annual wage growth											
first period	11,1%	12,1%	14,6%	9,3%	-10,4%	17,7%	23,8%	9,6%	16,0%	26,5%	7,5%
second period	4,2%	1,4%	11,2%	-2,0%	-17,8%	10,4%	3,5%	12,8%	1,3%	-6,8%	0,2%
whole period	8,8%	6,6%	12,9%	3,5%	-12,9%	14,0%	13,2%	11,2%	8,4%	8,6%	3,8%
All											
average wage*	100	100	100	100	100	100	100	100	100	100	100
annual wage growth											
first period	0,1%	2,3%	1,6%	1,1%	-6,0%	3,8%	0,8%	2,6%	2,1%	1,7%	3,4%
second period	1,9%	1,9%	2,8%	6,9%	-2,3%	6,1%	3,0%	1,3%	3,5%	2,2%	1,0%
whole period	0,7%	2,1%	2,2%	4,0%	-4,8%	4,9%	1,9%	1,9%	2,8%	2,0%	2,2%

*) average wage in the middle of period as percent of total everage

Another interesting exercise is to look at the wage levels and wage growth rates for different job mobility categories (Table 7). A striking feature of the table is that for all countries (apart from the UK) Stayers have above average wages, which indicates that they have some characteristics that are rewarded in the job market. Usually (with the exception of Germany) a high wage level for Stayers is associated with a low job mobility in a given country. On the other hand Stayers have lower wage growth rates than different categories of Movers. This means that a job change results in a more dynamic wage growth rate. Furthermore, the analysis of PMovers lets us conclude that wage growth acceleration effect diminish with time.

The above results are in line with the on-the-job training and job-matching theories. Stayers are a group of workers that have achieved a high position in the job market and they do not get any better job offers. They might also be very risk averse. Their wages are growing slowly since they are very likely to have used up all promotion possibilities in their current work place. Movers are still quite low on the wage ladder, so it's fairly easy for them to improve their position through a job change. The benefits from a job change will diminish after a few years.

Now we are going to asses the effects of a job change on the basis of the regression estimates for all 11 countries. Estimation results are reported in Table A4 in the Appendix. We will focus on the calculated total wage effects (TWE) and their two components: wage growth resulting from the shift and from the steeper gradient effects. We present results for two categories of current movers: those who took up another job voluntarily (Table 8) and other current movers (Table 9), who were forced to change job by some unlucky circumstances.

There are three obvious conclusions. First of all, the negative shift value in all countries is indicative of transaction costs associated with a job change. They are measured by a lower income in the new work place, but in reality don't have to mean a lower wage in the new work place, but could be the result of an transitory period of unemployment after quitting the old job and before finding a new one. A lower wage in the new job would be in line with the on-the-job training theory since a job change would result in a massive reduction of job-specific human capital.

Table 8: Voluntary current movers: wage effects resulting from changing the job

		Two-year period			Annual wage growth		
Country		Total wage growth	Wage growth resulting from shift	Wage growth resulting from steeper gradient	Annual wage growth	Wage growth resulting from shift	Annual wage growth resulting from steeper gradient
12	Austria	-11,7%	-11,6%	-0,2%	-6,1%	-11,6%	-0,1%
13	Denmark	8,2%	-7,1%	16,5%	4,0%	-7,1%	7,9%
3	Germany*						
16	Greece	6,8%	-10,8%	19,7%	3,3%	-10,8%	9,4%
4	Hungary	6,8%	-17,8%	30,0%	3,4%	-17,8%	14,0%
17	Ireland	11,2%	-10,4%	24,1%	5,5%	-10,4%	11,4%
5	Italy	10,2%	-6,3%	17,6%	5,0%	-6,3%	8,5%
7	Netherlands	6,0%	-10,2%	18,0%	2,9%	-10,2%	8,6%
18	Portugal	-4,4%	-27,1%	31,1%	-2,2%	-27,1%	14,5%
19	Spain	2,6%	-22,2%	31,9%	1,3%	-22,2%	14,8%
10	UK	10,0%	-3,1%	13,5%	4,9%	-3,1%	6,5%

*) Reason for changing the job not distinguishable for Germany

Table 9: Forced current movers: wage effects resulting from changing the job

		Two-year period			Annual wage growth		
Country		Total wage growth	Wage growth resulting from shift	Wage growth resulting from steeper gradient	Annual wage growth	Wage growth resulting from shift	Annual wage growth resulting from steeper gradient
12	Austria	-27,1%	-27,0%	-0,2%	-14,6%	-27,0%	-0,1%

13	Denmark	1,3%	-13,1%	16,5%	0,6%	-13,1%	7,9%
3	Germany*	-8,0%	-23,1%	19,7%	-4,1%	-23,1%	9,4%
16	Greece	-18,8%	-32,2%	19,7%	-9,9%	-32,2%	9,4%
4	Hungary	9,8%	-15,5%	30,0%	4,8%	-15,5%	14,0%
17	Ireland	-14,9%	-31,4%	24,1%	-7,7%	-31,4%	11,4%
5	Italy	-20,0%	-32,0%	17,6%	-10,6%	-32,0%	8,5%
7	Netherlands	-8,7%	-22,6%	18,0%	-4,4%	-22,6%	8,6%
18	Portugal	-16,9%	-36,6%	31,1%	-8,8%	-36,6%	14,5%
19	Spain	-20,0%	-39,3%	31,9%	-10,5%	-39,3%	14,8%
10	UK	-0,1%	-12,0%	13,5%	-0,1%	-12,0%	6,5%

*) Reason for changing the job not distinguishable for Germany

Secondly, in all countries transaction costs experienced by those, who are forced to change jobs are significantly higher than in the case of voluntary movers. This is a straight forward conclusion and an additional reason to analyse those two groups separately.

Thirdly, the benefits from a job change differ significantly across countries. We are going to measure the profitability of a job change by the payback period, i.e. the time at the new job required to set off the loss resulting from the shift (see Table 10). On one extreme we have Austria where there is no gradient change relative to Stayers which rules out the possibility of catching up. Since the negative gradient effect is statistically insignificant, in reality the results indicate a very long catching-up period. In countries like Portugal, Spain and Greece workers will be discouraged from job mobility by the long pay-back periods for both voluntary and forced movers.

Table 10
Payback period for voluntary and forced movers
(in years)

	Country	Voluntary current movers	Forced current movers
12	Austria		
13	Denmark	0,97	1,84
3	Germany	x	2,92
16	Greece	1,27	4,31
4	Hungary	1,50	1,29
17	Ireland	1,01	3,49
5	Italy	0,81	4,75
7	Netherlands	1,30	3,10
18	Portugal	2,33	3,37
19	Spain	1,81	3,61
10	UK	0,50	2,02

*) Reason for changing the job not distinguishable

On the other extreme we have the UK, where a job change results in net benefits fairly quickly and this supports again the conclusion that Britain has the most competitive labour environment in the Europe. Job mobility will be encouraged mainly by the job markets in Denmark and Hungary, but also in Italy and Ireland, but in the last two countries only with respect to voluntary movers.

The high level of job mobility in Hungary is certainly the effect of the transition to a market economy. A striking result reported for this country is that the pay-back period for voluntary movers is longer than for forced movers, which does not seem plausible. The reason behind this paradox could be the fact that most of the forced movers will be workers whose employers have gone bankrupt due to economic environment changes. They are very likely to be low-wage earners and will have therefore a lot of possibilities to find better paid jobs. If we reduce our sample to EU countries only we can see a clear (but not deterministic) relationship between benefits from job mobility and the welfare level of a country.

Appendix

Table A1: Heckman selection model (regression model with sample selection)

GERMANY 1998-2000

	Stable	Upwardly mobile	Downwardly mobile	Instable
Regression equation				
Y				
Y-1	**,3622**	**,4800**	**,5565**	**,7146**
Y-2	**,2496**	**,3411**	**,2335**	**,1309**
sex	**,4203**	**,0289**	**,0343**	**,0312**
age3054	,0024	-,0005	,0040	,0080
age55	-,0317	-,0129	-,0129	-,0198
edusec	,0337	,0031	,0282	-,0032
eduuni	**,0914**	**,0496**	**,0860**	**,0355**
const	**-,1050**	**-,0513**	**-,0551**	,0081
Selection equation				
sex	**,0864**	-,0750	,0579	**-,1173**
mar	-,0135	**,1380**	**-,1762**	-,0350
child	-,0059	-,0068	,0468	-,0110
age3054	.0628	-0015	,0106	**-,0955**
age55	**-,1762**	**,4530**	-,0779	,0497
edusec	,0298	-,1309	-,0453	,0928
eduuni	**-,2076**	-,1526	**,2190**	**,1703**
house	**-,1991**	**,1875**	,0623	,0542
sat	-,0368	**-,1332**	**,1069**	**,0954**
const	**,2758**	**1,1456**	**,7153**	**,7205**
Diagnostic statistics				
athrho	.0986	,0844	-,3388	-,6891
lnsigma	-1,3605	-1,4726	-1,4611	-1,5158
rho	,0983	,0842	-,3264	-,5974
sigma	,2565	,2293	,2320	,2196
lambda	,0252	,0193	-,0757	-,1312
Wald chi2	1675	11364	10325	13376
LR test of indep. eqns. (rho = 0): chi2=	,18	,55	5,57	31,54
prob>chi2=	,6709	,4573	0,0183	,0000

Parameters in bold are significant at 5% level.

Table A2: Heckman selection model (regression model with sample selection)

Hungary 1994-1996

	Stable	Upwardly mobile	Downwardly mobile	Instable
Regression equation				
Y				
Y-1	**,2002**	**,2654**	**,3778**	**,5267**
Y-2	**,2984**	**,4545**	**,3361**	**,2402**
sex	**,1257**	**,0835**	**,1001**	**,1071**
age3054	,0815	**,0330**	,0701	,0289
age55	,0113	-,0275	,0448	-,0555
edusec	**,1047**	**,0864**	,0360	,0853
eduuni	**,2284**	**,1081**	,0767	,0708
const	**-,2877**	**-,1699**	-,0692	**-,1717**
Selection equation				
sex	**,2153**	-,0387	-,0951	-,0303
mar	-,1310	**,2157**	,0371	-,0764
child	,0716	-,0645	,0383	-,0169
age3054	-,1530	,1970	-,2537	,1469
age55	-,1460	,4386	**-,5290**	,2385
edusec	,1241	,0128	,1546	**-,2689**
eduuni	**-,3188**	-,0745	**,4964**	-,0015
house	**-,3215**	,1369	-,0961	,2146
sat	**-,3660**	**-,3043**	**,3718**	**,4057**
const	**1,1344**	**,5936**	**,7624**	,2785
Diagnostic statistics				
athrho	,1113	,0679	-,8254	,0946
lnsigma	-,8751	-,8306	-,8593	-,8700
rho	,1108	,0678	-,6780	.0943
sigma	,4168	,4358	,4235	,4189
lambda	,0462	,0296	-,2871	,0395
Wald chi2	348	790	907	848
LR test of indep. eqns. (rho = 0): chi2=	,43	,19	17,42	,15
prob>chi2=	,5131	,6666	,0000	,7025

Parameters in bold are significant at 5% level.

Table A3: Heckman selection model (regression model with sample selection)

Poland 1998-2000

	Stable	Upwardly mobile	Downwardly mobile	Instable
Regression equation				
Y				
Y-1	**,1569**	**,2104**	**,2266**	**,4685**
Y-2	**,5223**	**,5829**	**,5720**	**,3493**
sex	**,0731**	**,1548**	**,1889**	**,1954**
age3054	**,0743**	-,0026	,0569	**,0851**
age55	,0279	**-,1458**	-,0139	-,1227
edusec	,0409	**,1357**	**,0989**	**,1463**
eduuni	**,0819**	**,1962**	**,1500**	**,1913**
const	**-,2144**	-,0864	**-,1319**	**-,3784**
Selection equation				
sex	,0866	**-,1278**	-,0976	-,0495
mar	-,1107	-,0019	-,0246	,0444
child	,0006	-,0201	,0199	,0148
age3054	-,0707	,0581	-,0937	,0030
age55	,1572	,0638	,1127	-,1689
edusec	**,2108**	**-,2359**	**-,1632**	-,0514
eduuni	-,0742	**-,2883**	-,0159	,0317
house	,0400	**,0999**	**,1403**	,0112
sat	**-,4130**	,0395	**,1859**	**,2692**
const	**,8481**	**,9392**	**,7314**	**,2801**
Diagnostic statistics				
athrho	,1299	-1,4666	-1,2403	,0486
lnsigma	-,8749	-,5091	-,4768	-,6418
rho	,1292	-,8989	-,8455	,0485
sigma	,4169	,6011	,6208	,5264
lambda	,0539	-,5403	-,5249	,0255
Wald chi2	1179	2296	2057	1809
LR test of indep. eqns. (rho = 0): chi2=	,98	260,30	161,03	,07
prob>chi2=	,3212	,0000	,0000	,7952

Parameters in bold are significant at 5% level.

Table A4: Regression parameters for log wage change equation with stayers and movers

Country		Depvar	R-square	Intercept	lnwage	dhours	cmover1	cmover2	pmover	fmover	pfmover
12	Austria	dlnwage	0,4036	**6,6557**	**-0,5418**	**0,0023**	-0,0900	**-0,2816**	0,0328	0,0348	0,0948
13	Denmark	dlnwage	0,2905	**4,6556**	**-0,3944**	-0,0004	**0,0779**	0,0118	**0,1517**	-0,0007	**0,1951**
3	Germany	dlnwage	0,3572	**3,6758**	**-0,3530**	**0,0065**	x	**-0,1276**	**0,1350**	-0,0446	**0,1394**
16	Greece	dlnwage	0,4501	**8,0421**	**-0,5458**	0,0009	-0,0399	**-0,3130**	**0,0750**	**-0,1052**	-0,0453
4	Hungary	dlnwage	0,2241	**4,6307**	**-0,3833**	0,0023	-0,0815	-0,0539	0,1146	-0,1476	-0,0161
17	Ireland	dlnwage	0,5065	**4,6687**	**-0,4982**	0,0015	0,0358	**-0,2317**	**0,1451**	-0,0708	-0,0093
5	Italy	dlnwage	0,4838	**5,3965**	**-0,5405**	0,0016	**0,0181**	**-0,3019**	**0,0835**	**-0,0789**	**0,1092**
7	Netherlands	dlnwage	0,3247	**3,6789**	**-0,3522**	**0,0073**	**0,0850**	**-0,0636**	**0,1925**	0,0270	**0,2201**
18	Portugal	dlnwage	0,1665	**2,9283**	**-0,2084**	**0,0023**	-0,0655	**-0,2054**	**0,2505**	-0,0203	**0,2940**
19	Spain	dlnwage	0,4489	**6,9761**	**-0,4822**	**0,0021**	-0,0538	**-0,3027**	**0,1967**	**-0,0800**	**0,2074**
10	UK	dlnwage	0,2986	**2,4097**	**-0,2625**	**0,0124**	**0,1291**	0,0330	**0,1607**	0,0340	**0,1830**

Entries in bold are significant at 5% level.

Table A5: Estimated total wage effects (TWE), Shift and Gradient effects

		Voluntary current movers					Forced current movers				
		Regression parameters			Contribution to TWE		Regression parameters			Contribution to TWE	
Country		TWE	Shift	Gradient	Shift	Gradient	TWE	Shift	Gradient	Shift	Gradient
12	Austria	-0,1248	**-0,1228**	-0,0020	98%	2%	**-0,3164**	**-0,3144**	-0,0020	99%	1%
13	Denmark	**0,0786**	-0,0738	**0,1524**	33%	67%	0,0125	**-0,1398**	**0,1524**	48%	52%
3	Germany*						**-0,0830**	**-0,2626**	**0,1796**	59%	41%
16	Greece	0,0653	-0,1148	**0,1801**	39%	61%	**-0,2078**	**-0,3880**	**0,1801**	68%	32%
4	Hungary	0,0661	-0,1961	0,2622	43%	57%	0,0937	-0,1684	**0,2622**	39%	61%
17	Ireland	0,1066	-0,1093	**0,2159**	34%	66%	**-0,1608**	**-0,3768**	**0,2159**	64%	36%
5	Italy	0,0970	-0,0654	**0,1623**	29%	71%	**-0,2230**	**-0,3854**	**0,1623**	70%	30%
7	Netherlands	0,0580	**-0,1075**	**0,1655**	39%	61%	**-0,0906**	**-0,2561**	**0,1655**	61%	39%
18	Portugal	-0,0452	**-0,3160**	**0,2708**	54%	46%	**-0,1851**	**-0,4559**	**0,2708**	63%	37%
19	Spain	0,0261	**-0,2506**	**0,2767**	48%	52%	**-0,2228**	**-0,4994**	**0,2767**	64%	36%
10	UK	**0,0951**	-0,0315	**0,1267**	20%	80%	-0,0010	**-0,1277**	**0,1267**	50%	50%

*) Reason for changing the job not distinguishable for Germany

Entries in bold are significant at 5% level.

References

M. Abbott, Ch. Beach (1994), "Wage Changes and Job Changes of Canadian Women". *Journal of Human Resources* 29, 429-460.

K. Burdett (1978), "A Theory of Employee Job Search and Quit Rates". *American Economic Review* 68, 212-220.

D. Campbell (2001), "Estimating the Wage Effects of job Mobility in Britain". *Studies in Economics* 117, University of Kent.

G. S. Fields, E. A. Ok: (1996), "The Meaning and Measurement of Income Mobility". *Journal of Economic Theory* 71, 349-377.

G. S. Fields, E. A. Ok: (1999), "Movement of Incomes". *Economica* 66, 455-471.

J. Gershuny, J. Brice (1996), *Income mobility in five countries: a research note*, Essex University, PACO Project.

B. Holmlund (1984), "Job Mobility and Wage Growth: A study of Selection Rules and Rewards". In: *Studies in Labor Market Dynamics*, G.R. Neemann and N.C. Westgard-Neilson (eds), Springer, Berlin, 238-260.

B. Jovanovic (1979), "Job Matching and the Theory of Turnover". *Journal of Political Economy* 87, 972-999.

K. Keith, A. McWilliams (1997), "Job Mobility and Gender-Based Wage Growth Differentials". *Economic Enquiry* 35, 320-333.

A. Markandya (1984), "The welfare measurement of changes in economic mobility". *Economica* 51, 457-471.

D.T. Mortensen (1988), „Wages, Separations, and Job Tenure: On-the-Job Specific Training or Matching?". *Journal of Labor Economics* 6, 445-470.