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**LOW PAY INCIDENCE AND MOBILITY IN THE
NETHERLANDS – EXPLORING THE ROLE OF PERSONAL,
JOB AND EMPLOYER CHARACTERISTICS.**

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ABSTRACT

The rise of earnings inequality in many industrialized countries in recent years has increased concerns about the pay conditions of those individuals located at the bottom of the wage distribution. In this paper we first analyze which groups in the Dutch labor market are more likely on average to fall in low-wage segments, and which are the characteristics of workers and firms that are more closely related to low wage rates. We also explore how the pattern of low-wage employment has evolved over time. Second, we examine the determinants of being in low-wage employment for the individual worker, and we analyze whether there exists a type of “poverty trap” as a result of which earnings mobility is lacking and some workers persist in low-paid jobs for a long period of time. To achieve this we use two datasets: the *European Community Household Panel* (ECHP) for the period 1995-2001, and the *Arbeidsvoorwaarden Onderzoek* (Labor Conditions Survey, AVO) of the Dutch Labor Inspectorate for 2002. We utilize the longitudinal aspect of the ECHP to analyze the evolution of low-wage employment over time, by looking at different individual and job characteristics. Finally, we complete the analysis on low-wage employment with an examination of the role of the firm using the detailed information provided by the AVO.

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I. INTRODUCTION

The economic and institutional changes experienced by many industrialized countries over the last decades have influenced the distribution of wages both over time and among different groups of individuals in the labor market. In most European countries the distribution of earnings has become more dispersed giving rise to increased analysis of those workers who are considered to be *low paid*. This naturally has emphasized the need for dynamic analytical approaches to address the question whether particular individuals or groups are trapped in low-paid segments of the labor market or that low pay is a transitory phenomenon.

The extent of low pay at any point in time is a cause of concern as it measures the proportion of workers who lag behind in the wage distribution with negative consequences for their relative living standards and social inclusion. It is also important for the economy as a whole inasmuch as it signals the extent of low-productivity or low-paid jobs. The issue becomes even more crucial in a dynamic context, in the case of workers who are trapped in low-paid jobs and do not have the prospect of a career that evolves over time.

In this paper we use the European Community Household Panel (ECHP) for the period 1995-2001 and the Employment Conditions Survey (*Arbeidsvoorwaarden Onderzoek AVO*) for 2002 to explore the case of the Netherlands. We are grateful to the Labor Inspectorate of the Ministry of Social Affairs and Employment to allow utilizing the latter data. The longitudinal aspect of the ECHP allows us to follow up the same individuals and households during several consecutive years. The AVO data, in contrast, is an administrative dataset offering the advantage of information at the firm level.

- First, we analyze the overall earnings distribution, including a comparison between low-, medium- and high-paid jobs, using the most recent year available in both datasets.
- Next, we explore, with the help of ECHP, i) how low-wage employment has evolved over the period 1995-2001, and ii) if the incidence of low pay has shifted between groups of workers.
- Third, we perform a more in-depth analysis of determinants of low pay, that is the personal, job and firm characteristics associated with the chance of being low paid, on the basis of both datasets. For this purpose, we estimate a standard probit model for 2001 and 2002 using data from ECHP and AVO respectively.
- Finally, we explore the earnings transitions out of low pay and the factors that influence exploiting the longitudinal aspect of the ECHP.

The remainder of the paper is organized as follows. The next chapter provides a brief overview of previous studies. Chapter 3 discusses alternative definitions of low pay. Chapter 4 describes the two datasets and Chapter 5 provides an insight into the earnings distribution incidence of low pay for the most recent year while Chapter 6 portrays the evolution of low-wage employment since 1995. In

Chapter 7 we analyze the determinants of low-wage employment and elaborate especially on the role of firm effects was found on the basis of the AVO data. Chapter 8 focuses on earnings mobility and the escape from low pay and Chapter 9 concludes.

2. PREVIOUS RESEARCH

The increase in earnings inequality that has taken place in many OECD countries in the last years, has given impetus to the analysis of those workers located at the bottom end of the earnings distribution. The incidence of low-paid work has increased and become an important policy issue in Europe and the USA. Low-wage employment has been a focus of research and policy interest both at a macro level, and from a micro perspective (OECD, 1996; Asplund et al., 1998; Lucifora and Salverda, 1998; Salverda et al., 2000; Marx and Salverda, 2005). Most of these contributions have paid particular attention to differences between some European countries and the USA regarding the incidence of low-wage employment. These studies reveal that the United States is perhaps the extreme case where real wages at the lower end of the distribution have actually fallen, although the incidence of low-wage employment is also important in many European countries.

Recently, the European Commission has provided some comparative data about the incidence of low-wage employment in the European countries¹. The analysis is based on data from the ECHP (1994-2001) and reveals that low pay concerns roughly 15% of EU workers in paid employment of 15 hours or more per week. Furthermore, it provides evidence of little variation in the incidence of low pay between 1995 and 2000, with a decrease from 15.6% in 1995 to 14.9% in 1998, rising again but only marginally in 1999 and 2000 to 15.1%. However, there exists wide variation between different Member States, with the highest incidence of low pay in the UK and Ireland (19.4% and 18.7% respectively in 2000) and the lowest in Denmark and Italy (8.6% and 9.7% respectively). The analysis also reveals a marked decline in the incidence in Spain (from 18.9% in 1995 to 15.6% in 2000) and Portugal (from 14.4% to 10.9%). The Netherlands and Germany though have experienced an appreciable increase (from 13.3% in 1995 to 16.6% in 2000 in the Netherlands, and from 13.9% in 1998 to 15.7% in 2000 in Germany).

Previous research has also examined the link between low pay and wage-setting institutions (Blau and Kahn, 1996; Fortin and Lemieux, 1997; Gregory and Sandoval, 1994; OECD, 1996, 1998; Rubery and Fagan, 1993). In a recent work, Lucifora et al. (2005) review the patterns of low pay in Europe and show that union density, collective bargaining coverage and the structure of wage negotiations jointly contribute to a reduction of the incidence of low pay. Other papers have analyzed the relationship between low pay and employment creation, competitiveness, technology and minimum wages (Card and Krueger, 1995; Dolado et al., 1996; Fernie and Metcalf, 1996; Machin and Manning, 1996; Schechter, 1993; and Shaheed, 1994).

¹ European Community: "Labor market transitions and advancement: temporary employment and low pay in Europe", chap 4, in *Employment in Europe*, 2004.

Recent research on low paid employment underlines the need of a longitudinal analysis of the phenomenon (Stewart and Swaffield, 1999; Dickens, 2000, Cappellari, 2004). Evidence on the degree of mobility across the low pay threshold from one period to another can reveal to what extent low pay is a transitory or prolonged episode of earnings careers. To the extent that low pay is a transient phenomenon, involving individuals who are experiencing a temporary setback, or young workers acquiring skills and experience that will enhance their future earnings, the situation is self-limiting. But when workers are trapped in low-paid jobs and economic disadvantage becomes a persistent characteristic, serious issues of inequality and welfare arise. In this line, the work of Simón et al. (2004) shows that low-wage employment in Spain is significantly related to the poverty situation of Spanish households, and that this relationship is reinforced if the person holding the low-wage job is also the head of the family.

Sloane and Theodossiou (2000) find substantial upwards earnings mobility among younger men and the better educated, but they find that low pay seems to be more persistent for a substantial number of workers, particularly women, older men and the less qualified. For Britain, Gregory and Elias (1994) found that there is considerable mobility out of the bottom of the wage distribution, especially by younger men. Asplund et al. (1998) estimate the year-to-year upward mobility of low-wage earners in Denmark and Finland, and find that men in low-paid employment are more downwardly mobile than women, but acquiring occupation specific skills and other human capital tends to be related to upward mobility. However, Van Opstal et al. (1998) found that in the Netherlands the accumulation of firm-specific human capital contributes far less to earnings upward mobility than does general experience. For the UK, Gosling et al. (1997) find not only that human capital does assist upward earnings mobility but also that the most important determinant of movement out of low pay is job tenure. Finally, Arai et al. (1998) find that there are typical low-paid occupations. In a study for Finland, Norway and Sweden, these authors find that occupation is revealed to be more important than an individual's human capital endowments or industrial affiliation. Furthermore, they also examine to what extent workers appear to be trapped in these low-paid occupations.

3. MEASURE OF LOW PAY

The measurement of the incidence of low pay will be sensitive to: i) the way low pay is defined; ii) the earnings concept used; and iii) whether full-time and/or part-time workers are covered. However, economic theory does not provide us with a clear guideline on how low pay should be defined. The definition of low pay is in some sense arbitrary and several approaches have been used in the literature (CERC, 1991; OECD, 1996 a).

Low pay can be defined in absolute terms based on a minimum acceptable standard of living or poverty level. But this approach can be problematic for different reasons that have been already discussed in the literature. Most of previous studies have defined low pay as a relative concept by focusing on the wage distribution or the dispersion of earnings. However there is a diversity of approaches about the low-pay cut-off. Some authors have chosen two-thirds of median earnings, while other chose the threshold of 68 per cent or two-thirds of the mean. We also find some papers defining the low paid simply in terms of those in the lowest quartile of the earnings distribution or the first three deciles.

In this paper we define workers in low-paid jobs as those earning less than two-thirds of the median, while workers in high-paid jobs are defined as those earning one-and-a-half times the median or more². It should also be noted that low pay is measured in terms of hourly gross earnings. Focusing on hourly earnings has the particular advantage that it allows both full-time and part-time employees to be covered at the same time and compared on a meaningful basis³.

² Therefore, medium paid jobs are defined as those workers earning between two-thirds and one-and-a-half times the median earnings. Salverda *et al.* (2001) applies the three measures to various countries.

³ The issue of part-time work is especially important in the Netherlands where, in 2001, around 36 per cent of workers were employed in part-time jobs, and one-third of this part-time work is undertaken by men (mainly youths).

4. DATA

For the purpose of this paper we make use of two datasets: the ECHP for 1995 to 2001, and the AVO for 2002. In this chapter we provide a brief description of both databases.

4.1 EUROPEAN COMMUNITY HOUSEHOLD PANEL

The ECHP is a longitudinal survey launched by Eurostat in 1994 that makes it possible to follow up and interview the same private households and persons over several consecutive years. It is intended to allow both cross-sectional and dynamic analysis of incomes, labor force participation, housing, health, family formation and a variety of other socio-economic phenomena. ECHP data are collected by National Data Collection Units (NDCUs), either National Statistical Institutes (NSIs) or research centers, depending on the country. It includes employees across all sectors and seeks details of normal gross monthly earnings from one's main job, including normal overtime, together with hours worked. It also distinguishes between employees working 15 hours or more per week in their main job and those working less than that.

For the purpose of our analysis, we use Dutch data extracted from the ECHP for the period 1995-2001⁴. We select a sample of wage and salary workers aged between 16 and 64 years old, so that self-employed and unpaid family workers are excluded, and working more than 15 hours per week⁵. Hourly earnings are derived using variables *PI21IMG* (current wage and salary earnings – gross (monthly)) and *PE005A* (how many hours (including paid overtime) do you work in your main job or business). And for every year, from 1995 to 2001, we compute the low pay and high pay thresholds as the two thirds and one-and-a-half times the median earnings, respectively, over the whole sample of wage and salary earnings aged between 16 and 64 years old and working more than 15 hours per week.

4.2 AVO (ARBEIDSVORWAARDEN ONDERZOEK)

The AVO (*Arbeidsvoorwaarden Onderzoek*) dataset consists of employer-employee matched data in private enterprise. It is an administrative database provided by the Labor Inspectorate of the Dutch Ministry of Social Affairs and Employment. Among the advantages of using administrative records is the reduction in measurement errors for pay and working hours. However, one of the main

4 The 1994 wave is not included in the analysis since the variable "type of contract" is not observed for employee persons in this wave.

5 People working less than 15 hours per week are not included since information on the number of hours worked in a week is not available for them. In ECHP 1994-2001 14% of Dutch head-count employment is below 15 hours per week. This percentage is much larger than in the other countries where it ranks between 1 and 6%. Youths and adult women are strongly overrepresented in the category of less than 15 hours in all countries.

drawbacks of this dataset is the scarcity of variables reflecting the employees' family background and social economic status.

The data cover all industries in the economy. In each survey year a two-stage sampling method to select firms and employees is utilized. The sample of firms is first selected based on information provided by the Ministry. Second, the sample of employees is selected according to the size of the drawn firm and the condition of coverage by a collective bargaining agreement. The sampled firms are approached twice with a one-year interval to enable observing the changes in wage and workforce composition.

Each AVO dataset consists of two sub-datasets: one for employees, the other for employers (firms). The unique firm identifier links the two. The employee file provides information on people employed in the private sector. Furthermore, all the workers included in the dataset for employees are categorized into one of three groups: 'comers', 'stayers' and 'leavers' depending on whether they joined or left the firm's workforce or stayed on during the year. Only those workers who stayed with the same employer the year out are observed twice, in October 2001 and October 2002 given the use of the dataset AVO 2002. In contrast, workers leaving the firm and newly-hired workers are observed only once. For leavers information is only available for 2001, while information for comers refers to 2002. Most of our estimations will be based on information for 2002, and therefore on stayers and comers. Hourly earnings are computed using variables *v22a* (*wage rate for the job*) and *v66a* (*usual weekly hours of work*) obtained from the employee file. Finally, as in the ECHP, we use the two-thirds and one-and-a-half times the median earnings to compute the low pay and high pay thresholds, respectively.

5. THE EARNINGS DISTRIBUTION (2001/2002)

Tables 1 and 2 show the proportions of people in low-, medium-, and high-paid jobs for 2001 and 2002, using ECHP and AVO respectively. For 2001, the descriptive analysis incorporates the following personal and job characteristics: gender, age, education, full-time/part-time, on-the-job training, type of firm, type of contract, previous unemployment experience, job duration and a set of occupational and industry dummy variables⁶. The majority of the sample appears to be concentrated in medium-paid jobs (around 66 per cent of the sample). The rest of the sample is almost equally distributed between low-paid and high-paid jobs respectively (16 to 17 per cent). To allow a better comparison with the AVO data, and since this database does not contain information on the public sector, the three columns of Table 1, panel B, replicate the descriptive statistics of the ECHP for 2001 using only the information on the private sector.

For 2002 the analysis is based on the AVO data. As in 2001, we incorporate in the analysis both individual and firm characteristics. Among individual characteristics we include: gender, age, education, type of employee (whether he/she is covered by a collective agreement), seniority, type of contract (permanent, fixed-term or temporary agency), whether he/she is a stayer or a newcomer to the workforce of the firm, the type of occupation occupied by the person, and the skill level of the occupation using a dichotomy between low-skilled and high-skilled jobs defined with the help of a level indicator designed by the Labor Inspectorate⁷. Among firm characteristics we consider firm size and industry. The share of low paid employees appears to be higher in the ECHP (19.22%) compared to AVO (15.35%). It cannot be said with certainty which will be the better figure. In principle, being an establishment survey and having a larger sample size, the AVO figure might be more accurate, but at the same time the national figure for public and private sectors together for ECHP (17.44%) is very close to the one inferred from the wage earnings survey of Dutch Statistics (17.36%) (Salverda, 2006, Figure 2.11). However, on its own conditions the ECHP must be underestimating the level as people working less than 15 hours per week had to be left out and this category has a much higher incidence of low pay.

In both cases, and especially when using information from AVO data, we find a lower share of males performing low-paid jobs. For instance, in 2001 we have around 56% of males in the sample. However, when looking at the sub-sample of low pay, only 41% are males. Both in 2001 and 2002, the majority of the people in the sample are aged between 25 and 49 years (71.3% in 2001 using ECHP, and 66.5% in 2002 using AVO – which is consistent with the fact that the small part-time jobs are often occupied by youths). This difference is specially marked when looking at the AVO data,

⁶ The classification of occupations follows the International Standard Classification of Occupations (ISCO-88). See Table 3 for occupational and industry classification.

⁷ The definition of a “low-skilled” job is based on the first three levels of the following eight categories of job level (“Functieniveau”) i, ii, and iii-low, iii-high, iv, v, vi, vii and viii. Job type and industry classifications are specified in Table 3.

with only 16% of the total sample aged 16-24; this contrasts with 62.5% of people in low-wage employment belonging to this age cohort.

Around 50% of the selected sample in 2001 has obtained a secondary level of education. This percentage is above 60% in 2002 when using AVO data. In contrast, ECHP has a share of people with tertiary education completed twice as high (28%) as AVO (15%). Looking at the firm size, we observe that the distribution of people in small, medium and large firms is quite similar in both years. When the public sector is not included in the descriptive analysis of ECHP, we find that 37.8%, 34.2% and 28.0% of the total sample are employed, respectively in small, medium and large firms. The corresponding percentages for AVO data are 37.3%, 29.5% and 33.2%.

The proportion of people holding a permanent contract is quite similar in both years (more than 80%), in the total sample as well as the sub-samples of low, medium and high pay.

Looking at job tenures, both datasets reveal that the category of workers with “more than 5 years of seniority” has the largest share in both datasets.

Regarding the other variables that are included only in the analysis with the ECHP, we find that more than 20% of the sample are part-timers. And this proportion increases when looking at people in low-paid jobs, for whom the share of part-time employment is above 30%. We also observe that receiving on-the-job training is more likely in medium- and high-paid jobs than in low-paid jobs. In contrast, workers in low-paid jobs are more likely to have been unemployed in recent years.

Looking at other information provided by AVO, we find that more than 75% of the workers in the sample are covered by collective labor agreements (cla). Besides, almost 80% of the sample consists of workers who have stayed with the same employer, while only 20% are newly-hired workers (comers). Finally, distinguishing between low-skilled and high-skilled jobs, the descriptive statistics reveals that almost 40% of workers in the total sample are employed in low-skilled jobs. Among the low-pay sub-sample, however, this percentage is considerably higher, with almost 80% of low-paid workers being occupied in low-skilled jobs.

6. EVOLUTION OF LOW-WAGE EMPLOYMENT (1995–2001)

In order to examine how low-wage employment has evolved over the period 1995-2001, we use information from the ECHP to present a sequence of graphs for the incidence of low pay, looking at different individual and job characteristics (see Figures (1 – 9 c)). Among personal characteristics we include gender, age and education. With respect to job characteristics, we include the type of firm, type of contract, full-time/part-time job, occupation and industry.

As it can be seen in Figure 1, the percentages of low and high-wage employment in total employment are almost identical and they show a slightly increasing trend over the period under analysis. In contrast, the proportion of employees in medium-paid jobs is remarkably higher, and it presents a slightly decreasing trend.

The increasing trend in the incidence of low-wage employment is observed for both, males and females (see Figure 2). However, over the whole period females are found to be much more likely to occupy a low-paid job. In 2001, for example, almost 25 per cent of females were low paid, while the corresponding percentage for males was below 15 per cent.

Age differences can also be observed when looking at the evolution of low-wage employment. We consider three different age groups: people aged 16 to 24 years, those aged 30 to 49, and those between 50 and 65 years old. Comparisons show a remarkably higher incidence of low-wage employment among the youngest persons (see Figure 3). Furthermore, we observe an increasing trend in their incidence, from around 60% in 1995 to almost 80% of this type of workers earning less than two-thirds the median earnings in 2001.

Figure 4 shows the evolution of the percentage of people falling below two-thirds of the median earnings by different educational levels: primary, secondary and tertiary education⁸. As expected, individuals with only primary education completed are the most likely to be in a low-pay situation, while those with tertiary education completed exhibit the lowest incidence of low pay. In 2001, almost 40% of people with primary education were in a low-paid job, while for those with tertiary education this was around 9%.

Looking at the evolution of low-wage employment by different types of firm, we observe an increasing trend in both, the public and the private sector (see Figure 5). However, remarkable differences regarding the incidence of low-wage employment can be observed, with the highest rates among small private firms, and the lowest rates observed in the public sector.

In Figure 6 we distinguish between part-time and full-time jobs. In general, the incidence of low-wage employment is found to be more likely among part-timers, although it remains more or less unchanged during the period under analysis (except for the small increase observed from 2000 to

⁸ Data on education is extracted from the Dutch Socio-Economic Panel, since original educational data from Eurostat are severely incomplete from 1997 onwards.

2001). In contrast, an increasing trend can be observed amongst full-time workers with the rate of low pay rising from 10% in 1995 to more than 15% in 2001.

Differences in the evolution of low-wage employment by type of contract are shown in Figure 7. During the whole period, low pay is found to be more likely among non-permanent (temporary) forms of contractual arrangements. Regarding temporary workers, we can observe that their rate of low-wage employment remains around 45% until 1998, then decreases to 35% in 1998 and 1999, and increases again after 1999, so that by 2001 the rate of low pay returned to 45%.

Finally, Figures 8 a) – 9 c) confirm the existence of remarkable occupational and sectoral variations in the incidence of low-wage employment. Among occupations, the lowest percentages are found, unsurprisingly, among legislators, senior officials and managers and professionals. In contrast, people employed in skilled agriculture and fishery workers; service workers and shop and market sales workers; and those in elementary occupations show the highest incidence of low-wage employment. Regarding the type of industry, low-wage employment is found to be less likely in the following industries: financial intermediation, public administration and the armed forces, and education. In contrast, the highest incidence of low-wage employment is observed in: agriculture; wholesale and retail trade, repair of motor vehicles, motorcycles and personal household goods; hotels and restaurants; and other community, social and personal service activities; private households with employed persons; extra-territorial organizations and bodies.

7. DETERMINANTS OF LOW PAY (2001/2002)

This chapter aims to provide a more in-depth analysis of the determinants of low-wage employment. We use the information from ECHP (Section 7.1) and AVO (7.2) respectively to perform cross-sectional analyses for 2001 for the former dataset and 2002 for the latter. Section 7.3 elaborates on the analysis of the role of the firm allowed by the detail available in the AVO data.

7.1 PERSONAL CHARACTERISTICS (ECHP)

In Table 4 we present the results of estimating a probit model for the probability of being low-paid in 2001 *with ECHP*⁹. The explanatory variables include the individual and job characteristics reported in Table 1. The estimation results confirm those obtained in the descriptive statistics. First, females have a higher probability of being low paid compared with males. As age is concerned, effects tend to go in the expected direction *as the likelihood of being in a low-paid job decreases with age*. Workers aged between 16-24 years emerge as having the highest probability of being low paid. The fact that young workers account for a disproportionately large share of the people in low-paid jobs, of course, reflects *that low pay is linked to the life-cycle patterns of pay*. Education also exerts a strong influence on the probability of being low paid. As expected, higher educational levels are related with a lower probability of low pay. Thus, education has a beneficial effect in preventing a low-wage employment situation. Marginal effects associated *with receiving on-the-job training and holding a permanent contract* have a negative sign, which reveals that these two factors tend to decrease the likelihood of being in a low-paid job. The results also *disclose* a negative and significant influence of seniority on the likelihood of being in a low-paid job, which suggests that low pay mainly affects the early stage of a match between a worker and a job. This finding is in line with the Matching Theory, (Jovanovic (1979 b)), which states that a match between a worker and a job can be treated as a pure experience good. The only way to determine the quality of a particular match is to form the match and to "experience it". Thus, it is not surprising that once the employer has realized the "good quality" of the worker, the *person will* move up in the earnings distribution. *Working part-time does not have a significant effect, but it should be noted that this concerns the more substantial part-time jobs only, of at least 15 hours per week*. Finally, we find that occupational variables are quite significant in determining the probability of being low-paid. This result *confirms* that low-wage employment is concentrated among certain types of occupations.

⁹ We first estimated a bivariate probit to account for the endogeneity of initial conditions. However, we did not find evidence in favor of the existence of sample selection, so we proceeded to estimate a standard probit model.

7.2 PERSONAL AND FIRM CHARACTERISTICS (AVO)

In Table 5 we show the estimation results of a probit model using information from AVO 2002. Apart from the personal and firm characteristics included in Table 2, we exploit the employer sub-dataset to incorporate in the analysis other firm characteristics that could affect the likelihood of low pay. The first two columns present the results obtained when including only those variables specified in Table 2. In the last two columns, in contrast, we incorporate the following firm characteristics that relate to the workforce: the percentage of females in the firm, the average age of the employees, the percentage of employees with secondary and tertiary education, that of employees covered by the mandatory extension of a collective labor agreement ('cla-extension') or not covered by any such agreement ('non-cla'), the percentage of employees with long periods of seniority and also of those with a permanent or a temporary agency contract respectively, the share of newcomers to the firm over the survey year (comers) and, finally, the percentage of low-skilled jobs in the firm's workforce. In general, and in absolute terms, the estimated coefficients are found to be lower when these additional firm effects are taken into account¹⁰. Several points are worthy of mentioning. First, remarkable gender differences become apparent. Females are clearly more likely than males to be employed in low-paid jobs. Furthermore, gender differences are also observed at the firm level. For both, males and females, the individual probability of being low paid is much higher in those firms with a higher percentage of female employment.

Concerning age, the results confirm that youths are much more often found in low-paid jobs than older workers. But we also find that the individual probability of being low paid tends to be lower the higher the average age of employees within the firm.

Our results reveal, again, that education is an important factor in explaining the determinants of low-wage employment. As expected, individuals with higher levels of education are the least likely to end up in low-paid jobs. But the results also suggest the presence of some kind of "spillovers" in education. In particular, we find that the individual likelihood of being low-paid tends to be lower when the person is occupied in a firm with a high proportion of workers with a tertiary level of education.

We find that experience with current employer has a negative impact on the likelihood of low pay both at the individual and the firm level. In particular, the results show that individuals with longer durations at the current job are less likely to occupy low-paid jobs. Furthermore, the results reveal that the higher the percentage of employees with more than 5 years of seniority within the firm, the lower the individual probability to suffer from a low-pay situation.

¹⁰ A striking finding is the difference in the signs corresponding to the estimated coefficients on the occupational dummies "Hotels and catering" and "Health care and community services". However, this could be explained by the higher amount of females employed in these types of occupations. In fact, when we repeat the estimations reported in the last two columns eliminating the variable "% females" the sign obtained for these occupational dummies are again positive and significant in the case of "Health care and community services".

Regarding the type of contract, it can be observed that holding a permanent contract reduces the individual likelihood of low pay, in comparison with those workers employed under fixed-term contracts. In contrast, those hired through temporary agencies tend to be more at risk of low pay than those holding a fixed-term contract. However, when looking at the firm effects, we observe that the individual likelihood of low pay decreases with the percentages of employees under permanent or temp agency contracts. This indicates that firms might be using a floating work force to perform low-skilled jobs.

When firm effects are not taken into account, we find that workers who are covered by a *cla* because of mandatory (*cla* extension) are more likely to be low-paid in comparison to workers who are directly covered by *cla*. However, when controlling for additional firm effects, this difference is not observed any more. Furthermore, we find that comers are significantly more likely than stayers to be in low-wage employment and this difference is specially marked when firm effects are taken into account.

An important factor in explaining the likelihood of being in a low-pay situation is whether the individual is employed in a low-skilled job. The distinction between low-skilled and high-skilled job is based on the job level (see footnote 7). The results reveal that being employed in low-skilled jobs significantly increases the individual probability of earning below two-thirds of median earnings. The two hang together strongly but are not identical. In the next section we proceed with a more-in-depth analysis of the role of the firm with the help of the information contained in the AVO data. First we elaborate on other detail that this dataset offers.

Table 6 presents the distribution of people with a permanent, fixed-term or temp agency contract by type of industry. The majority of workers hold a permanent contract, but there are some differences between the industries. First, the highest percentage of workers with a fixed-term contract is found in hotels and catering, more than 28 per cent of all workers. Second, workers with a temp agency contract are found in rental and business services only, which is where temp agencies are classified as an industry – so unfortunately, we do not know where these workers are actually employed. This industry also has the lowest percentage of people holding a permanent contract (around 64 per cent).

Table 7 reports the proportion of workers in low-, medium- and high-paid jobs by job level and job type. The job level has been grouped into two categories: low skilled and high skilled (based on “*Functieniveau*” as explained before). In general, the highest percentage of workers employed in low-skilled jobs corresponds to commercial and care services, with 49.6 and 48.6 per cent respectively. This is also observed when looking at the sub-sample of low-paid workers. For example, we find that around 90 per cent of low-paid workers who are employed as “commercial” occupy low-skilled jobs.

In Table 8 we present the distribution of workers by job type and industry. The majority of workers employed in technical manual labor, creative and governance/policy occupations belongs to the industry sector. For example, more than 38 per cent of workers in technical manual labor are concentrated in manufacturing. People employed in administrative and automation are concentrated in rental and business services. And the majority of people employed as commercial are found in hotels and catering (more than 68 per cent). Finally, and unsurprisingly, we find that among workers employed in care and services, the highest percentage corresponds to “health and community services”.

Table 9 shows the distribution of stayers, leavers and comers, for low-, medium- and high-paid jobs. Looking at the information for 2001 (which is based on stayers and leavers) we find, in general, that the majority of workers are classified as stayers. However, while 89% of high-paid workers are classified as stayers and 11% as leavers, the corresponding percentages for low-paid workers are 61% and 39%. A similar pattern is observed for 2002 with 80% stayers among high-paid workers and only 55.7% among low-paid workers

Table 10 presents the distribution of stayers and leavers by type of industry in 2001. Again the majority of workers are stayers but we find some sectoral differences, with the highest percentage found in mining and utilities (95 and 93.5% respectively) and the lowest in rental and business services and hotels and catering (63.6 and 69.2% respectively). Again, in 2002 we find the highest proportion of stayers in mining and utilities (95.0 and 93.2% respectively), and the lowest shares in rental and business services (62.4%). These results provide some evidence regarding the degree of job mobility by type of industry. It seems that job mobility is significantly more likely in rental and business services since only half of the workers remain with the same employer between two consecutive years. In contrast, job stability seems much more likely in mining and utilities.

In Table 12 we picture the distribution of low-, medium- and high-paid workers by job level (low-skilled and high-skilled). As expected, the highest percentage of low-paid workers is found in low-skilled jobs, around 32% as against only 5.2% of workers in high-skilled jobs. The opposite is observed for high-paid workers: only 0.5% of people in low-skilled jobs as against 20% in high-skilled jobs.

7.3 DEEPENING THE ROLE OF THE FIRM

The AVO data allow us to take a closer look at the role of the firm with regard to both its personnel policies, especially turnover, and wage formation.

In Table 13 we present the descriptive statistics of the 1,798 firms included in our sample. The variables comprised in this table are the ones used for a regression model where the dependent variable is the log of the average wage within the firm. The estimation results, reported in Table 14, are based on information for the most recent year, 2002, and therefore concern stayers and

comers. The average wage firm declines with the percentages of: females in the workforce, workers with primary education and low-skilled jobs within the firm. In contrast, we find a positive and significant effect of the percentage of old workers and non-cla workers on the average wage within the firm. Furthermore, we find that the average wage within the firm tends to be lower in small firms.

In Table 15 we report the estimation results of a probit model where the dependent variable is a dummy variable that takes value 1 if we observe “high-turnover” of personnel within the firm. High turnover is defined on the basis of the ratio of comers to stayers, viz. if this ratio exceeds 25%. In addition to the explanatory variables listed in Table 14, we include a dummy variable that takes value 1 if more than 20% of the employees in the firm are low-paid ¹¹. The coefficient of this variable is found to be positive and statistically significant, which indicates that higher turnover tends to be more likely among firms with a higher percentage of low-paid workers.

Many studies in the literature provide evidence that individual earnings are affected by personal characteristics of workers. However, individual earnings are not an issue of worker’s characteristics only. It is possible that firms with different characteristics apply different policies concerning wages, either due to different production methods, different size, different business strategies etc (see Hachen (1992), and Haveman and Coven (1994)). Thus, the aim of this section is to investigate the simultaneous impact of firm and individual characteristics on individual earnings. Accordingly, firm characteristics have been incorporated in individual wage equations. However, the endogenous growth literature emphasizes the presence of technological or social externalities that generate higher returns to traditional factors, notably labor. It is likely that many externalities actually take place in the firm where the worker operates, since that is where the technological processes are most frequently exhibited and transmitted. One popular way to account for firm effects is to base the econometric analysis on matched worker-firm data that provide information about each worker including characteristics of the firms in which workers are employed.

Thus, given the two-level (employees and employer) structure of the AVO data, we proceed to estimate a wage equation that allows us to correct within-group (i.e. workers grouped in the same firm) correlations, as well as to control for unobserved firm characteristics.

The model to be estimated is as follows:

$$w_{ij} = \alpha + \beta x'_{ij} + \delta z'_j + v_j + \varepsilon_{ij} \quad (1)$$

where the subscript i refers to employee ($i= 1, \dots, n$), and j is the index for the firm ($j= 1, \dots, N$). Furthermore, w_{ij} denotes log of the hourly wage of individual i employed in firm j , x_{ij} is the vector containing the worker’s individual characteristics, and z_j is a vector containing firm covariates. The

¹¹ The average of turnover is found to be around 44%, so we can consider 25% as a high-turnover ratio. Furthermore the average percentage of low-paid workers in a firm is around 30%

average firm effect is denoted by α , which is constant across firms. Finally, the random disturbance consists of two parts: one part is due to the variation of the unobserved firm effects, i.e. ν ; the other is the part attributed to the individual disturbance term, i.e. ε . The estimations of model (1) are reported in the last two columns of Table 16¹².

As expected, the estimation results reveal that males receive higher wages than their female counterparts, and that wages increase substantially with age and educational attainments. Taking workers under collective labor agreements as the reference group, we find that those classified as “non-cla” earn significantly more. Other factors that significantly affect the individual earnings are job tenure, type of contract, whether the individual has stayed with the same employer or he/she is a newly-hired worker, and the job level. Considering workers with less than 2 years of seniority as the omitted category, we find those with 2-5 years, and specially those with more than 5 years of seniority, receiving higher wages. Regarding the type of contract, the results reveal that workers holding a permanent contract earn significantly more than those hired under fixed-term contracts. In contrast, temporary agency workers are found to earn significantly less than the reference but only when firm effects are not taken into account. When controlling for these firm effects we do not observe significant differences in terms of earnings between temporary agency and fixed-term workers. Finally, looking at the job level, the results go in the expected direction, with people employed in low-skilled jobs receiving lower wages.

As regards firm effects, the results reveal that individual earnings are higher in medium and large firms compared with small firms. We also find that wages tend to be lower in firms with a higher percentage of females, while both the average age of workers in the firm and the educational attainments positively affect the individual earnings. Furthermore, wages are found to be lower the higher the percentage of workers covered by a cla because of mandatory extension, and the higher the percentage of low-skilled jobs within the firm.

At the bottom of Table 16 we report the variance components. The between-firm wage variance is 0.0195, while the within-firm wage variance is 0.0495. The variance partition coefficient reveals that the between-firm wage variation accounts for 28.3 per cent. Therefore, not only the observed firm’s characteristics are significantly important in determining individual earnings, but also the unobserved ones. This gives some scope for further research on these unobserved factors at the firm level that might play an important role in determining individual earnings.

¹² The first two columns of Table 16 show the estimation results when firm effects are not taken into account. We use the same explanatory variables as in the estimation of the probit model reported in Table 5.

8. PROBABILITY OF LEAVING A LOW-PAID JOB (1995-2001)

From a welfare point of view it is important to address the question whether low pay is a transitory phenomenon of a worker's life, as predicted by the human capital theory, or whether it is a more serious and long lasting problem. If low-wage employment is a temporary experience for individuals, then there is less cause of concern than a situation where individuals who enter low-wage employment are unlikely to leave it.

In this chapter we investigate the extent of earnings mobility that characterizes those workers located at the *lower* end of the earnings distribution. We carry out a dynamic analysis of low wages to ascertain *whether* "lifetime" earnings inequality is significantly reduced by individuals' upward mobility in the earnings distribution, *as far as this can be observed from a six-year period*. For the purpose of this exercise, we adopt a multinomial logistic approach that allows us to separate upwards movements in the earnings distribution from transitions to non-employment.

The estimation results from the multinomial logistic regression are presented in Table 17, with a focus on marginal effects. The sample selected for this exercise is extracted from ECHP panel data for the *period* 1995 to 2001, and it *comprises* salaried workers aged 16 to 64 years who were low paid at *the time of* the first interview. The dependent variable is a three-point variable that takes value 0 if the individual remains low-paid in the following interviews, value 1 if he/she moves upwards in the earnings distribution, and value 2 if he/she makes a transition to non-employment. We find that more than 40% of low-paid workers experience an upwards transition in the earnings distribution, 43% remain low-paid and 16% move towards a non-employment situation¹³. International comparison of these results is difficult not only because of method (e.g. precise estimation, panel attrition, periodicity etc.) but also because of the available data. One important issue is the inclusion or not of part-time employees which can be done only on the basis of hourly earnings. With these caveats, Table 18 shows some transition proportions for several countries. Our Dutch results do not seem to significantly deviate from the set of other results. If anything the exits from the labor market seem to be relatively modest.

These results suggest that for a *considerable proportion* of workers (40 %), low-wage employment is a transient phenomenon of their working career, and that low pay *may perhaps* be considered as a stepping stone towards more stable and better paid jobs. However, there is still a high share of low-paid workers (more than 40%) that remain in low-wage employment *over all of* the following years.

Regarding the factors influencing the probability of moving out of low-wage employment several points are worthy of mentioning. First of all, we do not observe males, *once they are low paid*, being more likely than females to escape from low-wage employment towards better-paid jobs.

¹³ Within "non-employment" we include unemployment, inactivity and discouraged workers.

Second, our results reveal that age plays an important role regarding earnings mobility. In particular our findings show that age significantly influences the likelihood of escaping from low pay segments of the labor market. We observe workers 25 to 49 years old having a probability of moving upwards in the earnings distribution about twice that of the 16-24 years old. The effect becomes even more pronounced when looking at workers aged 50-64 years old. For this group the probability of making an upwards transition within the earnings distribution is 4.83 times higher than that of the reference category. However, for this *older* age group we also observe a significantly higher probability to move towards non-employment (5.13 times higher than that of the people aged between 16 and 24 years).

Another important factor that strongly influences the probability of transiting out of low-wage employment is the attained educational level. Low-paid workers with tertiary education present a probability to move upwards in the earnings distribution around 3 times higher than those with just primary education completed. The results also reveal that higher educational levels are related with lower probabilities of moving from low-wage employment towards non-employment. Low-paid part-timers, of which the Netherlands have relatively many, are found to be less likely to escape from low-wage employment towards better-paid jobs than their full-time counterparts and more likely to make a transition towards non-employment.

On-the-job training does not exert a significant effect on the probability of moving upwards in the earnings distribution, but we observe a negative and significant effect of this variable on the probability of moving from low pay towards non-employment.

The type of contract is another factor affecting the transitions out of low-wage employment. In particular, the results reveal that holding a permanent contract significantly increases the likelihood of moving from low- to high-wage employment and decreases the probability of moving towards non-employment.

Finally, regarding seniority, our results reveal that low-paid workers with job tenures between 2 and 5 years exhibit a probability of moving to better-paid jobs of around 2.5 times higher than the corresponding to those with less than two years of seniority. From 5 years tenure on, however, we do not find a significant effect on the probability of escaping.

In Table 19 we repeat the previous analysis for males and females separately. It is important to notice that for males being in part-time employment significantly reduces the likelihood of getting a better paid job, while it does not significantly affect the likelihood of making a transition from low pay to non-employment. In contrast, for females the marginal effect on the variable part-time is non-significant when estimating the probability of getting a better paid job, but working part-time clearly increase the likelihood of moving from low pay to non-employment.

9. CONCLUSIONS

Changes in the earnings distribution received considerable attention mainly due to the general increase of inequality in industrialized countries in recent decades. This widening of earnings differentials has given rise to increased analysis of the so-called low-paid jobs.

In this paper we exploit two datasets, the European Community Household Panel (1995-2001) and the Dutch AVO (2002) data, to analyze low-wage employment in the Netherlands. After describing the earnings distribution in the most recent years (2001 and 2002 respectively) of the two datasets, (Chapter 5) we first analyze the evolution of low-wage employment over the period 1995-2001 with the help of ECHP, looking at different individual (gender, age, education) and job characteristics (type of firm, part-time/full-time, type of contract, occupation and industry) in Chapter 6.

We then (Chapter 7) examine the main factors determining the probability of being low pay using both datasets. The analysis is again done for 2001 and 2002 for ECHP and AVO respectively. The estimation results provided by the ECHP reveal that, in general, low-wage employment is more likely among females, young workers, the low-educated, workers who do not receive on-the-job training, workers with a non-permanent contract and workers with short experience with the current employer. Working part-time (at least 15 hours/week) does not affect the probability. For 2002, a more complete analysis is performed with the help of the two-level (employer and employee) structure of the AVO data. The rich information at the firm level provided by this database allows us to control for a number of firm effects that may affect the individual likelihood of being low paid. The estimation results again show that low-wage employment is more likely among females, young workers, low-educated workers, and workers with shorter experience with current employment. But we also find that the individual probability of being low-paid is much higher the higher the percentage of female employment, the lower the average age of employees within the firm, the lower the proportion of workers with higher levels of education, and the lower the proportion of people with longer experience with the current employer. The results also reveal that, compared with those with a fixed-term contract, workers with a permanent contract are less likely to be low-paid while those hired through temporary agencies are more likely (see Table 5). However, the individual likelihood of low pay decreases with the percentage of employees under both, permanent and temporary agency contracts. Finally, being employed in a low-skilled job significantly increases the individual probability of being low-paid.

Next, we proceed to a more-in-depth analysis of the information at the firm level contained in the AVO data (Section 7.3). The main results can be summarized as follows. First, looking at the type of contract and type of industry, we find that the highest percentage of workers holding a fixed-term contract is found in hotels and catering, while rental and business services is the unique type of industry with temporary agency workers. Second, looking at the different job types, we find that

those employed in technical manual labor, commercial and care and services occupations tend to be more likely to have a low-skilled job. Third, looking at the different types of industries and job types at the same time, we observe that manufacturing is the type of industry more clearly associated with jobs included in the categories of technical manual labor, administrative, automation, creative and governance/policy. In contrast, the industries of hotels and catering and health and community services tend to be associated with commercial and care and services job types respectively. Fourth, we find that, looking at the total sample, the majority of workers are classified as stayers. The same is observed when looking at low-paid workers separately, although the proportion of stayers in this sub-sample is lower compared with the total sample (Table 9: in 2002 the proportion of stayers in the total sample is 80% while the corresponding percentage among those low-paid is only 67%). Fifth, as expected, we obtain that low-paid workers are more likely to be employed in low-skilled jobs. Sixth, we find that the average wage within a firm is lower the higher the percentages of females, low-educated and cla-extension workers respectively within the firm, and of low-skilled jobs. In contrast, we find a positive and significant effect of the percentage of older workers and stayers on the average wage within the firm. Furthermore, the results reveal that average wages tend to be lower in small firms. We also find that a higher rate of turnover is found to be more likely in firms with a higher percentage of low-paid workers. Finally we use the two-level (employees and employer) structure of the AVO data to estimate a wage equation that allows to correct within-group (that is workers grouped in the same firm) correlations, as well as to control for unobserved firm characteristics.

Last not least, in Chapter 8, we examine the determinants of leaving a low-pay situation. For that purpose, we carried out a multinomial logistic approach that allowed us to separate movements up within the earnings distribution from transitions to non-employment. The results obtained reveal that for almost half of the sample low-wage employment is a transient phenomenon. Furthermore, we find that the probability of escaping from low-wage employment towards better paid jobs is significantly higher amongst older workers, high-educated, full-timers, workers holding a permanent contract, and workers with 2-5 years of experience with current employer. It is interesting to note that working part-time lowers the probability of moving towards higher pay for men and raises the probability of exiting the labor market for women. At the same time the aggregate rate of leaving the labor market does not seem high by international standards. As the Netherlands have a very high rate of part-time employment by international standards, particularly among women, this suggests interesting questions for further research such as how do the small part-time jobs fare, which the data forced us to leave out? and how does working part-time affect transition probabilities in other countries?

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APPENDIX

Datasets: Advantages and Disadvantages

ECHP		AVO	
Advantages Panel data: We can do a dynamic analysis Rich information on individuals and households Information both on public and private sector	Disadvantages Small sample size Problems with the educational variables from 1998 on We do not observe individuals in part-time employment <15 hours/week	Advantages Information from the firm side Large sample size	Disadvantages Impossibility to do a dynamic analysis Lack of information on individual and family background Information only on private sector We do not observe individuals in part-time employment

Table I: Descriptive Statistics (ECHP 2001)

	A. Public and Private Sector				B. Only Private Sector			
	Total N=4,472 (100%)	Low pay N=780 (17.44%)	Medium pay N=2,964 (66.28%)	High pay N=728 (16.28%)	Total N=3,173 (100%)	Low pay N=610 (19.22%)	Medium pay N=2,074 (65.36%)	High pay N=489 (15.41%)
Male	0.565	0.409	0.562	0.746	0.610	0.449	0.616	0.785
Age								
16-24	0.086	0.374	0.030	0.005	0.103	0.411	0.036	0.006
25-49	0.712	0.527	0.776	0.651	0.713	0.502	0.777	0.706
50-65	0.201	0.096	0.194	0.341	0.183	0.084	0.188	0.286
Education								
Primary Ed.	0.173	0.333	0.160	0.055	0.203	0.352	0.190	0.067
Second. Ed.	0.489	0.5	0.527	0.325	0.517	0.511	0.553	0.372
Tertiary Ed.	0.337	0.167	0.313	0.619	0.280	0.136	0.256	0.560
Part-time job	0.240	0.317	0.230	0.199	0.214	0.305	0.197	0.174
On-the-job training	0.681	0.497	0.709	0.761	0.639	0.464	0.665	0.744
Type of firm								
Public	0.280	0.194	0.293	0.319				
Private (<50)	0.268	0.388	0.257	0.183	0.378	0.497	0.368	0.272
Private (50-500)	0.243	0.255	0.243	0.228	0.342	0.326	0.348	0.339
Private (>500)	0.198	0.138	0.199	0.261	0.280	0.177	0.284	0.389
Permanent Contract	0.892	0.696	0.929	0.951	0.885	0.692	0.929	0.941
No unemployment	0.135	0.171	0.137	0.086	0.134	0.161	0.137	0.090
Job duration								
<2 years	0.242	0.486	0.194	0.176	0.258	0.488	0.201	0.215
2 – 5 years	0.214	0.256	0.223	0.132	0.229	0.272	0.237	0.141
> 5 years	0.544	0.258	0.583	0.692	0.512	0.239	0.562	0.644
Occupation								
Legislators, senior officials and managers	0.093	0.017	0.088	0.196	0.109	0.020	0.105	0.237
Professionals	0.162	0.078	0.150	0.301	0.108	0.056	0.103	0.198
Technicians and associate professionals	0.184	0.126	0.211	0.139	0.175	0.110	0.200	0.151
Clerks	0.106	0.128	0.113	0.058	0.115	0.134	0.121	0.063
Service workers and shop and market sales workers	0.084	0.181	0.073	0.026	0.091	0.197	0.075	0.026
Skilled agricultural and fishery workers	0.008	0.014	0.008	0.004	0.009	0.015	0.009	0.006
Craft and related trade workers	0.065	0.078	0.074	0.012	0.083	0.095	0.095	0.018
Plant and machine operators and assemblers	0.048	0.068	0.051	0.016	0.062	0.084	0.065	0.024
Elementary occupations	0.034	0.074	0.031	0.004	0.036	0.075	0.031	0.006
Type of industry								
Agriculture	0.010	0.017	0.009	0.005	0.013	0.020	0.013	0.008
Industry	0.141	0.127	0.154	0.106	0.185	0.146	0.206	0.141
Services	0.545	0.556	0.544	0.540	0.462	0.534	0.449	0.427

Source: Eurostat, ECHP, authors' calculations

Table 2: Descriptive Statistics (AVO 2002)

	Total (100%)	Low pay (15.35%)	Medium pay (71.97%)	High pay (12.67%)
Male	0,548	0,428	0,536	0,761
Age				
16-25	0,161	0,625	0,089	0,007
25-50	0,665	0,293	0,735	0,717
50-65	0,174	0,082	0,176	0,276
Education				
Primary	0,235	0,424	0,217	0,110
Secondary	0,614	0,557	0,684	0,284
Tertiary	0,150	0,018	0,098	0,606
Type of Employee				
cla	0,757	0,705	0,783	0,678
cla-extension	0,046	0,102	0,041	0,007
non-cla	0,196	0,193	0,176	0,315
Firm Size				
Small	0,373	0,527	0,369	0,214
Medium	0,295	0,201	0,304	0,354
Large	0,332	0,272	0,327	0,432
Seniority				
<2 years	0,332	0,643	0,294	0,170
2-5 years	0,254	0,266	0,259	0,207
>5 years	0,414	0,091	0,447	0,623
Type of contract				
Permanent	0,826	0,602	0,854	0,934
Fixed-term	0,139	0,310	0,116	0,063
Temp agency	0,035	0,088	0,030	0,004
Type of Worker				
Stayers	0,799	0,557	0,830	0,917
Comers	0,201	0,443	0,170	0,083
Job type				
T1	0,236	0,176	0,272	0,099
T2	0,133	0,063	0,149	0,125
T3	0,023	0,002	0,020	0,066
T4	0,128	0,237	0,102	0,144
T5	0,358	0,424	0,369	0,215
T6	0,022	0,007	0,018	0,066
T7	0,060	0,003	0,035	0,273
T9	0,040	0,089	0,034	0,012
Job level ¹⁴				
Low-skilled job	0,377	0,790	0,352	0,015
High-skilled job	0,623	0,210	0,648	0,985
Industry dummies				
Agriculture	0,016	0,021	0,017	0,007
Mining	0,001	0,000	0,001	0,005
Manufacturing	0,155	0,075	0,166	0,189
Utilities	0,006	0,000	0,004	0,021
Construction	0,067	0,032	0,078	0,044
Repair and trade	0,194	0,323	0,181	0,112
Hotels and catering	0,042	0,115	0,033	0,003
Transportation and communication	0,075	0,062	0,078	0,071
Financial services	0,043	0,010	0,040	0,099
Rental and business services	0,187	0,267	0,164	0,221
Health care and community services	0,170	0,041	0,197	0,172
Cultural, recreational and other services	0,045	0,053	0,041	0,054

Source: Labor Inspectorate, AVO dataset, authors' calculations

¹⁴ “Low-skilled” is a dummy variable taking value 1 if the job level of the job in which the individual is employed is: Functieniveau i, ii, and iii-laag.

Table 3: Classification of occupations and industries

ECHP		AVO	
Occupation		Type of job	
O1	Legislators, senior officials and managers.	T1	Technical manual labor
O2	Professionals	T2	Administrative
O3	Technicians and associate professionals.	T3	Automation
O4	Clerks	T4	Commercial
O5	Service workers and shop and market sales workers	T5	Care and services
O6	Skilled agricultural and fishery workers	T6	Creative
O7	Craft and related trade workers	T7	Governance/policy
O8	Plant and machine operators and assemblers	T8	Unknown
O9	Elementary occupations		
Industry		Industry	
Agric	Agriculture	I1	Agriculture
Indus	Industry	I2	Mining
Serv1	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal/household goods	I3	Manufacturing
Serv2	Hotels and restaurants	I4	Utilities
Serv3	Transport, storage and communication	I5	Construction
Serv4	Financial intermediation	I6	Repair and trade
Serv5	Real state, renting and business activities	I7	Hotels and catering
Serv6	Public administration and defense; compulsory social security	I8	Transportation and communication
Serv7	Education	I9	Financial services
Serv8	Health and social work	I10	Rental and business services
Serv9	Other community, social and personal service activities; private households with employed persons; extra-territorial organizations and bodies	I11	Health care and community services
		I12	Cultural, recreational and other services

Table 4: Probit Model for the probability of being low-paid (ECHP 2001)

	Coefficient	t
Male	-0.481	-7.88
Age		
16-24	-	-
25-49	-1.357	-16.45
50-65	-1.480	-14.05
Education		
Primary Ed.	-	-
Second. Ed.	-0.182	-2.70
Tertiary Ed.	-0.429	-4.99
Part-time job	-0.062	-0.96
On-the-job training	-0.224	-3.89
Type of firm		
Public	-0.072	-0.98
Private (<50)	-	-
Private (50-500)	-0.009	-0.14
Private (>500)	-0.158	-1.95
Permanent Contract	-0.468	-5.97
No unemployment	0.068	0.95
Job duration		
<2 years	-	-
2 – 5 years	-0.112	-1.54
> 5 years	-0.485	-6.99
Occupation		
Legislators, senior officials and managers	-0.848	-5.70
Professionals	-0.369	-3.78
Technicians and associate professionals	-0.340	-4.30
Clerks	-0.112	-1.29
Service workers and shop and market sales workers		
Skilled agricultural and fishery workers	-0.305	-0.83
Craft and related trade workers	0.004	0.03
Plant and machine operators and assemblers	0.217	1.80
Elementary occupations	0.342	2.71
Type of industry		
Agriculture	0.346	1.04
Industry	-0.038	-0.43
Services	-	-
Constant	1.265	10.03
N	4,472	
Log likelihood	-1,468	

Source: Eurostat, ECHP, authors' calculations

Table 5: Probit Model for the probability of being low-paid, with and without firm effects (AVO 2002)

	Without including firm effects		Including firm effects	
	Coefficient	t	Coefficient	t
Male	-0,390	-15,15	-0,242	-8,17
Age				
16-24				
25-49	-1,476	-56,84	-1,443	-51,77
50-65	-1,332	-33,61	-1,257	-28,95
Education				
Primary				
Secondary	-0,357	-12,75	-0,282	-6,48
Tertiary	-0,814	-11,53	-0,609	-7,31
Type of Employee				
cla				
cla-extension	0,172	3,29	0,063	0,16
non-cla	0,059	1,97	0,422	3,91
Firm Size				
Small	-	-	-	-
Medium	-0,311	-11,82	-0,209	-7,59
Large	-0,361	-9,96	-0,254	-6,51
Seniority				
<2 years				
2-5 years	-0,143	-4,20	-0,151	-4,05
>5 years	-0,586	-14,77	-0,549	-12,56
Type of contract				
Permanent				
Fixed-term	-0,225	-6,79	-0,166	-4,09
Temp agency	-0,175	-1,02	0,589	2,21
Type of Worker				
Stayers				
Comers	0,065	1,76	0,139	3,41
Job type				
T1	-	-	-	-
T2	-0,355	-7,35	-0,294	-5,97
T3	-0,496	-3,45	-0,390	-2,70
T4	0,074	1,66	-0,138	-2,89
T5	0,160	4,55	0,064	1,76
T6	-0,014	-0,12	-0,028	-0,22
T7	-0,485	-3,26	-0,751	-4,88
T9	0,776	4,74	0,738	4,36
Low-skilled job	1,081	37,04	0,863	23,50
Industry dummies				
Agriculture	-0,155	-2,07	-0,178	-2,32
Mining	-0,665	-3,13	-0,354	-1,68
Manufacturing	-0,198	-5,00	-0,032	-0,76
Construction	-0,433	-6,83	-0,254	-3,89
Repair and trade				
Hotels and catering	-0,144	-2,47	-0,282	-4,65
Transportation and communication	0,271	6,01	0,394	8,27
Financial services	-0,442	-4,92	-0,293	-3,21
Rental and business services	-0,002	-0,04	0,007	0,15
Health care and community services	-0,922	-14,68	-1,006	-14,81
Cultural, recreational and other services	-0,007	-0,13	-0,058	-1,02
Firm Effects				
% Females			0,637	10,53
Average age of employees in the firm			-0,014	-5,38
% Employees with secondary education			-0,022	-0,37
% Employees with tertiary education			-0,553	-4,79
% cla-extension employees in the firm			0,086	0,21
% non-cla employees in the firm			-0,335	-2,96
% Employees with 2-5 years of seniority			0,018	0,17
% Employees with more than 5 years of seniority			-0,199	-2,02

% Employees under permanent contract			-0,128	-1,61
% Employees under Temp agency contract			-0,811	-3,19
% Comers			-0,284	-2,22
% Low-skilled jobs in the firm			0,422	7,46
Constant	0,371	5,44	0,541	4,23
N	40012		40012	
Log likelihood	-7688		-7465	

Source: Labor Inspectorate, AVO dataset, authors' calculations

Table 6: % Permanent, Fixed-term and TWA employment contracts by industry

Industry		Mean	N
Agriculture	Permanent	0,827	779
	Fixed-term	0,173	779
	Temp agency	0,000	779
Mining	Permanent	0,974	359
	Fixed-term	0,026	359
	Temp agency	0,000	359
Manufacturing	Permanent	0,928	10154
	Fixed-term	0,072	10154
	Temp agency	0,000	10154
Utilities	Permanent	0,984	740
	Fixed-term	0,016	740
	Temp agency	0,000	740
Construction	Permanent	0,880	2388
	Fixed-term	0,120	2388
	Temp agency	0,000	2388
Repair and trade	Permanent	0,834	7164
	Fixed-term	0,166	7164
	Temp agency	0,000	7164
Hotels and catering	Permanent	0,719	1107
	Fixed-term	0,281	1107
	Temp agency	0,000	1107
Transportation and communication	Permanent	0,905	3379
	Fixed-term	0,095	3379
	Temp agency	0,000	3379
Financial services	Permanent	0,930	1967
	Fixed-term	0,070	1967
	Temp agency	0,000	1967
Rental and business services	Permanent	0,643	6648
	Fixed-term	0,168	6648
	Temp agency	0,189	6648
Health care and community services	Permanent	0,855	3319
	Fixed-term	0,145	3319
	Temp agency	0,000	3319
Cultural, recreational and other services	Permanent	0,846	2008
	Fixed-term	0,154	2008
	Temp agency	0,000	2008
Total	Permanent	0,826	40012
	Fixed-term	0,139	40012
	Temp agency	0,035	40012

Source: Labor Inspectorate, AVO dataset, authors' calculations

Table 7: Job Type and Job Level (low-skilled vs high-skilled)

Job Type	Job Level	Total		Low pay		Medium pay		High pay	
		Mean	N	Mean	N	Mean	N	Mean	N
Technical manual labor	Low-skilled	0,442	11858	0,890	1196	0,406	9775	0,049	887
	High-skilled	0,558	11858	0,110	1196	0,594	9775	0,951	887
Administrative	Low-skilled	0,242	5934	0,532	310	0,249	4693	0,023	931
	High-skilled	0,758	5934	0,468	310	0,751	4693	0,977	931
Automation	Low-skilled	0,018	1126	0,211	16	0,025	685	0,000	425
	High-skilled	0,982	1126	0,789	16	0,975	685	1,000	425
Commercial	Low-skilled	0,496	4663	0,900	847	0,416	2788	0,009	1028
	High-skilled	0,504	4663	0,100	847	0,584	2788	0,991	1028
Care and services	Low-skilled	0,486	11498	0,898	2082	0,433	8484	0,023	932
	High-skilled	0,514	11498	0,102	2082	0,567	8484	0,977	932
Creative	Low-skilled	0,067	965	0,689	32	0,057	534	0,008	399
	High-skilled	0,933	965	0,311	32	0,943	534	0,992	399
Governance/policy	Low-skilled	0,011	3016	0,063	11	0,023	989	0,001	2016
	High-skilled	0,989	3016	0,937	11	0,977	989	0,999	2016
Unknown	Low-skilled	0,001	952	0,003	289	0,000	587	0,000	76
	High-skilled	0,999	952	0,997	289	1,000	587	1,000	76
Total	Low-skilled	0,377	40012	0,790	4783	0,352	28535	0,015	6694
	High-skilled	0,623	40012	0,210	4783	0,648	28535	0,985	6694

Source: Labor Inspectorate, AVO dataset, authors' calculations

Job Type	Industry	Mean	N
Technical manual labor	Agriculture	0,041	11858
	Mining	0,002	11858
	Manufacturing	0,383	11858
	Utilities	0,010	11858
	Construction	0,224	11858
	Repair and trade	0,146	11858
	Hotels and catering	0,005	11858
	Transportation and communication	0,036	11858
	Financial services	0,026	11858
	Rental and business services	0,080	11858
	Health care and community services	0,019	11858
Cultural, recreational and other services	0,029	11858	
Administrative	Agriculture	0,006	5934
	Mining	0,003	5934
	Manufacturing	0,124	5934
	Utilities	0,008	5934
	Construction	0,049	5934
	Repair and trade	0,160	5934
	Hotels and catering	0,005	5934
	Transportation and communication	0,077	5934
	Financial services	0,141	5934
	Rental and business services	0,259	5934
	Health care and community services	0,113	5934
Cultural, recreational and other services	0,055	5934	
Automation	Agriculture	0,003	1126
	Mining	0,001	1126
	Manufacturing	0,112	1126
	Utilities	0,006	1126
	Construction	0,003	1126
	Repair and trade	0,091	1126
	Hotels and catering	0,000	1126
	Transportation and communication	0,061	1126
	Financial services	0,058	1126
	Rental and business services	0,589	1126
	Health care and community services	0,036	1126
Cultural, recreational and other services	0,040	1126	
Commercial	Agriculture	0,002	4663
	Mining	0,001	4663
	Manufacturing	0,080	4663
	Utilities	0,002	4663
	Construction	0,008	4663
	Repair and trade	0,686	4663
	Hotels and catering	0,019	4663
	Transportation and communication	0,034	4663
	Financial services	0,060	4663
	Rental and business services	0,096	4663
	Health care and community services	0,004	4663
Cultural, recreational and other services	0,008	4663	
Care and services	Agriculture	0,013	11498
	Mining	0,000	11498
	Manufacturing	0,051	11498
	Utilities	0,003	11498
	Construction	0,006	11498
	Repair and trade	0,092	11498
	Hotels and catering	0,100	11498
	Transportation and communication	0,123	11498
	Financial services	0,009	11498
	Rental and business services	0,150	11498
	Health care and community services	0,391	11498
Cultural, recreational and other services	0,062	11498	
Creative	Agriculture	0,007	965
	Mining	0,002	965
	Manufacturing	0,208	965
	Utilities	0,005	965
	Construction	0,002	965
	Repair and trade	0,088	965

	Hotels and catering	0,017	965
	Transportation and communication	0,012	965
	Financial services	0,012	965
	Rental and business services	0,400	965
	Health care and community services	0,093	965
	Cultural, recreational and other services	0,154	965
Governance/policy	Agriculture	0,014	3016
	Mining	0,005	3016
	Manufacturing	0,201	3016
	Utilities	0,010	3016
	Construction	0,074	3016
	Repair and trade	0,213	3016
	Hotels and catering	0,022	3016
	Transportation and communication	0,061	3016
	Financial services	0,086	3016
	Rental and business services	0,157	3016
	Health care and community services	0,110	3016
	Cultural, recreational and other services	0,046	3016
Unknown	Agriculture	0,000	952
	Mining	0,000	952
	Manufacturing	0,010	952
	Utilities	0,000	952
	Construction	0,001	952
	Repair and trade	0,030	952
	Hotels and catering	0,000	952
	Transportation and communication	0,063	952
	Financial services	0,000	952
	Rental and business services	0,887	952
	Health care and community services	0,004	952
	Cultural, recreational and other services	0,006	952
Total	Agriculture	0,016	40012
	Mining	0,001	40012
	Manufacturing	0,155	40012
	Utilities	0,006	40012
	Construction	0,067	40012
	Repair and trade	0,194	40012
	Hotels and catering	0,042	40012
	Transportation and communication	0,075	40012
	Financial services	0,043	40012
	Rental and business services	0,187	40012
	Health care and community services	0,170	40012
	Cultural, recreational and other services	0,045	40012

Source: Labor Inspectorate, AVO dataset, authors' calculations

Table 9: Sample Distribution: Skill Level and Type of Worker (%)

	2001				2002			
	Low pay	Medium pay	High pay	Total	Low pay	Medium pay	High pay	Total
Stayers	61,00	83,57	89,13	80,60	55,73	83,01	91,73	79,93
Leavers	39,00	16,43	10,87	19,40	0	0	0	0
Comers	0	0	0	0	44,27	16,99	8,27	20,07
Total	100	100	100	100	100	100	100	100

Source: Labor Inspectorate, AVO dataset, authors' calculations

Table 10: % Type of workers by industry (2001)

Industry	Type of worker	Low pay	Medium pay	High pay	Total
Agriculture	Stayers	0,746	0,830	0,931	0,819
	Leavers	0,254	0,170	0,069	0,181
Mining	Stayers	0,671	0,923	0,987	0,949
	Leavers	0,329	0,077	0,013	0,051
Manufacturing	Stayers	0,751	0,902	0,921	0,893
	Leavers	0,249	0,098	0,079	0,107
Utilities	Stayers	0,687	0,938	0,932	0,935
	Leavers	0,313	0,062	0,068	0,065
Construction	Stayers	0,683	0,857	0,935	0,849
	Leavers	0,317	0,143	0,065	0,151
Repair and trade	Stayers	0,645	0,838	0,884	0,792
	Leavers	0,355	0,162	0,116	0,208
Hotels and catering	Stayers	0,594	0,770	1,000	0,692
	Leavers	0,406	0,230	0,000	0,308
Transportation and communication	Stayers	0,812	0,895	0,905	0,884
	Leavers	0,188	0,105	0,095	0,116
Financial services	Stayers	0,750	0,862	0,910	0,871
	Leavers	0,250	0,138	0,090	0,129
Rental and business services	Stayers	0,422	0,671	0,839	0,636
	Leavers	0,578	0,329	0,161	0,364
Health care and community services	Stayers	0,761	0,875	0,873	0,870
	Leavers	0,239	0,125	0,127	0,130
Cultural, recreational and other services	Stayers	0,721	0,862	0,939	0,848
	Leavers	0,279	0,138	0,061	0,152
Total	Stayers	0,610	0,836	0,891	0,806
	Leavers	0,390	0,164	0,109	0,194

Source: Labor Inspectorate, AVO dataset, authors' calculations

Industry	Type of worker	Low pay	Medium pay	High pay	Total
Agriculture	Stayers	0,694	0,827	0,937	0,807
	Comers	0,306	0,173	0,063	0,193
Mining	Stayers	0,623	0,946	0,960	0,950
	Comers	0,377	0,054	0,040	0,050
Manufacturing	Stayers	0,665	0,919	0,946	0,904
	Comers	0,335	0,081	0,054	0,096
Utilities	Stayers		0,921	0,945	0,932
	Comers		0,079	0,055	0,068
Construction	Stayers	0,597	0,866	0,928	0,851
	Comers	0,403	0,134	0,072	0,149
Repair and trade	Stayers	0,588	0,858	0,922	0,793
	Comers	0,412	0,142	0,078	0,207
Hotels and catering	Stayers	0,622	0,767	0,979	0,708
	Comers	0,378	0,233	0,021	0,292
Transportation and communication	Stayers	0,718	0,910	0,937	0,889
	Comers	0,282	0,090	0,063	0,111
Financial services	Stayers	0,675	0,890	0,955	0,901
	Comers	0,325	0,110	0,045	0,099
Rental and business services	Stayers	0,398	0,643	0,875	0,624
	Comers	0,602	0,357	0,125	0,376
Health care and community services	Stayers	0,497	0,830	0,893	0,825
	Comers	0,503	0,170	0,107	0,175
Cultural, recreational and other services	Stayers	0,634	0,858	0,935	0,829
	Comers	0,366	0,142	0,065	0,171
Total	Stayers	0,557	0,830	0,917	0,799
	Comers	0,443	0,170	0,083	0,201

		Mean	N
Low-skilled job	Low pay	0,322	14171
	Medium pay	0,673	14171
	High pay	0,005	14171
High-skilled job	Low pay	0,052	25841
	Medium pay	0,748	25841
	High pay	0,200	25841
Total	Low pay	0,153	40012
	Medium pay	0,720	40012
	High pay	0,127	40012

Table 13: Descriptive Statistics at the firm level

	Mean	Std. Dev
% Females	0,380	0,329
% Employees with primary education	0,133	0,267
% Employees with secondary education	0,727	0,305
% Employees with tertiary education	0,129	0,213
% Employees aged 16-24	0,172	0,223
% Employees aged 25-49	0,651	0,244
% Employees aged 50-65	0,165	0,185
% Stayers	0,788	0,191
% Comers	0,212	0,185
% cla employees in the firm	0,591	0,475
% cla-extension employees in the firm	0,081	0,269
% non-cla employees in the firm	0,316	0,451
% Employees under permanent contract	0,822	0,227
% Employees under fixed-term contract	0,164	0,219
% Employees with less than 2 years of seniority	0,358	0,261
% Employees with 2-5 years of seniority	0,268	0,223
% Employees with more than 5 years of seniority	0,362	0,285
% Small firms	0,422	0,494
% Employees in job level "Technical manual labor"	0,317	0,367
% Employees in job level "Administrative"	0,153	0,223
% Employees in job level "Automation"	0,021	0,098
% Employees in job level "Commercial"	0,141	0,265
% Employees in job level "Care and services"	0,280	0,361
% Employees in job level "Creative"	0,024	0,110
% Employees in job level "Governance/policy"	0,048	0,081
% Employees in job level "Unknown"	0,004	0,052
% Employees in low-skilled jobs	0,405	0,359
N	1,798	

Table 14: Regression Model (Log average wage within the firm, 2002)

	Coefficient	t
<i>Percentage of:</i>		
Female	-0,155	-2,87
Workers with primary education	-0,208	-2,48
Workers with secondary education	-0,108	-1,43
Workers aged 25-49	0,635	9,57
Workers aged 50-65	0,658	7,44
Stayers	0,034	0,35
cla-extension workers	0,010	0,21
non-cla workers	0,084	2,50
Permanent workers	-0,006	-0,09
Workers with 2-5 years of seniority	0,076	0,98
Workers with more than 5 years of seniority	-0,016	-0,22
Small firm*	-0,172	-5,57
<i>Percentage of:</i>		
T2	0,161	2,00
T3	-0,120	-0,83
T4	0,139	2,05
T5	-0,115	-1,99
T6	0,122	0,97
T7	0,517	2,99
T8	-0,962	-3,78
Percentage of low-skilled jobs	-0,191	-4,34
<i>Industry dummies</i>		
Agriculture	0,177	2,33
Mining	0,128	1,03
Manufacturing	0,108	2,43
Utilities	0,261	1,93
Construction	0,232	3,79
Repair and trade		
Hotels and catering	0,220	3,05
Transportation and communication	0,086	1,45
Financial services	0,046	0,63
Rental and business services	0,112	2,26
Health care and community services	0,343	4,63
Cultural, recreational and other services	0,248	3,88
Constant	1,796	16,44
N	1798	
R-squared	0.53	

*) Medium-sized and large firms were taken together as a reference because of the small number of large firms

Table 15: Probit Model for High turnover in the firm (2002)¹⁵

	Coefficient	t
Low ¹⁶	0,174	1,66
Percentage of:		
Female	0,033	0,22
Workers with primary education	0,237	1,04
Workers with secondary education	0,341	1,67
Workers aged 25-49	-0,101	-0,49
Workers aged 50-65	-0,546	-2,08
cla-extension workers	-0,414	-3,02
non-cla workers	-0,019	-0,21
Permanent workers	-1,418	-7,61
Workers with 2-5 years of seniority	-1,858	-9,77
Workers with more than 5 years of seniority	-2,285	-12,84
Small firm*	-0,485	-5,80
Percentage of:		
T2	0,611	2,79
T3	0,583	1,52
T4	0,307	1,67
T5	0,584	3,71
T6	0,027	0,08
T7	1,352	2,99
T8	0,017	0,02
Percentage of low-skilled jobs	0,041	0,33
Industry dummies		
Agriculture	-0,266	-1,30
Mining	-0,457	-1,43
Manufacturing	0,207	1,73
Utilities	-0,140	-0,40
Construction	0,224	1,39
Repair and trade		
Hotels and catering	-0,356	-1,81
Transportation and communication	-0,101	-0,64
Financial services	-0,124	-0,65
Rental and business services	-0,016	-0,12
Health care and community services	-0,057	-0,28
Cultural, recreational and other services	-0,084	-0,49
Constant	2,411	8,05
N	1798	
Log likelihood	-942	

*) Medium-sized and large firms were taken together as a reference because of the small number of large firms

¹⁵ The dependent variable is a dummy variable that takes value 1 if the proportion of comers/stayers in 2002 in the firm is 25% or higher.

¹⁶ Variable "Low" is a dummy variable that takes value 1 if more than 20% of the employees in the firm are low-paid.

Table 16: Wage equation (controlling for firm effects)				
	Without including firm effects		Including firm effects	
	Coefficient	t	Coefficient	t
Male	0,124	37,36	0,095	30,85
Age				
16-24	-	-	-	-
25-49	0,383	88,31	0,319	81,73
50-65	0,436	81	0,366	75,15
Education				
Primary				
Secondary	0,053	13,29	0,058	11,26
Tertiary	0,347	64,55	0,319	50,35
Type of Employee				
collective labor agreement (cla)	-	-	-	-
cla-extension	0,008	0,98	0,088	2,18
non-cla	0,071	20,09	0,187	23,14
Firm Size				
Small	-	-	-	-
Medium	0,068	20,29	0,057	6,32
Large	0,105	24,79	0,106	6,61
Seniority				
<2 years	-	-	-	-
2-5 years	0,032	6,81	0,033	7,94
>5 years	0,099	21,79	0,094	22,79
Type of contract				
Permanent	-	-	-	-
Fixed-term	0,047	9,58	0,054	11,14
Temp agency worker	-0,208	-8,28	0,030	0,92
Type of Worker				
Stayers	-	-	-	-
Comers	0,002	0,33	-0,005	-0,99
Job type				
T1	-	-	-	-
T2	0,063	12,99	0,030	6,59
T3	0,063	7,07	0,055	6,29
T4	0,051	9,65	0,109	20,61
T5	-0,019	-4,29	0,014	3,1
T6	0,076	8,09	0,078	8,54
T7	0,312	52,12	0,306	55,61
T9	0,133	5,76	-0,078	-3,21
Low-skilled job	-0,218	-66	-0,196	-57,27
Industry dummies				
Agriculture	0,056	5,44	0,077	3,33
Mining	0,243	16,48	0,232	6,27
Manufacturing	0,082	18,02	0,074	5,97
Utilities	0,280	26,33	0,246	6,64
Construction	0,124	18,14	0,121	6,97
Repair and trade	-	-	-	-
Hotels and catering	0,024	2,65	0,025	1,23
Transportation and communication	0,049	8,35	0,006	0,37
Financial services	0,204	28,82	0,170	8,03
Rental and business services	0,066	12,82	0,076	5,41
Health care and community services	0,161	24,52	0,165	8,32
Cultural, recreational and other services	0,083	11,7	0,084	4,69
Firm Effects				
% Females			-0,112	-7,01
Average age of employees in the firm			0,008	10,97
% Employees with secondary education			-0,011	-0,66
% Employees with tertiary education			0,103	4,02
% cla-extension employees in the firm			-0,114	-2,61
% non-cla employees in the firm			-0,167	-13

% Employees with 2-5 years of seniority			-0,009	-0,35
% Employees with more than 5 years of seniority			-0,026	-1,01
% Employees under permanent contract			-0,009	-0,38
% Employees under Temp agency contract			0,000	0
% Comers			0,076	2,26
% Low-skilled jobs in the firm			-0,027	-1,9
Constant	1,832	197,39	1,658	43,49
N	40012		40012	
Between-firm wage variance (σ_v^2)			0,0195	
Within-firm variance (σ_ε^2)			0,0495	
Variance partition coefficient ($\frac{\sigma_v^2}{\sigma_v^2 + \sigma_\varepsilon^2}$)			0,283	

Table 17: Multinomial Logit Model for the probability of leaving low pay situation (ECHP 1995-2001)

	Ln[Pr(z=1)/Pr(z=0)]		Ln[Pr(z=2)/Pr(z=0)]	
	RRR	t	RRR	t
Male	1.160	0.93	0.705	-1.67
Age				
16-25	-	-	-	-
25-50	3.899	8.58	1.652	2.43
50-65	4.832	4.39	5.133	4.08
Education				
Primary Ed.	-	-	-	-
Second. Ed	1.489	1.53	0.483	-2.82
Tertiary Ed.	2.949	3.25	0.460	-1.96
Part-time job	0.620	-2.91	1.477	1.96
On-the-job training	0.893	-0.73	0.621	-2.21
Type of firm				
Public	1.499	1.80	1.145	0.45
Private (<50)	-	-	-	-
Private (50-500)	1.383	1.83	1.369	1.42
Private >500	1.335	1.34	1.014	0.05
Perm. Contract	1.513	2.71	0.440	-4.19
Unemployed at least once in previous years	1.052	0.30	0.928	-0.35
Job Duration				
<2 years	-	-	-	-
2 – 5 years	2.491	4.63	1.232	0.74
> 5 years	1.264	1.21	0.690	-1.41
Occupation				
Legislators, senior officials and managers	2.192	1.83	2.292	1.47
Professionals	1.913	1.81	1.536	0.91
Technicians and associate professionals	1.862	2.71	0.885	-0.37
Clerks	0.897	-0.49	0.548	-2.01
Service workers and shop and market sales workers	-	-	-	-
Skilled agricultural and fishery workers	2.703	2.27	2.548	1.92
Craft and related trade workers	1.065	0.24	1.142	0.40
Plant and machine operators and assemblers	1.639	1.73	1.075	0.20
Elementary occupations	0.828	-0.75	0.914	-0.31
% Observations	41.18		16.20	
N	1,253			
Log likelihood	-1,108			

Source: Eurostat, ECHP, authors' calculations

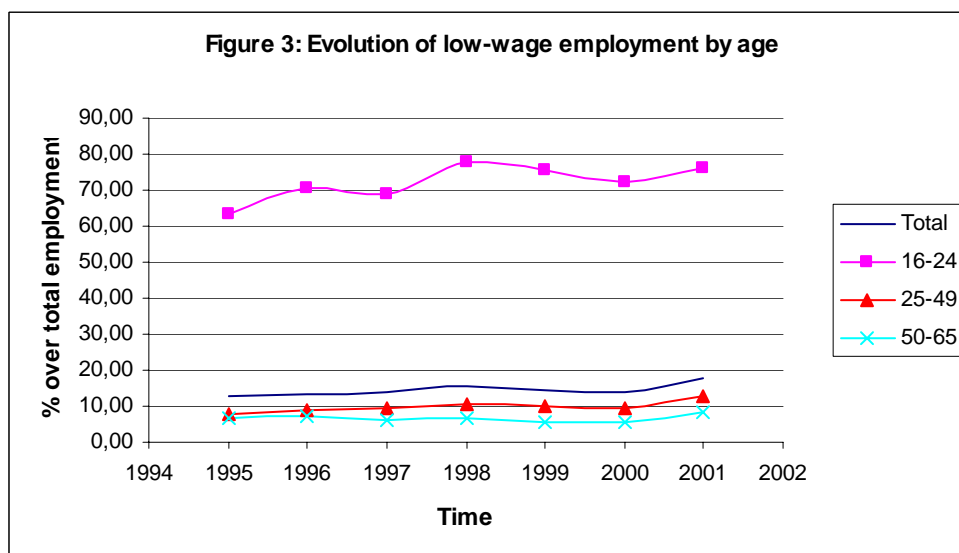
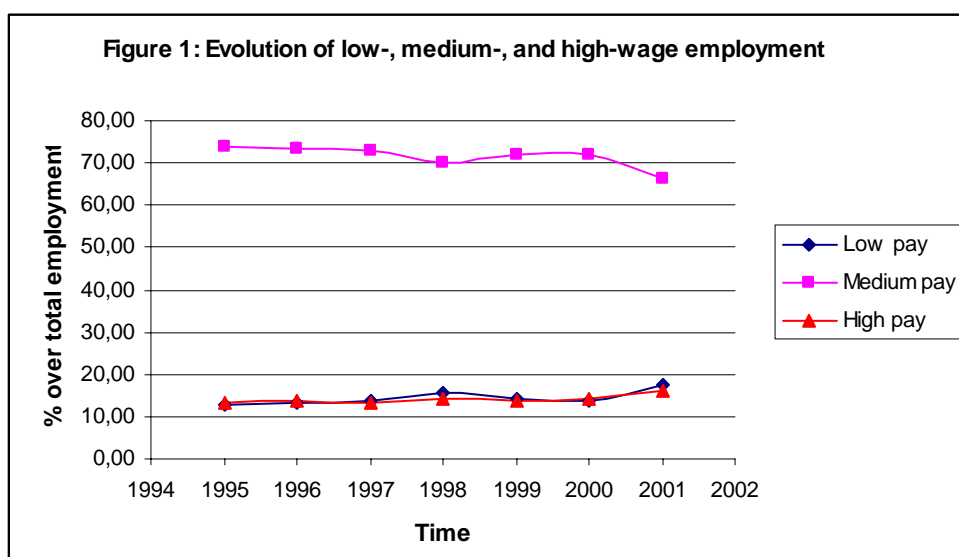
	Exit from labor market (%)	Remaining in low pay (%)	Transiting to higher pay (%)	Remarks	Source
Netherlands	16	43	40	66% median (hourly), 1995-2001	This paper
	28	49	23	66% median, (hourly), Males aged 18-35 only, SEP 1990-2002	Pavlopoulos & Fouarge (2006)
United States	30	41	29	66% median, 1986-1991	Keese <i>et al.</i> , 1998
Denmark	26	6	68	66% median, 1986-1991	Keese <i>et al.</i> , 1998
Germany	41	16	44	66% median, 1986-1991	Keese <i>et al.</i> , 1998
	30	42	29	West only, 66% median, (hourly), Males aged 18-35 only, GSOEP 1990-2003	Pavlopoulos & Fouarge (2006)
Sweden	32	11	58	66% median, 1986-1991	Keese <i>et al.</i> , 1998
UK	13	50	37	bottom quartile, 1991-1994	Gosling <i>et al.</i> (1997)
	15*	66	18	66% median, (hourly), Males aged 18-35 only, BHPS 1990-2003	Pavlopoulos & Fouarge (2006)

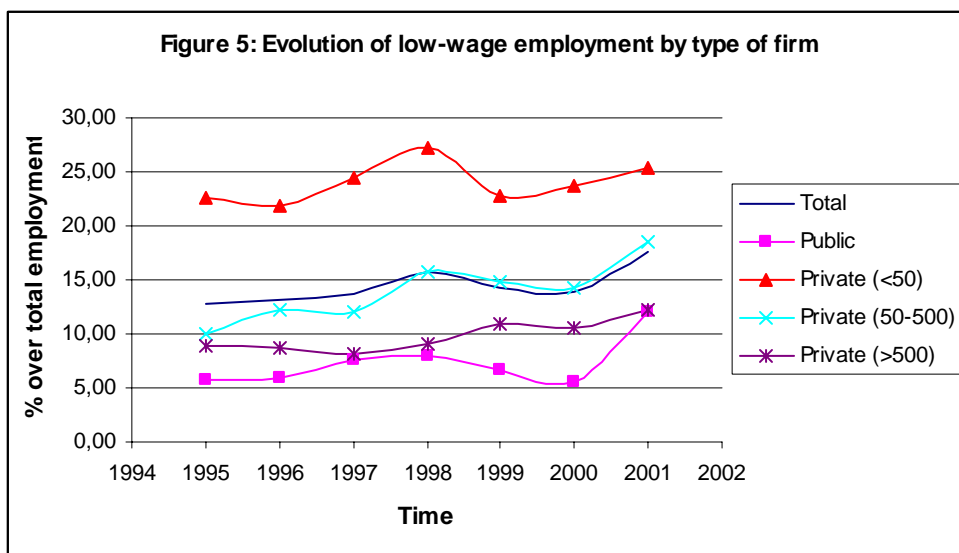
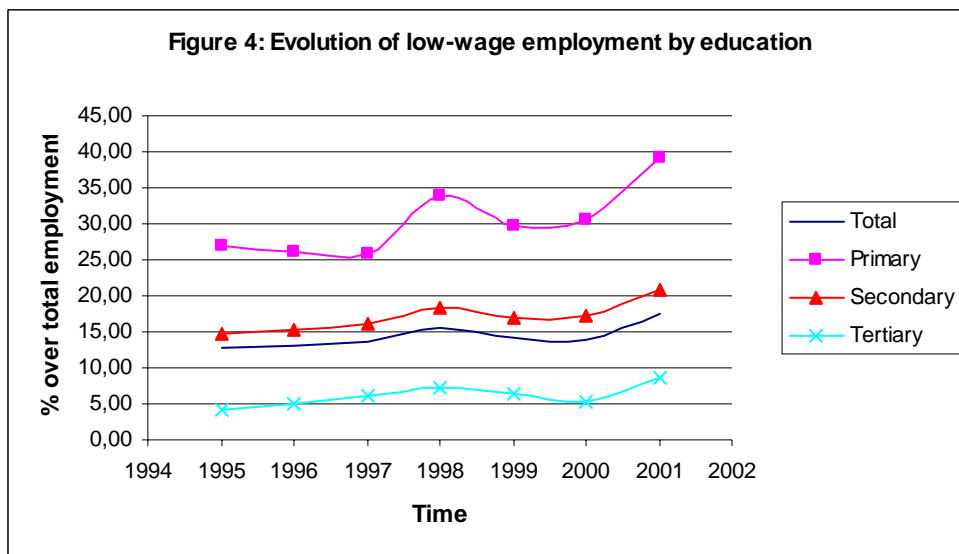
*) including 9% other which includes relatively many transitions to self-employment

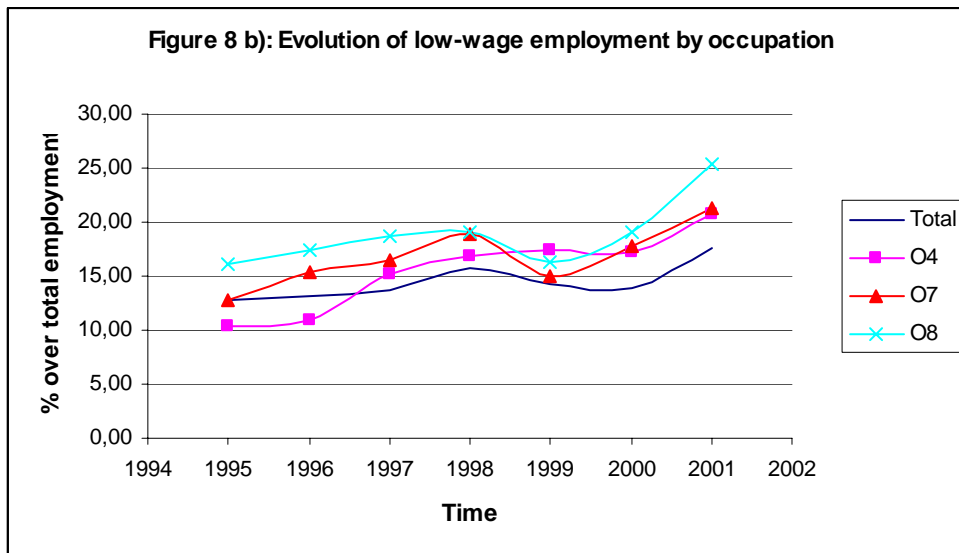
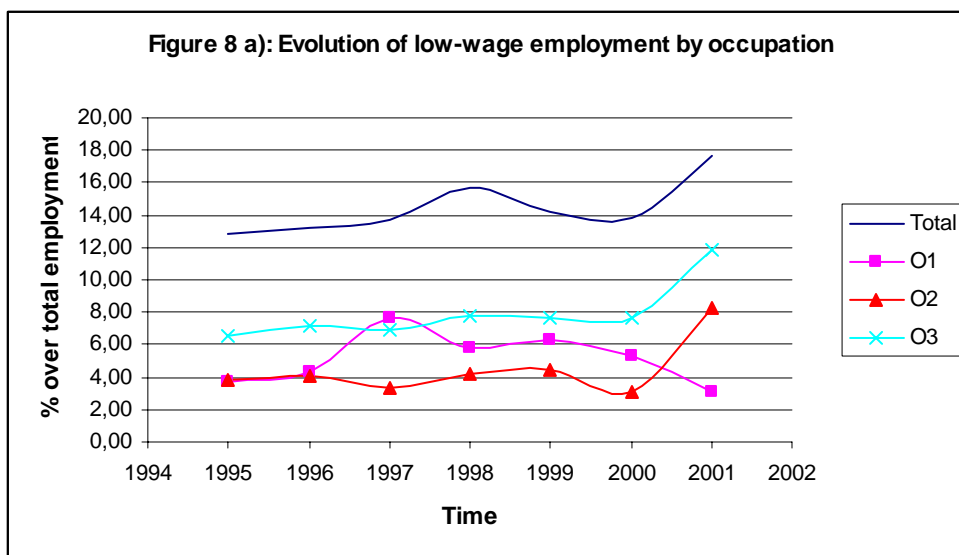
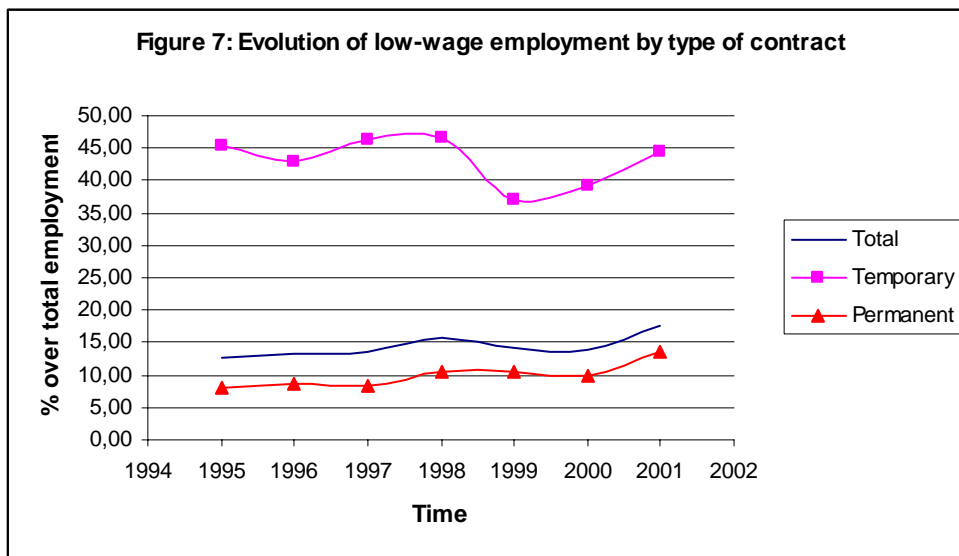
Table 19: Multinomial logit model for the probability of leaving a low pay situation (1995-2001)
Males and Females separately

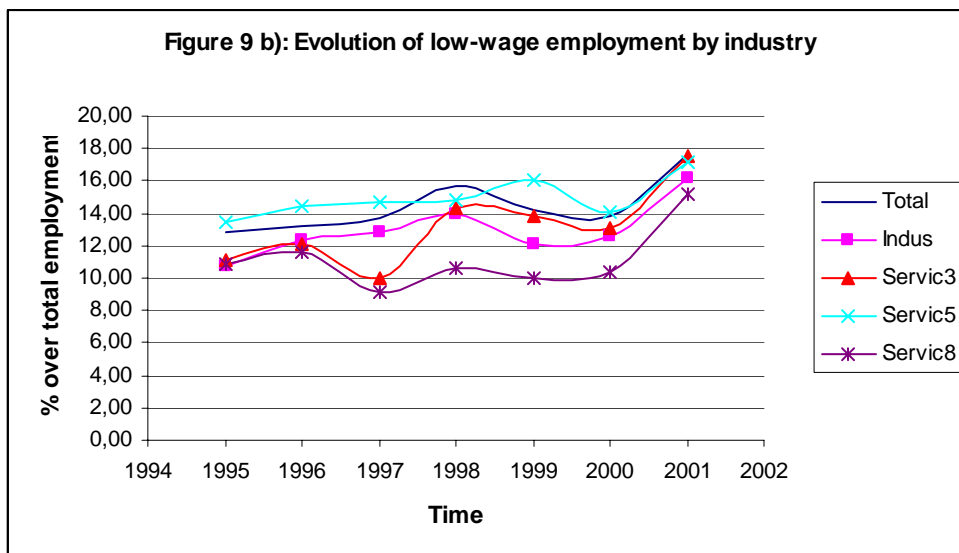
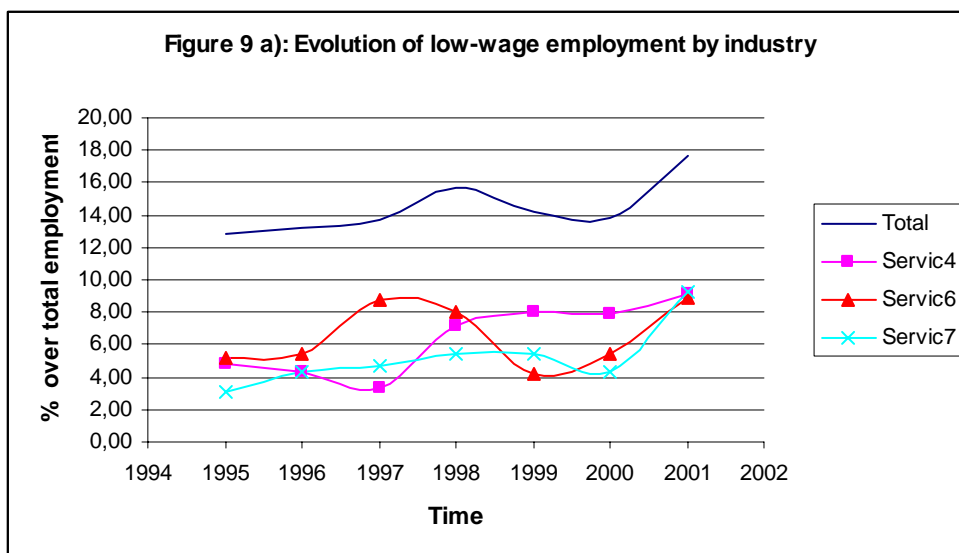
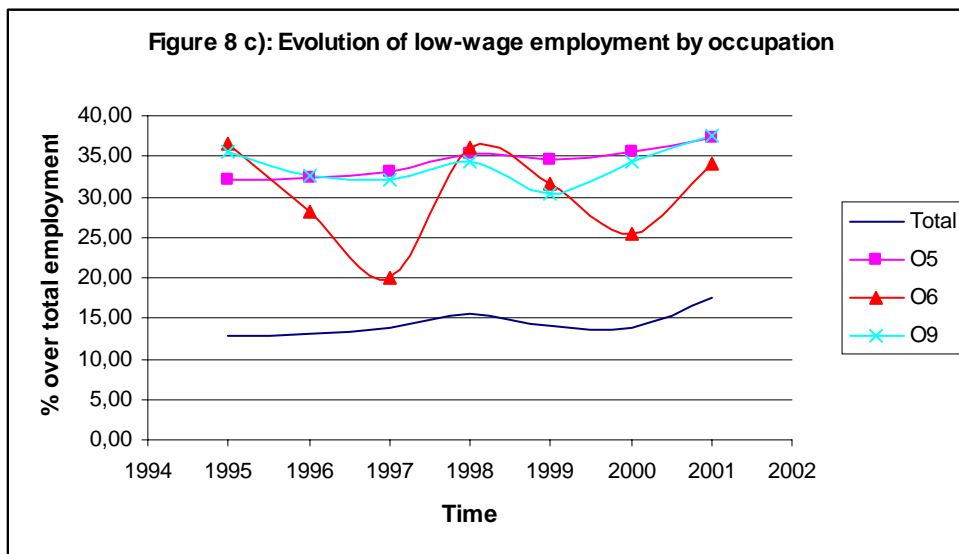
	Males				Females			
	Ln[Pr(z=1)/Pr(z=0)]	Ln[Pr(z=2)/Pr(z=0)]	Ln[Pr(z=1)/Pr(z=0)]	Ln[Pr(z=2)/Pr(z=0)]	Ln[Pr(z=1)/Pr(z=0)]	Ln[Pr(z=2)/Pr(z=0)]	Ln[Pr(z=1)/Pr(z=0)]	Ln[Pr(z=2)/Pr(z=0)]
	RRR	t	RRR	t	RRR	t	RRR	t
Age								
16-24								
25-49	3.969	5.65	1.691	1.49	3.927	6.29	1.453	1.44
50-65	12.059	2.30	47.862	3.36	4.683	3.73	2.673	2.10
Education								
Primary								
Secondary	1.910	1.67	0.532	-1.55	1.080	0.21	0.354	-2.95
Tertiary	4.654	2.91	1.092	0.14	2.179	1.75	0.221	-2.78
Part-time	0.296	-3.55	1.208	0.48	0.782	-1.21	1.843	2.47
On-the-job training	0.816	-0.87	0.408	-2.35	1.075	0.36	0.849	-0.62
Permanent contract	1.778	2.43	0.597	-1.57	1.273	1.19	0.378	-3.90
Job Duration								
< 2 years								
2-5 years	2.619	3.09	0.812	-0.40	2.591	3.65	1.363	0.90
> 5 years	1.313	0.86	0.486	-1.42	1.279	1.02	0.761	-0.89
Occupation								
ocup1	1.305	0.46	2.001	0.83	3.240	1.66	1.877	0.65
ocup2	0.809	-0.37	1.373	0.37	3.108	2.35	2.132	1.30
ocup3	1.126	0.30	1.407	0.52	2.484	3.19	0.815	-0.53
ocup4	0.450	-1.61	0.785	-0.33	1.208	0.76	0.539	-1.92
ocup5								
ocup6	1.691	0.93	1.543	0.54	3.943	1.61	1.959	0.83
ocup7	0.671	-1.09	1.652	0.97	2.074	1.24	0.902	-0.13
ocup8	1.515	1.07	1.313	0.47	.8810	-0.25	0.837	-0.33
ocup9	0.558	-1.37	1.753	1.08	1.029	0.09	0.703	-0.96
Industry								
Agriculture								
Industry	0.787	-0.57	0.652	-0.73	1.463	0.81	0.906	-0.19
Services	0.945	-0.15	0.491	-1.34	1.460	1.10	0.591	-1.47
% Observations	43.58		12.64		39.42		18.81	
N	530				723			
Log-likelihood	-427				-659			

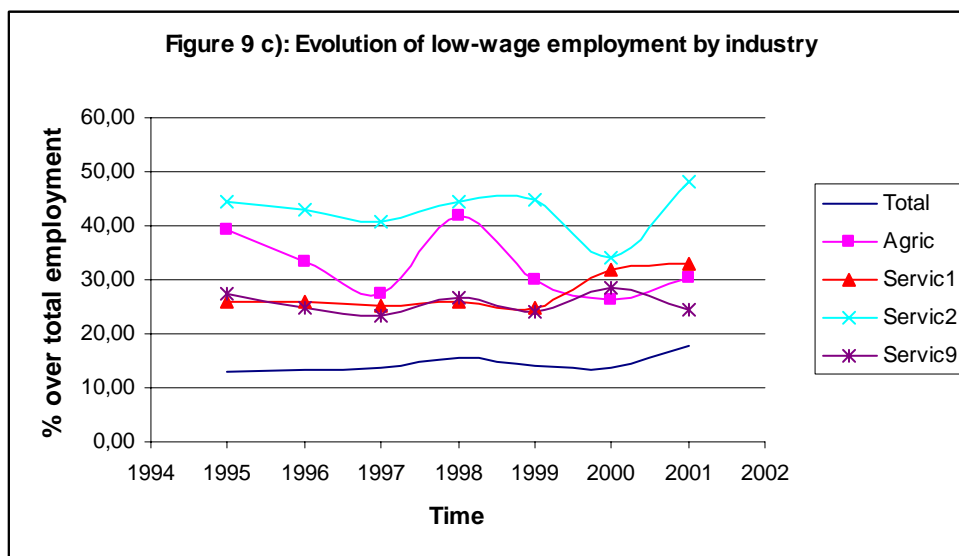
Source: Eurostat, ECHP, authors' calculations











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Juni 2000 Marc van der Meer (ed), Adriaan van Liempt, Kea Tijdens, Martijn van Velzen, Jelle Visser.

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