

# Wage mobility in times of higher earnings disparities: is it easier to climb the ladder?

(Work in progress) \*

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## Abstract

In this paper I study the earnings mobility in Poland and its changes over the 1995 – 2006 period. Using both transition matrices and a wage mobility index I find that the overall wage mobility is lower than in the mid nineties, though it has been increasing back in the last few years. Men are more likely to move across the wage distribution, though a decade ago women had higher wage mobility.

For comparison I analyze the earnings mobility of UK workers, finding that although its degree is comparable to the Polish one other differences in mobility patterns stand out. British employees are much less likely to experience downward transitions in the wage distribution whereas Polish workers have higher probability of moving by more than one decile.

The analysis shows also that the earnings mobility of low wage workers is relatively high. They are however (particularly in Poland) more likely to exit employment, and those entering the labour market in majority take up low paid jobs.

Finally, changes in earnings mobility in Poland do not seem to be linked to changes in the overall wage dispersion.

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# 1 Introduction

The last years saw a considerable rise in cross sectional wage inequalities in Poland, yet it is not known if and how has it changed the individuals earnings mobility. Changes in the cross sectional earnings disparities may – but do not have to – imply changing mobility patterns. Burkhauser et. al (1997) notice that the observed changes in the cross-sectional distribution may be the consequence of changes in the relative labour earnings of workers, or in the pattern of earnings mobility for workers, or some combination of both. If the rise in Polish wage inequality, presented in section 3, has come from increased transitory fluctuations in earnings whereas the individuals face higher wage mobility, the consequences and implications for social and labour market policy are of a lesser importance. If however the wage mobility remained the same or decreased, rising lifetime earnings inequality, consequences are more serious.

To the author’s knowledge, the question of how much mobility there is in the wage distribution in Poland has not been researched so far. One of the reasons for that is the scarcity of data availability, especially panel survey of individuals, which would include labour income data.

In this paper I study wage mobility of Polish workers. Constructing transition matrices and a wage mobility index I analyze what is the degree of movements across the wage distribution and how has it changed over the last ten years. I study also the level and changes in earnings mobility among the UK employees, which allows for a better judgment whether the degree of earnings transitions in Poland is in fact high or low. I analyze which groups of workers – from the bottom, middle or upper part of the distribution are the most mobile. I also try to determine whether changes in the wage inequalities over the past ten years had an impact on wage mobility. This paper compares also the measurement of wage mobility in Poland using two available data sources on labour income: the Household Budget Survey and the Labour Force Survey.

Section 2 describes the data used for the analysis. Section 3 presents changes in the earnings inequalities in Poland since mid nineties. In section 4, wage mobility of Polish employees is analyzed whereas section 5 compares these results to the UK case. Section 6 presents the changes in earnings mobility in the light of increasing wage disparities. Section 7 concludes, summarizing the research results.

## 2 Data description

The availability of data which allow the analysis of earnings mobility in Poland is rather scarce. The data used in this paper come from two sources: Polish Household Budget Survey (PHBS) and Polish Labour Force Survey (PLFS). Each of them has its advantages and drawbacks, therefore I use the two to provide comparisons and complementary information.

The PHBS is conducted yearly on a sample of ca 33 thousand households, whereas the PLFS surveys ca 45 thousand individuals quarterly. In both surveys the individuals can be observed only for two consecutive years<sup>1</sup>. PHBS seems to be a more accurate source of information on wage data than LFS. In particular, the wage reporting rates for employees in the PHBS are much higher (in 2005: 98 per cent vs. 66 per cent in PLFS). The respondents in PLFS also tend to round up data (as a result, there are high peaks of responses at round numbers, such as 1000 PLN). Furthermore, in the PLFS the higher earnings are underreported: the reporting rate for employees with higher education is lower than for these with lower levels of education by a few percentage points, which leads to lower levels of average wage. As a result the average PLFS wage amounts to 75 per cent of average wage in the economy (net terms), whereas the PHBS – for 86 per cent. Also the earnings distribution is affected, as the PLFS is biased towards lower earnings, its median to average ratio is 0.86, whereas it's 0.82 in PHBS and 0.81 in the Structure of Earnings Survey<sup>2</sup>. To conclude, the PHBS data is likely to better reflect the degree of wage mobility in Poland. However, since I have longer data series only for the PLFS, this data will be used to analyse changes in the earnings mobility across time whereas the PHBS will provide a comparison for the potential level of wage mobility in a point in time.

One has to keep in mind that there are statistical factors which might impact the analysis of changes in wage mobility across time using PLFS. One of them is the panel attrition rate. The percentage of individuals dropping out of the panel has increased over time, from less than 7 per cent in 1995/96 to around 19 per cent in 2005. It is hard to determine to what extent the rising drop out rates might change the earnings transitions. However, one can not notice any tendency for lower or higher wage workers to drop out

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<sup>1</sup>Due to changes in methodology in the PLFS in 1999 and a lack of two waves of the survey, it is impossible to construct the 1998/99 panel and the 1999/2000 is limited in size.

<sup>2</sup>The Structure of Earnings Survey is a survey of full time employees conducted every two years (in particular: 1996, 1998, 1999, 2001, 2002, 2004, 2006) by the Polish Central Statistical Office. It is representative for ca. 6 – 7 million of employees.

more often. The average wages for full time employees who remain in the sample are the same as of those dropping out in 1995/96, slightly higher in 2000/01 and lower in 2004/05. Therefore one might expect the changes in the attrition rates do not change the mobility results in a consistent way. The other factor which might impact the analysis of earnings transitions with PLFS data are the response rates, i.e. percentages of employees reporting their wages. These have fallen considerably across the time, from over 95 per cent in 1995 to 65 per cent in 2006. This drop in response rate has been much higher among the better educated earners<sup>3</sup>, hence one expects that high wage earners underreport wages more often, which may lead to underestimating the degree of earnings mobility over the years.

I use the 2004-2005 PHBS and 1995-2007 PLFS datasets. The wage variables are the monthly earnings net of deductions (social contributions and tax). As in the PHBS data there is no information on hours worked (and the information available in PLFS may pose difficulties to derive reliable hourly earnings), I use monthly wages of full time workers only. I restrict my sample further, by focusing on employees (as labour income data for employers, self employed and helping family members is available in PHBS only). The restricted PHBS sample provides a better picture of reality, as the reporting rates for workers other than employees are very low (below 10 per cent for self employed and for employers compared to more than 95 per cent for employees). For the final analysis of the earnings mobility I exclude all people aged less than 25 (since I want to focus on these who have left full time education) and more than 59. In the first part of the analysis, transitions out and to employment are taken into account, hence the sample includes also the unemployed and the inactive, as well as flows to “missing wage (i.e. being a full time employee who does not report its wage) and “other employment status” (i.e. part time employee, self employed, employer, helping family member).

Finally, section 4 focuses on comparing the earnings mobility of Polish workers with the UK one. I use the British Household Panel Survey (BHPS) dataset (waves 2- 14, i.e. data for years 1991 -2004). The BHPS is a longitudinal panel data set including information on ca. 5500 (wave 1) to more than 10 000 households (from 2001), i.e. 10 – 17 thousand individuals. Its missing wage data is imputed and it seems to reflect the overall economy wages rather well<sup>4</sup>. For a more detailed description of the BHPS, see for example Lynn et al. (2006).

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<sup>3</sup>Between 1995 and 2005, the percentage of wage reporters among full time employees with tertiary education fell from 92 per cent by 35 p.p., whereas among the employees with at the most basic vocational education from 97 per cent by 25 p.p.

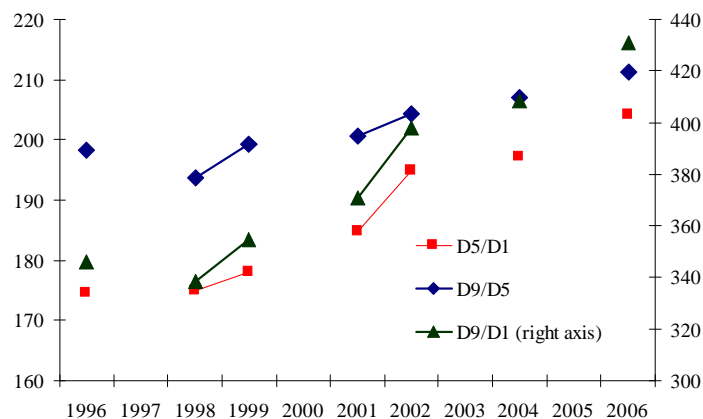
<sup>4</sup>For example, the average gross wage for FT employee in BHPS in wave m was more than 96% of average wage in 2003 according to ASHE data.

All the analyses are carried out separately for men and women, so as to take into account differences in their employment patterns.

### 3 Earnings inequalities in Poland - trends and patterns

Wage inequalities have been rising in Poland in almost the whole of the post transformation period (cf. MPiPS 2008). In 1996 the earnings in the ninth decile were 3.46 times higher than those in the first decile, by 2006 this gap has risen to 4.31 (cf. Figure 1). The rise in wage disparities was particularly sharp between 2001 and 2002. In mid nineties the inequalities in the lower part of the distribution were much lower than in the upper one, by 2006 this gap became much smaller due to a higher rise in inequalities among the workers earning less than the median wage.

Figure 1: Wage inequalities in Poland, 1996 – 2006.



*Own calculations based on the Structure of Earnings Survey data.*

The earning disparities in Poland are among the highest in Europe. According to the European Commission (2005) data, out of the EU countries only Estonia, Latvia and Romania ranked higher in terms of the D9/D1 ratio.

## 4 Wage mobility

### 4.1 The degree of wage mobility in Poland

One of the possible ways of looking at the earnings mobility are the transition matrices, which present flows between deciles in the earnings distribution and/or into and out of employment. Tables A1(a), A.1(b) and A.1(c) in the Appendix present transitions for all employees, male and female ones respectively. The picture that emerges shows a quite high degree of mobility within the earnings distribution. The percentage of employees staying over year in the same decile is actually lower than the percentage of employees moving across the distribution, either upwards or downwards.

Only about thirty per cent of employees remain in the same decile one year later, although it is certainly subjective to decide if it is a lot or not. At the same time there are differences in the lower and upper part of the wage distribution. Those at the bottom end are more likely to escape their deciles; though it is due not only to higher earnings mobility since many of these escapes result from exiting the employment at all. Still, for the lowest earners about 40 per cent move up in the distribution and more than a half of them move above one decile up. A few percent (7.8 in case of men in the 2nd decile) make it beyond the median earnings.

Employees from the middle of the distribution are most likely to change their positions in the decile distribution, both upwards and downwards. They are more likely to move up one or more decile than to remain in the same one next year. The percentages of employees moving up from the top of the distribution are lower, but this is most probably an artefact, as the deciles in the upper part are much wider than in the bottom of the distribution.

What is interesting, there is also a quite substantial degree of downwards earnings mobility. For most of the wage distribution, employees are as much likely to move one decile up, as to go one decile down. The shares of workers moving down more than one decile are also quite significant, above 10 per cent in the middle of the distribution.

One would expect differences in the earnings transitions of male and female workers, due to their different career paths and employment patterns. Indeed, the degree of persistence in particular deciles is higher for women. Men are also more likely than women to move upwards for each of the deciles and the downward transitions take place more often among female workers.

There is substantial immobility within unemployment and inactivity, which can be explained by a relatively difficult labour market situation in Poland in this period of time and the structural character of the unemployment (cf. MGiP 2005). It is interesting however, that the employees from the bottom deciles are much more likely to exit employment (16 per cent from 1st decile and 10 per cent from the 2nd, compared to less than 3 per cent for the highest two deciles). Male workers move mostly to unemployment, whereas female have a relatively high share of withdrawal from the labour market. At the same time, those who enter employment are much more likely to take up lower paid jobs (more than 50 per cent enter the lowest two deciles, compared to only 17 per cent earning above median).

The above analysis is based on the PHBS data. Table A.2 (a) and A.2 (b) in the Appendix present a summary of analogical results based on the PLFS data. As mentioned in the section 2, the latter tend to underestimate the degree of wage mobility, due to the nature of wage responses. It does however confirm the basic regularities observed in the PHBS: the lower earnings mobility of women, higher persistence in the upper deciles, large outflows out of employment occurring mostly in the lowest deciles (to unemployment in case of men and inactivity for women) and high inflow of those entering employment to the bottom of the distribution. The PLFS will be used in the next section for analyzing changes in the wage mobility.

This analysis focuses only on yearly transitions due to data restrictions. However, mobility seems likely to rise the longer the time period taken into account. Dickens (2000) provides evidence that mobility over a three year period is slightly higher than yearly transitions, although the degree of immobility is still significant. Cardoso (2005) obtained similar results.

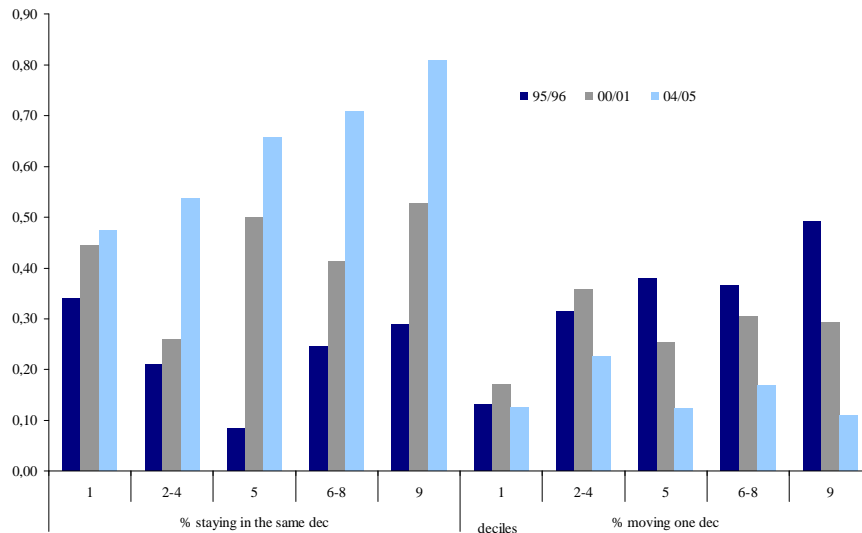
## **4.2 Changes in the wage mobility over time**

As pointed out above, determining whether a particular percentage of employees moving up or down the wage distribution means a high or low level of mobility is a subjective matter. Therefore it might be more interesting to compare the level of earnings mobility with other countries (which will be presented in the next section) and its changes across the time.

Since the earnings structure in Poland has been changing thoroughly since the transition, resulting in rising wage inequalities, one might expect also changes in the mobility within the wage distribution. The Figure 2 presents a comparison of transition rates across

the wage distribution over time for three periods: 1995/1996, 2000/2001 and 2004/2005 for male employees (LFS data). The tables presenting transitions for females are included in the Appendix (A.2 (a), A.2(b)). It is evident that thus measured earnings mobility has decreased over time. The proportion of workers remaining in the same decile has risen considerably. The increases have been more pronounced in the upper half of the distribution. The percentage of one decile transitions has decreased and also these falls were higher among the higher wage earners.

Figure 2: Earnings transitions: 1995/1996, 2000/2001 and 2004/2005, male employees



*Own calculations, based on LFS data.*

Women have lower earnings mobility than men, as presented in the previous part. PLFS data shows however this has changed across the past ten years, since in the mid nineties the female earnings mobility relative to the men was much higher. Yet, in general the trends in transitions across the wage distribution follow the men's ones. The wage mobility of female workers has declined over years, particularly in the upper part of the distribution.

To sum up, the analysis of the decile transitions across the wage distribution points to a relatively high wage mobility. At the same time the degree of mobility has fallen and fewer individuals change the deciles in the distribution nowadays than 10 years ago. As



Dickens (2000) points out, analysing wage mobility with transition matrices may bring uncertain results, since it does not account for mobility within the distribution and the widening of the deciles with rising wage inequalities (which means that the individual's earnings must grow or drop more for him/her to leave a particular decile). Since the earnings inequalities rose substantially in Poland within the period of analysis the results I obtained may be misleading. Hence I will look at other potential measures of wage mobility.

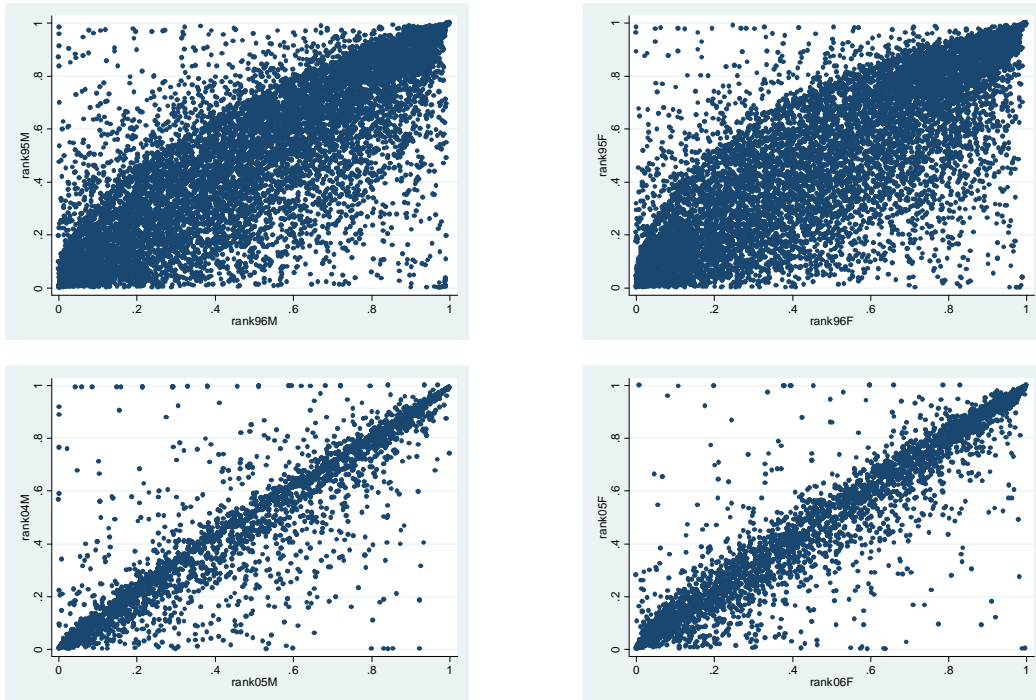
### 4.3 Mobility index

I will compute another mobility estimate, following Dickens (2000). As a pure mobility measure, he suggests one based on the actual ranking of individuals in the wage distribution in each year and analysis of the degree of year - to - year movement . However, one must take into account that only individuals who are present in the wage distribution in two consecutive years are considered, thus there are potential biases arising from the exclusion of workers dropping out of employment.

The scatterplots presented below show the earnings ranking of employees in two consecutive years, for two periods: 1995/1996 and 2005/2006, separately for men and women. The observations in the 2005/2006 graph tend to concentrate along the 45 degree line whereas the 1995/1996 ones are much more dispersed, which confirms that earnings mobility has fallen over time, as noted above.<sup>5</sup> In 1995/96 women tended to move across the wage distribution slightly more, whereas in 2005/06 their earnings seem to be more concentrated than men's.

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<sup>5</sup>The number of observations in 2005/06 is about 30 per cent lower than in 1995/96, though the drop in panel attrition accounts for only half of this difference. As presented in section 2, it seems changes in panel attrition did not impact the degree of wage mobility in a systematic way.



Source: own calculations based on LFS data.

Earnings ranking, 1995/96 (upper graphs) and 2005/06 (lower), male (left) and female employees (right).

The mobility measure suggested by Dickens (2000) is based on earnings variable with the age effect excluded (i.e. residuals of regressions of log of wages on age dummies). The mobility between year  $t$  and  $t+1$  is defined as:

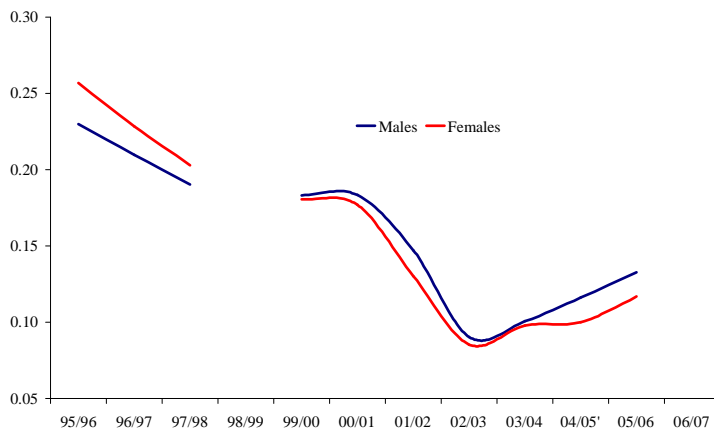
$$M = \frac{2 \sum_{i=1}^N |rank_{it+1} - rank_{it}|}{N}$$

where the rank defines the cumulative distribution function for earnings and the  $N$  is the number of employees reporting wages. Its minimum value, 0 means no mobility in the wage distribution (the ranking of employees remains the same over the year), whereas  $M=1$  describes a situation, in which earnings in the two analysed years are perfectly negatively correlated.

Plotting the constructed mobility index against time one notices a considerable fall in earnings mobility between 1995 and 2002, both for men and women. The highest decrease took place between 2000 and 2002. The index for males was 0.23 in 1995; it fell

by more than a half by 2002. For female workers the mobility index dropped by more than 60 percent to 0.098 in 2002/2003. Since 2002 a visible increases in the mobility index can be observed, though the 2005/2006 levels are still far below these noted in the late nineties. Furthermore, the differences in wage mobility between men and women have reversed. Until 2000 the earnings mobility among female workers was higher than among men whereas since 2000 men tend to move more across the wage distribution and the gap tends to rise in the last few years.

Figure 3: One year mobility index for men and women, 1995-2007



Source: own calculations based on LFS data. MID FEBRUARY UPDATE 2007

The analysis of transition matrices has shown that the mobility has decreased particularly at the upper end of the wage distribution. Table A.3 in the Appendix reports the mobility indexes computed for male and female workers by decile of origin (in the first year). It is evident that in case of women the decline in the mobility index between 1995/96 and 2005/2006 has not only been higher but also much more homogenous across the distribution. Apart from the first decile, where the drop in mobility was the lowest, both low and high earning female workers are much less likely to move across the earnings distribution (though the drop has been more pronounced in the upper part of the distribution). In the same period the mobility index for men fell by 43 per cent, although the decline was much lower among the workers in the lower end of the distribution (ca. 36 per cent for 2-5 decile) and much higher in the top three deciles (45-60 per cent). It is also interesting to see that the relative position of the bottom earners has improved. In 1995/96 the mobility indexes for male and female workers from the first decile were much

lower if compared to other deciles (2- 8 in particular), but although the probabilities of moving across the earnings ladder diminished for all the workers, they decreased the least for the employees from the first deciles, both men and women. As a result, the situation reversed and the low wage (first decile) earners' mobility indexes in 2006 were much higher than in any other decile of origin.

It is worth noting that the highest fall in the earnings mobility took place in the period of a significant economic slowdown and a worsening labour market situation (1999 – 2002). One might expect that the economic conditions did play a role in the mobility changes. High unemployment made it more difficult to change jobs (which may be an important source of increases in individual wages) and discouraged workers from claiming wage rises. The situation on the labour market started improving in 2004, and a rise in earnings mobility may be seen since then.

## 5 Polish wage mobility in an international perspective

As mentioned before, it is quite subjective to judge whether the reported levels of wage mobility are in fact high or low. One may however look at how they relate to earnings mobility observed in other countries. Below I present the comparison of mobility of Polish and British workers.

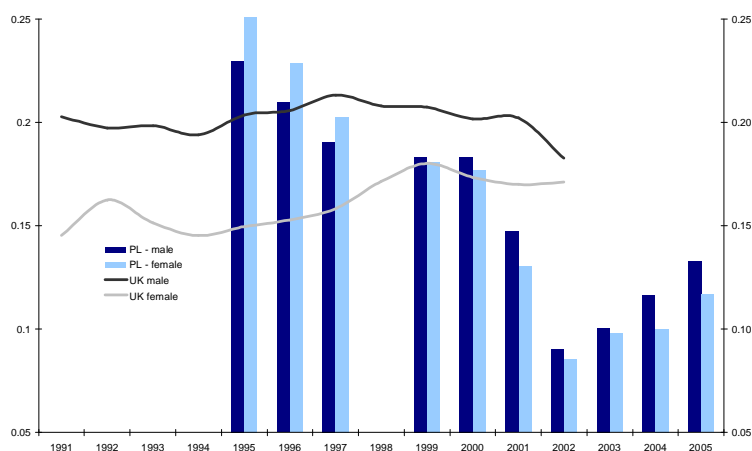
The wage inequalities in the United Kingdom and in Poland are on a comparable level, although Polish workers' wages are slightly more dispersed in the upper end of the distribution.<sup>6</sup> Furthermore, also the UK has experienced sharp wage inequality increases in the nineties (OECD 1996), although these seem to have stopped. As the ONS (2005) presents, between 1998 and 2004 the D9/D1 ratio for the full time employees remained practically unchanged.

The Figure 4 presents a comparison of earnings mobility index for Polish and UK male and female workers. The male wage mobility has been quite stable in the UK over the analyzed period, though it has decreased between 2000 and 2002. The female mobility index has risen substantially in the second half of the nineties, lowering the gap to the male mobility index (which has been almost closed in 2002 due to a sharp decrease in male index).

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<sup>6</sup>Earnings disparities across European countries and regions, Statistics in focus, 7/2006.

Figure 4: Earnings mobility index, PL and UK



Source: Own calculations based on PLFS and BHPS.

One can see that the overall wage mobility looks lower in Poland than in the UK, though it is mainly a result of changes that took place in the last decade. In mid nineties, both the female and male earnings mobility in Poland was slightly higher than in the UK. However, since as mentioned before, the PLFS is likely to underestimate the degree of wage mobility we can assume that the gap between the earnings mobility between the two countries might in fact be much lower.

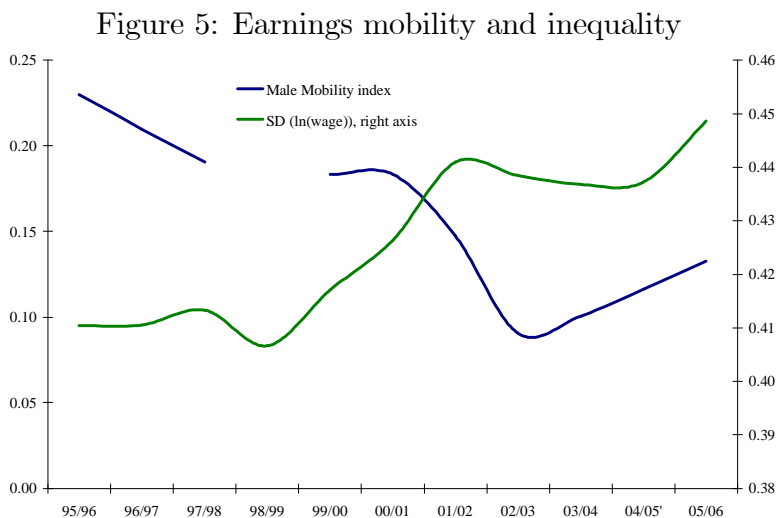
The comparison of the transition matrices based on the BHPS and PHBS (Appendix tables A.1 (a-c) and A.4 (a-c)) reinforces this hypothesis. In fact, judging by 2003 (UK) and 2004 (PL) data, both male and female UK workers face slightly higher immobility within particular wage deciles compared to the Polish full time employees. At the same time, this higher immobility may be explained by large differences in downward earnings mobility of Polish and UK workers. The latter are much less likely to move down the wage distribution whereas the probabilities of moving up do not differ much.

There are also differences in the degree of earnings transitions between the Polish and UK workers, since the former are relatively more likely to move by more than one decile, whereas the majority of UK earnings transitions are “smaller steps”.

To sum up, a picture that emerges shows that the wage mobility in Polish is relatively high, comparable to that in the UK. However, differences in the patterns of earnings transitions between the two countries emerge. In particular, they concern the levels of downward wage mobility and the degree of transitions.

## 6 Wage inequalities and earnings mobility

As noted in section 3, the wage inequalities rose substantially in the past decade in Poland, both in the upper and lower tail of the distribution. The question arises if and to what extent it might have had impact on individual workers mobility across the earnings distribution. On one hand, one might expect that higher wage dispersion implies more possibilities to move across the distribution and thus higher earnings mobility. On the other hand however, the wage rises have to be higher in order to change the worker's position in the earnings ranking.



Source: Own calculations based on PLFS data.

Earnings inequalities (standard deviation of log wages) calculated for full time employees.

The Figure 5 presents changes in the wage mobility (of male workers) and overall earnings inequality over the past decade in Poland. In the mid nineties, between 1995 and 1998 the wage distribution has not changed much whereas the individual earnings mobility has declined. Between 1998 and 2002 wage inequalities have risen substantially and the mobility index has fallen sharply. Since 2002 both earnings inequalities and earnings mobility have gone slightly up. Thus there is no marked trend in the mobility-inequality changes. However, if we look at the levels, it is obvious the wage mobility was on average much higher in times of lower wage inequalities.

Also international evidence points to a rather weak link between the earnings disparities and individual mobility. For example, Burkhauser et al. (1997) in their analysis of

German and US labour markets found out that despite overall constant wage inequalities in both countries in the analyzed period, earnings mobility increased in the US while declining in Germany. Cardoso (2006) found that in Portugal, between 1986 and 1999, rising inequality was associated with relatively high mobility, whereas declining inequality coexisted with lower mobility. OECD (1996) points out that despite various institutional settings countries do not differ much with respect to the earnings mobility and those with higher wage disparities do not have higher wage mobility.

## 7 Conclusions

The analysis presented in this paper has shown that wage mobility in Poland is rather high and its level is comparable to that observed in the UK. Men are more likely to change their position in the wage distribution than women. The employees at the bottom of the wage ladder have higher mobility than those of the upper part.

Plotting the changes in mobility index against time has shown that earnings mobility in Poland has fallen in the second half of the nineties, with a sharp decline in 2002. However, the mobility is on the rise again since then. The greatest change concerned the low paid workers, which in the mid nineties were relatively (to medium and high earners) less likely to move across the distribution, whereas in 2005 they were the most mobile.

There are a few striking differences in the mobility of Polish and British workers. Although the degree of upwards wage mobility is rather similar, the Polish ones are more likely to experience downward transitions, whereas the UK ones have a higher immobility within particular deciles. Furthermore, Polish employees are more likely to make ‘bigger steps’ i.e. to move by more than one decile in the earnings distribution, whereas in the UK most of the transitions are by one decile only.

In Poland there is also a clear pattern of transitions out of employment, which concern mostly the low paid workers. Men are more likely to become unemployed, whereas among women there is a high share of withdrawals from the labour market. Also those entering employment are much more likely to fall to the bottom deciles. In case of UK, these transitions are much more heterogeneous with respect to the position in the earnings distribution.

It has also been shown that the increases in earnings inequalities in Poland coexisted both with falling and rising wage mobility. This seems to fit into the international evidence of a lack of direct link between cross sectional and life time earnings inequalities.

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# Appendix

Table A1(a): One year transition rates 2004-2005, all full time employees.

2004 state	2005 state											Pt&		
	1 <sup>st</sup> d	2 <sup>nd</sup> d	3 <sup>rd</sup> d	4 <sup>th</sup> d	5 <sup>th</sup> d	6 <sup>th</sup> d	7 <sup>th</sup> d	8 <sup>th</sup> d	9 <sup>th</sup> d	10 <sup>th</sup> d	Miss	0	U	I
1 <sup>st</sup> d	30.8	22.3	6.9	5.0	3.9	2.2	1.1	0.4	0.4	0.7	1.2	9.3	9.3	6.6
2 <sup>nd</sup> d	16.4	30.1	16.7	9.5	3.9	2.4	1.8	1.6	0.4	0.3	1.5	5.6	5.1	4.7
3 <sup>rd</sup> d	7.4	20.5	23.5	15.7	10.6	4.8	3.6	2.1	1.1	0.1	1.1	3.7	2.8	3.0
4 <sup>th</sup> d	4.0	10.0	11.8	25.2	17.1	7.2	6.8	3.5	2.6	1.1	1.1	5.1	1.7	2.7
5 <sup>th</sup> d	2.6	6.2	5.2	14.0	28.1	13.5	10.2	5.2	4.3	1.8	0.3	3.6	2.1	2.9
6 <sup>th</sup> d	1.7	3.1	3.0	7.7	24.6	20.3	16.0	8.8	6.0	1.6	0.8	2.6	1.3	2.5
7 <sup>th</sup> d	1.5	1.3	1.7	5.6	10.8	12.9	28.2	17.3	8.8	5.9	0.4	2.3	1.2	2.1
8 <sup>th</sup> d	0.9	1.2	1.6	1.8	5.8	8.3	16.1	33.6	17.6	5.8	0.3	2.5	1.0	3.6
9 <sup>th</sup> d	0.4	0.9	0.5	1.9	3.4	5.3	7.3	17.7	40.9	14.9	0.1	4.2	0.3	2.2
10 <sup>th</sup> d	0.4	0.3	0.5	0.7	0.8	1.8	3.1	7.2	18.9	59.9	0.1	3.4	0.3	2.7
Miss	14.3	5.7	4.8	4.8	3.8	1.0	0.0	2.9	2.9	1.0	10.5	23.8	13.3	11.4
Pt&O	2.7	1.5	1.0	1.0	0.7	0.4	0.6	0.5	0.5	0.4	0.5	81.0	2.4	6.8
U	5.5	4.1	1.6	2.2	1.5	0.6	0.8	0.8	0.3	0.6	1.6	9.3	49.7	21.4
I	1.4	0.8	0.4	0.3	0.5	0.1	0.2	0.1	0.1	0.2	0.4	6.0	5.2	84.4

Source: own calculations based on PHBS data.

Pt&O means part time employees, self employed, employers and working family members.

Table A1(b): One year transition rates 2004-2005, male employees.

2004 state	2005 state											Pt&		
	1 <sup>st</sup> d	2 <sup>nd</sup> d	3 <sup>rd</sup> d	4 <sup>th</sup> d	5 <sup>th</sup> d	6 <sup>th</sup> d	7 <sup>th</sup> d	8 <sup>th</sup> d	9 <sup>th</sup> d	10 <sup>th</sup> d	Miss	0	U	I
1 <sup>st</sup> d	28.8	17.6	7.8	4.4	5.1	1.4	1.4	0.3	0.7	0.3	1.7	13.9	11.5	5.1
2 <sup>nd</sup> d	15.2	28.4	14.9	12.1	3.5	3.5	1.8	1.8	0.4	0.4	2.1	6.0	6.0	3.9
3 <sup>rd</sup> d	5.8	21.9	21.4	15.1	12.6	5.8	4.3	2.3	1.0	0.3	1.3	3.8	2.8	2.0
4 <sup>th</sup> d	3.7	7.5	11.0	24.8	16.6	7.5	7.7	4.0	3.3	2.1	1.4	5.9	2.3	2.1
5 <sup>th</sup> d	2.0	6.1	4.9	14.5	30.6	13.9	9.2	5.5	2.9	1.2	0.6	4.3	2.6	1.7
6 <sup>th</sup> d	2.2	3.2	3.0	9.9	23.9	16.4	16.2	9.5	7.1	1.7	0.9	2.8	1.9	1.3
7 <sup>th</sup> d	1.7	1.5	1.9	6.0	11.2	12.9	27.5	17.6	7.1	6.2	0.6	2.6	0.9	2.2
8 <sup>th</sup> d	0.7	0.7	1.0	2.2	5.1	7.7	16.5	35.1	17.2	6.5	0.0	2.4	1.5	3.4
9 <sup>th</sup> d	0.2	0.4	0.2	2.0	4.1	4.6	6.5	18.4	40.8	15.8	0.2	4.1	0.4	2.2
10 <sup>th</sup> d	0.4	0.4	0.4	0.4	0.9	1.3	2.8	7.1	20.3	59.5	0.2	4.3	0.2	1.7
Miss	11.8	7.8	7.8	2.0	5.9	0.0	0.0	2.0	2.0	0.0	15.7	27.5	15.7	2.0
Pt&O	2.4	1.5	1.1	1.2	0.8	0.5	0.8	0.6	0.6	0.5	0.7	81.9	2.7	4.7
U	6.0	5.2	1.7	2.9	1.6	0.7	1.3	1.0	0.4	0.9	2.2	9.5	52.3	14.4
I	1.6	0.3	0.2	0.3	0.7	0.0	0.0	0.0	0.1	0.2	0.3	5.9	4.5	85.8

Source: own calculations based on PHBS data.

Pt&O means part time employees, self employed, employers and working family members.

Table A1(c): One year transition rates 2004-2005, female employees.

2004 state	2005 state											Pt&		
	1 <sup>st</sup> d	2 <sup>nd</sup> d	3 <sup>rd</sup> d	4 <sup>th</sup> d	5 <sup>th</sup> d	6 <sup>th</sup> d	7 <sup>th</sup> d	8 <sup>th</sup> d	9 <sup>th</sup> d	10 <sup>th</sup> d	Miss	0	U	I
1 <sup>st</sup> d	32.1	25.4	6.3	5.4	3.1	2.7	0.9	0.4	0.2	0.9	0.9	6.3	7.8	7.6
2 <sup>nd</sup> d	17.1	31.1	17.8	7.9	4.2	1.8	1.8	1.5	0.4	0.2	1.1	5.3	4.6	5.3
3 <sup>rd</sup> d	9.2	19.0	26.0	16.5	8.4	3.6	2.8	2.0	1.1	0.0	0.8	3.6	2.8	4.2
4 <sup>th</sup> d	4.2	12.9	12.7	25.6	17.7	6.9	5.8	2.9	1.8	0.0	0.8	4.2	1.1	3.4
5 <sup>th</sup> d	3.2	6.4	5.4	13.5	25.3	13.1	11.2	4.8	5.8	2.6	0.0	2.9	1.6	4.2
6 <sup>th</sup> d	1.0	3.0	3.0	4.3	25.7	26.3	15.7	7.7	4.3	1.3	0.7	2.3	0.3	4.3
7 <sup>th</sup> d	1.3	1.0	1.3	5.1	10.2	13.0	29.2	16.8	11.4	5.4	0.0	1.9	1.6	1.9
8 <sup>th</sup> d	1.1	1.9	2.7	1.1	6.8	9.1	15.6	31.2	18.3	4.6	0.8	2.7	0.4	3.8
9 <sup>th</sup> d	0.7	1.8	1.1	1.8	2.2	6.5	8.6	16.5	41.2	13.3	0.0	4.3	0.0	2.2
10 <sup>th</sup> d	0.4	0.0	0.7	1.1	0.7	2.5	3.6	7.2	16.7	60.5	0.0	1.8	0.4	4.3
Miss	16.7	3.7	1.9	7.4	1.9	1.9	0.0	3.7	3.7	1.9	5.6	20.4	11.1	20.4
Pt&O	2.9	1.5	0.8	0.8	0.5	0.3	0.4	0.3	0.4	0.3	0.4	80.0	2.1	9.0
U	5.1	3.0	1.5	1.5	1.5	0.4	0.4	0.5	0.1	0.3	1.1	9.1	47.3	28.2
I	1.3	0.9	0.5	0.3	0.3	0.1	0.3	0.1	0.2	0.2	0.4	6.0	5.5	83.9

Source: own calculations based on PHBS data.

Pt&O means part time employees, self employed, employers and working family members.

Table A2(a). Transition rates across time. Men full time employees.

deciles	1995/1996			2000/2001			2004/2005		
	same d	moved 1d	moved 2d+	same d	moved 1d	moved 2d+	same d	moved 1d	moved 2d+
<b>1</b>	0.34	0.13	0.28	0.45	0.17	0.12	0.47	0.12	0.15
<b>2</b>	0.17	0.36	0.30	0.37	0.28	0.16	0.50	0.24	0.09
<b>3</b>	0.26	0.30	0.31	0.10	0.50	0.21	0.48	0.26	0.09
<b>4</b>	0.20	0.29	0.39	0.31	0.30	0.20	0.63	0.18	0.07
<b>5</b>	0.08	0.38	0.43	0.50	0.25	0.13	0.66	0.12	0.11
<b>6</b>	0.20	0.31	0.39	0.41	0.26	0.19	0.60	0.23	0.10
<b>7</b>	0.28	0.34	0.29	0.34	0.38	0.14	0.72	0.18	0.04
<b>8</b>	0.26	0.44	0.21	0.49	0.28	0.10	0.80	0.10	0.04
<b>9</b>	0.29	0.49	0.16	0.53	0.29	0.06	0.81	0.11	0.01
<b>10</b>	0.68	0.18	0.06	0.70	0.13	0.04	0.88	0.01	0.01
"2-4"	0.21	0.31	0.33	0.26	0.36	0.19	0.54	0.23	0.08
"6-8"	0.24	0.37	0.30	0.41	0.31	0.14	0.71	0.17	0.06

Source: own calculations based on PLFS data.

Table A2(b). Transition rates across time. Women full time employees.

deciles	1995/1996			2000/2001			2004/2005		
	same d	moved 1d	moved 2d+	same d	moved 1d	moved 2d+	same d	moved 1d	moved 2d+
1	0.42	0.18	0.21	0.59	0.14	0.05	0.64	0.06	0.07
2	0.22	0.41	0.25	0.40	0.33	0.10	0.49	0.31	0.04
3	0.27	0.38	0.25	0.16	0.53	0.14	0.54	0.31	0.06
4	0.23	0.33	0.36	0.33	0.32	0.21	0.71	0.14	0.06
5	0.10	0.40	0.43	0.47	0.22	0.15	0.72	0.10	0.10
6	0.20	0.37	0.36	0.40	0.29	0.19	0.69	0.18	0.08
7	0.31	0.36	0.28	0.31	0.43	0.17	0.74	0.15	0.04
8	0.23	0.48	0.22	0.44	0.35	0.10	0.83	0.07	0.03
9	0.30	0.45	0.18	0.53	0.32	0.04	0.79	0.09	0.03
10	0.62	0.20	0.09	0.77	0.09	0.05	0.85	0.01	0.03
"2-4"	0.24	0.37	0.29	0.30	0.39	0.15	0.58	0.25	0.05
"6-8"	0.25	0.40	0.29	0.38	0.36	0.15	0.75	0.13	0.05

Source: own calculations based on PLFS data.

Table A.3: One year mobility index by decile of origin

<b>Male</b>	<b>1995/96</b>	<b>2005/06</b>	<b>Percentage change</b>
MM_1	0.234	0.221	-0.05
MM_2	0.236	0.152	-0.36
MM_3	0.238	0.165	-0.31
MM_4	0.261	0.154	-0.41
MM_5	0.270	0.171	-0.37
MM_6	0.279	0.145	-0.48
MM_7	0.268	0.149	-0.45
MM_8	0.251	0.108	-0.57
MM_9	0.205	0.080	-0.61
MM_10	0.132	0.048	-0.64
<b>Female</b>			
MF_1	0.253	0.171	-0.32
MF_2	0.281	0.136	-0.52
MF_3	0.285	0.146	-0.49
MF_4	0.302	0.137	-0.55
MF_5	0.305	0.134	-0.56
MF_6	0.282	0.096	-0.66
MF_7	0.250	0.104	-0.59
MF_8	0.210	0.081	-0.62
MF_9	0.137	0.051	-0.63
MF_10	0.098	0.060	-0.39

*Source: Own calculations using LFS data*

Table A4(a): One year transition rates 2003-2004, UK all full time employees.

2003 state	2004 state										PT&SE	U	I
	1 <sup>st</sup> d	2 <sup>nd</sup> d	3 <sup>rd</sup> d	4 <sup>th</sup> d	5 <sup>th</sup> d	6 <sup>th</sup> d	7 <sup>th</sup> d	8 <sup>th</sup> d	9 <sup>th</sup> d	10 <sup>th</sup> d			
1 <sup>st</sup> d	<b>33.1</b>	12.6	2.9	2.3	1.6	1.6	3.8	1.6	2.7	1.6	9.0	0.0	27.3
2 <sup>nd</sup> d	6.1	<b>38.7</b>	14.6	4.7	2.0	1.6	1.0	0.4	0.4	1.0	13.8	0.4	15.4
3 <sup>rd</sup> d	2.0	11.2	<b>37.9</b>	19.7	7.9	4.2	0.9	0.2	0.2	0.2	7.2	0.7	7.7
4 <sup>th</sup> d	2.6	3.9	10.8	<b>38.7</b>	18.7	4.7	1.4	2.0	1.0	0.0	4.5	0.2	11.4
5 <sup>th</sup> d	2.4	1.6	3.6	13.8	<b>38.1</b>	18.2	5.8	1.8	0.5	0.0	3.5	1.1	9.5
6 <sup>th</sup> d	1.5	1.7	1.5	3.7	16.5	<b>33.8</b>	18.4	7.4	2.6	0.4	3.1	0.6	9.0
7 <sup>th</sup> d	2.1	0.6	0.3	2.1	3.2	12.5	<b>39.2</b>	20.4	4.8	1.1	3.9	0.8	8.8
8 <sup>th</sup> d	3.0	0.7	0.7	0.5	0.9	3.0	15.2	<b>43.4</b>	17.9	2.9	3.4	0.5	7.9
9 <sup>th</sup> d	2.9	1.1	0.3	0.2	0.2	0.9	3.1	13.5	<b>51.7</b>	16.1	4.1	0.0	6.1
10 <sup>th</sup> d	3.3	0.7	0.2	0.0	0.2	0.2	0.7	1.7	7.5	<b>72.2</b>	5.0	0.8	7.7
Pt&O	1.7	3.9	1.1	1.1	1.0	0.9	0.6	0.7	0.8	0.8	<b>74.9</b>	0.7	11.8
U	4.2	0.0	3.5	7.6	3.5	2.8	2.1	0.0	1.4	2.1	17.4	<b>13.9</b>	41.7
I	0.8	1.0	0.7	0.3	0.6	0.4	0.5	0.4	0.1	0.2	7.8	1.4	<b>86.0</b>

Source: own calculations based on BHPS data.

Pt&SE means part time employees and self employed..

Table A4(b): One year transition rates 2003-2004, UK male full time employees.

2003 state	2004 state										PT&SE	U	I
	1 <sup>st</sup> d	2 <sup>nd</sup> d	3 <sup>rd</sup> d	4 <sup>th</sup> d	5 <sup>th</sup> d	6 <sup>th</sup> d	7 <sup>th</sup> d	8 <sup>th</sup> d	9 <sup>th</sup> d	10 <sup>th</sup> d			
1 <sup>st</sup> d	<b>39.1</b>	3.7	2.5	2.9	1.2	2.1	4.5	2.9	2.9	2.1	5.3	0.0	30.9
2 <sup>nd</sup> d	9.6	<b>27.9</b>	18.4	7.4	5.1	2.9	1.5	0.7	1.5	2.2	6.6	0.7	15.4
3 <sup>rd</sup> d	2.1	6.9	<b>37.2</b>	21.3	11.2	5.3	2.1	0.5	0.5	0.0	3.7	0.5	8.5
4 <sup>th</sup> d	2.6	3.5	10.9	<b>36.7</b>	21.0	5.7	1.7	2.2	2.2	0.0	2.2	0.4	10.9
5 <sup>th</sup> d	2.9	1.0	2.5	16.8	<b>37.5</b>	18.4	7.3	2.2	1.0	0.0	1.6	0.6	8.3
6 <sup>th</sup> d	1.0	2.0	1.0	5.3	14.5	<b>30.6</b>	19.7	8.2	3.6	0.7	2.0	0.7	10.9
7 <sup>th</sup> d	1.5	0.7	0.5	2.0	3.7	12.4	<b>39.2</b>	20.8	5.2	1.5	3.2	1.0	8.2
8 <sup>th</sup> d	3.4	0.5	0.8	0.8	1.0	3.4	14.5	<b>43.2</b>	17.3	3.9	3.1	0.5	7.8
9 <sup>th</sup> d	3.4	0.9	0.4	0.2	0.2	0.9	3.8	14.4	<b>49.2</b>	16.6	4.3	0.0	5.6
10 <sup>th</sup> d	3.6	0.0	0.0	0.0	0.2	0.0	0.9	1.8	8.4	<b>72.7</b>	4.0	0.9	7.6
Pt&O	2.2	2.0	0.8	0.4	1.1	1.3	0.6	1.1	1.3	2.2	<b>74.4</b>	1.0	11.7
U	4.8	0.0	2.4	9.6	3.6	3.6	3.6	0.0	0.0	3.6	13.3	<b>15.7</b>	39.8
I	0.9	1.1	1.3	0.2	1.3	0.9	1.1	0.5	0.2	0.4	5.9	2.1	<b>84.3</b>

Source: own calculations based on BHPS data.

Pt&SE means part time employees and self employed..



Table A4(c): One year transition rates 2003-2004, UK female full time employees.

2004 state													
2003 state	1 <sup>st</sup> d	2 <sup>nd</sup> d	3 <sup>rd</sup> d	4 <sup>th</sup> d	5 <sup>th</sup> d	6 <sup>th</sup> d	7 <sup>th</sup> d	8 <sup>th</sup> d	9 <sup>th</sup> d	10 <sup>th</sup> d	Pt&SE	U	I
1 <sup>st</sup> d	<b>25.9</b>	23.4	3.5	1.5	2.0	1.0	3.0	0.0	2.5	1.0	13.4	0.0	22.9
2 <sup>nd</sup> d	4.7	<b>42.7</b>	13.1	3.6	0.8	1.1	0.8	0.3	0.0	0.6	16.5	0.3	15.4
3 <sup>rd</sup> d	1.9	14.2	<b>38.4</b>	18.7	5.6	3.4	0.0	0.0	0.0	0.4	9.7	0.7	7.1
4 <sup>th</sup> d	2.7	4.2	10.7	<b>40.5</b>	16.8	3.8	1.1	1.9	0.0	0.0	6.5	0.0	11.8
5 <sup>th</sup> d	1.7	2.6	5.1	9.8	<b>38.9</b>	17.9	3.8	1.3	0.0	0.0	6.0	1.7	11.1
6 <sup>th</sup> d	2.1	1.3	2.1	1.7	19.2	<b>37.9</b>	16.7	6.3	1.3	0.0	4.6	0.4	6.7
7 <sup>th</sup> d	3.2	0.5	0.0	2.3	2.3	12.8	<b>39.3</b>	19.6	4.1	0.5	5.0	0.5	10.0
8 <sup>th</sup> d	2.3	1.2	0.6	0.0	0.6	2.3	16.8	<b>43.9</b>	19.1	0.6	4.0	0.6	8.1
9 <sup>th</sup> d	1.9	1.4	0.0	0.0	0.0	1.0	1.4	11.5	<b>56.9</b>	14.8	3.8	0.0	7.2
10 <sup>th</sup> d	2.7	2.7	0.7	0.0	0.0	0.7	0.0	1.3	4.7	<b>70.7</b>	8.0	0.7	8.0
Pt&O	1.5	5.0	1.2	1.5	1.0	0.7	0.6	0.5	0.5	0.1	<b>75.1</b>	0.5	11.8
U.	3.3	0.0	4.9	4.9	3.3	1.6	0.0	0.0	3.3	0.0	23.0	<b>11.5</b>	44.3
I	0.7	1.0	0.4	0.3	0.3	0.2	0.2	0.3	0.1	0.1	8.6	1.1	<b>86.7</b>

Source: own calculations based on BHPS data.

Pt&SE means part time employees and self employed..