

# Socio-Economic Differences in the Perceived Quality of High and Low-Paid Jobs in Greece<sup>1</sup>

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## Abstract

Using data from eight waves (1994-2001) of the European Community Household Panel (ECHP), this study examines whether significant differences exist in the perceived quality of high and low-paid jobs in Greece. After correcting for the potential selectivity problem that is prevalent in the study of low pay status on job satisfaction, evidence is presented that low wage workers are significantly less satisfied with their jobs compared to their higher-paid counterparts. Further analysis of the specific facets of jobs reveals that the lower average satisfaction of low-paid employees in Greece arises not only due to their lesser pay, but mainly because of the inferior type of work that they perform, undesirable working hours and poor working conditions. Low-paid workers in Greece therefore seem to suffer from a double penalty, as their jobs are also of bad quality. In view of this segmentation, combined with the fact that Greece remains a low wage economy, it becomes evident that policies that centre on the quality of jobs are of equal importance to those that focus on the level of pay that they provide.

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# 1. Introduction

## 1.1 *'Atypical employment' and the 'two-tier' labour market*

Following the substantial process of structural change and reform that European labour markets underwent since the late 1970s, during which the distribution of earnings has been widely regarded as having become more unequal, concerns were raised over the growing proportion of workers falling into the category of the 'working poor'. Specifically, given the increased globalisation of economic activity, the acceleration of technological innovation and the emergence of the knowledge society, as well as the growing importance of the services sector, new employment practices were deployed that aimed to provide employers with adequate flexibility to respond to ever-changing circumstances. These involved the widespread use of 'atypical' forms of employment, such as part-time work, contracts of temporary duration (fixed-term/agency work), and very low-paid jobs on non-standard working hours. Sabethai (2000), for example, documents the extensive use of such flexible forms of work in Greece in the late 1990s, as well as numerous legislative measures concerning the utilisation of labour, that sought to adapt employment and production needs of Greek enterprises to changes in demand. While some considered such relative changes as the ineluctable response of competitive markets to the diminishing demand for the services of low-skilled workers, others were apprehensive of the ability of low-paid individuals to maintain decent living standards, especially in the face of the deregulation of the institutional framework that traditionally supported their wages.

More recently, the European Union (EU) has expressed concerns regarding the potential downsides of such non-standard forms of employment not only on the level of pay but also on the *quality* of jobs, such as the impact on job security, work-life

balance, access to training and lifelong learning, health and safety at the workplace *inter alia*. In other words, it has been argued by the EU that along with the declining relative (and for some countries real) position in the earnings distribution, low-paid workers have suffered from a double penalty as their jobs are also of inherently bad quality. This is believed to be the outcome of market and institutional failures, or of a belief by employers that quality improvements can impair their capacity for flexibility, both of which have allegedly fostered the development of a two-tier labour market in Europe. In this segmented market “the first tier is made up of jobs subject to decent pay, relative job security and career prospects, involving generally good working conditions. The second tier comprises not only the unemployed and discouraged workers, but also those employed in jobs of low quality which have low pay, precarious employment relationships or lack of further education and career development prospects” (European Commission, 2001a, p. 79).

### *1.2 Focusing on the quality of employment*

The need for policy-makers to focus on this latter ‘lower end’ of the labour market was underlined by the *Employment in Europe 2001* survey, which was the first to document the strong link between jobs of relatively poor quality and social exclusion. Specifically, it was shown that those employed in jobs of low quality are at much greater risk of becoming unemployed or dropping out of the labour force. Moreover, “previous experience of unemployment and labour market exclusion, in turn, lowers the probability of returning to employment in general and into high quality employment in particular, thus leading to substantial risk of vicious circles of low quality – low productivity employment, and unemployment, inactivity and social exclusion” (European Commission, 2002, p. 81). So the problem with casual or low-

paid labour is not, to paraphrase Hicks (1963, p. 82), that ‘it is worth so appallingly little’, but that it is condemned to ‘act as the main conduit for repeat unemployment’ (Stewart, 2002, p. 19), and, thus, to suffer from few opportunities to move up the job ladder. Indeed, *Employment in Europe 2003* (p. 138) reports that between 1995 and 2000 Greeks in low-quality employment experienced the least favourable career opportunities amongst the EU countries, with above EU-average transition rates into unemployment, and below EU-average transition into high quality employment. Also striking is the persistence of the no job/low quality trap in Greece, with almost 30 percent of unemployed Greeks in 1999 moving into low-quality employment in 2000, and almost 20 percent in inactivity. Little above 5 percent moved into high-quality jobs.

The fear of a vicious cycle between low-quality jobs and non-employment was further exacerbated by the possibility that the trend of increasing employment in the services sector would lead to a proliferation of dead-end jobs of bad quality. For Greece, in particular, which has experienced rapid growth of the services sector over the past twenty years, it has been argued that the demand for high profitability by Greek firms, in the face of slow growth of productivity and high unemployment, has facilitated the propagation of low-wage/bad jobs in the Greek economy (Ioakimoglou and Soumeli, 2002).

The attention that the EU has paid to job quality was also stirred by the acknowledgement that the full potential of job creation cannot be achieved if the jobs on offer are unattractive in terms of the quality of work, consequently proving difficult to fill (Eurofound, 2001, p. 4). This problem has recently become starker in European labour markets, following the marked improvements in the quality of the European labour supply (European Commission, 2001b, p. 9).

Finally, placing greater emphasis on the quality of employment was also dictated by the evidence that better quality in work results in faster employment growth and higher productivity (European Commission, 2003a, p. 6-8). Specifically, better jobs are expected to be more attractive to non-participants or those at the margins of the labour force, especially women. Safer jobs that offer access to training are also more likely to result in productivity gains, by reducing turnover and absenteeism and by leading to the production of better goods and services, respectively. At the same time employees are likely to reciprocate to their employer's gift-exchange offer of better working conditions by exerting greater effort (much in the spirit of the 'reciprocity' arguments put forward by Fehr and Falk, 2002). High-quality employment is also believed to contribute to the positive mental and psychical well-being of employees, thus serving as a precondition for a rich, satisfying, and productive life (Eurofound, 2001, p. 7).

It is not least for these reasons that European Member States in the Lisbon Summit of 2000 considered the goal of improving quality in work as a complementary and mutually supportive objective to those of full employment and social cohesion. Quality promotion has hence been acknowledged as a cornerstone for modernising Europe's social model, as a means of ensuring the dynamic positive complementarity between flexible and competitive economic policies, on the one hand, and social cohesion, achieved through strong and supportive social systems, on the other.

### *1.3 Theoretical framework and defining quality in work*

Of course, the theoretical framework underlying the EU's rationale of low wage jobs also being of low quality is the *dual labour market hypothesis*. According to this theory, the lack of perfect mobility, and subsequent lack of competition, between

distinct labour markets fosters the development of ‘good’ and ‘bad’ jobs, whereby the former enjoy not only better working conditions than the latter, but also higher pay. In this case significant differences in the utility derived from work among otherwise identical individuals arise, with those in superior jobs enjoying greater job satisfaction. Such differences cannot be sustained, however, in markets that are characterised by a perfect flow of information and lack of barriers to mobility. For in that case Adam Smith’s (1776) paradigm of *compensating wage differentials* would prevail. According to Smith, employers of jobs with many disamenities would be expected in the long run to compensate for these with higher pay, all other things equal, in order to recruit and retain their workers. Thus, according to the theory of compensating (or equalizing) differences, in perfectly competitive labour markets one expects to observe low-paid jobs with relatively good working conditions, and jobs with bad working conditions paying high wages. Two otherwise similar individuals, who have the same demographic, human capital, and job characteristics, but who work in different tiers of the job market (i.e. one as low-paid and the other as high-paid), should therefore enjoy similar utility from their occupations.

This study therefore attempts to, firstly, detect whether or not significant differences in perceived job quality exist among high and low-paid workers in Greece, and, secondly, to uncover the differential effect that certain socio-economic variables exert on the utility from high or low-paid work, respectively. By understanding if (and how) the determinants of job satisfaction between these two types of workers differ, appropriate policy responses could then be developed to address the discrepancy in quality between good and bad jobs.

However, since ‘quality of work’ is a multifaceted concept any attempt to quantify the term is highly contentious. It is for this reason that the Commission (2001b, p. 7)

has suggested that there can be no one single measure or index of employment quality, which is why it has identified 10 ‘dimensions’ of job quality instead.<sup>1</sup> In contrast, this paper follows the practice of an ever-increasing number of economists who use self-reported job satisfaction data as a surrogate for the overall quality of work. Specifically, many have argued that since overall subjective job satisfaction is the reflection of the worker’s weighting in his/her mind of all the job’s aspects (such as pay, job security, the type of work, hours and times of work, working conditions, commuting etc.), “then the former should serve as a reasonable proxy for the overall quality of work as perceived by the individual worker” (Hamermesh, 2001; Leontaridi et al., 2004, p. 2).<sup>2</sup> This is also the method adopted by Leontaridi and Sloane (2001), who showed with British data that low-paid workers in the UK enjoy greater job satisfaction than their higher paid counterparts. Jones and Sloane (2004) have also recently illustrated that job satisfaction in the low-wage economy of Wales is not lower than in the rest of the UK. These findings led to the conclusion that there is “no justification for the European Commission’s assertion that low paid jobs are inherently jobs of low quality, at least as far as the British evidence is concerned” (op cit., 2004).

This study casts doubt on the generality of this proposition to other European labour markets by showing that low-paid workers in Greece are markedly more dissatisfied with their jobs than their higher-paid counterparts. This is based on data from eight waves (1994-2001) of the European Community Household Panel (ECHP), and arises after taking into account the potential selectivity problem that is prevalent in the study of low pay status on job satisfaction. Further analysis of the specific facets of jobs reveals that the greater displeasure of low wage workers in Greece reflects not only their lower satisfaction with their pay, but, mainly, the inferior type of work that they perform, their undesirable working hours and the poor environment of their

workplace. In the face of this evidence, combined with the fact that Greece remains a low wage economy, it becomes evident that policies that centre on the quality of jobs are of equal importance to those that focus on the level of pay that they provide.

The structure of the paper is organized as follows. Section 2 offers a brief literature review of the growing research that has taken place using subjective well-being data, including any results that have been reported for Greece. In section 3 the data used in this study and summary statistics are presented. Section 4 outlines the econometric methodology, while section 5 describes the empirical estimates of the relationship between low pay status and job satisfaction in Greece. Section 6 concludes the discussion.

## **2. Subjective Job Satisfaction**

### *2.1 Subjective Well-Being and Job Satisfaction*

There has been a surge of interest among economists in recent years regarding the use of subjective survey questions on individual well-being and its domains, such as job satisfaction or health satisfaction. As mentioned above, much research has now started with the premise that *subjective well-being* (SWB) can serve as an empirical proxy for the theoretical concept of utility, thus overcoming the traditional economic practice of evaluating individual preferences by means of *revealed* behaviour in market situations. This initiative has followed the lead of many years of psychological research, which has illustrated that comparisons of different measures of SWB are often mutually consistent. For example, self-reported SWB has been found to be correlated with physiological measures such as the amount of smiling or frowning, changes in facial muscles (see Kahneman et al., 1999) or the evaluation of the individual's experience by a third party observer (Kahneman et al., 1997). Van Praag

(1991) has also shown that individuals belonging to the same language community have a very similar understanding of concepts such as welfare, well-being and happiness. In addition, the use of subjective well-being data was encouraged by the robust econometric findings that were spurred by Freeman's (1978) pioneering work on the inverse relationship between job satisfaction and quit behaviour.

Of course, it has been acknowledged that survey questions about satisfaction suffer from a number of weaknesses, such as the discrepancy between *remembered utility* and *experienced utility*. For example, it has been argued by Kahneman that when evaluating retrospectively the utility of an event (remembered utility), individuals give a relatively higher weight to events with a high intensity (Peak Effect) and those that have occurred last (End Effect) (hence the term *Peak-End evaluation rule*). Another problem arises due to the presence of the *adaptation phenomenon* (Easterlin, 2001). Specifically, the evidence that wealthier individuals and economies are happier at a given point in time, but not over time, has led to the assertion that individuals adapt to new situations, such as an income increase or becoming handicapped, by changing their expectations. Both of these issues therefore arouse suspicion about the use of time-series data on subjective happiness.

In spite of these problems, economists have reported a number of interesting and robust results regarding the effect of individual socio-economic characteristics on SWB and its domains. Concentrating specifically on the domain of job satisfaction, which is considered to be a proxy for an individual's utility from work ( $U$ ), most of the empirical literature now follows the theoretical exposition of Clark and Oswald (1996). According to these authors, job satisfaction depends not only on absolute income ( $y$ ) and working hours ( $h$ ), as in standard indifference curve microeconomics, but also on a set of individual ( $i$ ) and job-specific ( $j$ ) features:

$$U = u(y, h, i, j) \quad u'_y > 0, u'_h < 0 \quad (1)$$

Based on this model, the estimating equations usually regress the indices of job satisfaction on a set of demographic (age, gender, marital status, number of children etc.), human capital (education, training), economic (wages and salaries, other income), work-related (firm size, hours of work, contractual arrangement) and social (unionization, institutions) determinants.

In this manner the literature has found that unemployed individuals report substantially lower levels of well-being than the employed and are permanently ‘scarred’ as a result of their jobless experience (Clark and Oswald, 1994; Theodossiou, 1998). It has also been argued that much of the wage effect on job satisfaction operates through relative wages<sup>3</sup> (Clark and Oswald, 1996; Clark, 1999; Grund and Sliwka, 2003), or through the individual’s own judgement about his past and future financial situation (Easterlin, 2001; Lydon and Chevalier, 2002).<sup>4</sup> Interesting demographic differences have emerged in that women consistently declare higher job satisfaction scores than men (Clark, 1997) and the age effect has been reported as being U-shaped (Blanchflower and Oswald, 1999). Finally, satisfaction levels have been found to be negatively correlated with both education (Clark and Oswald, 1996; Sloane and Williams, 1996) and union status (Blanchflower and Oswald, 1999; Drakopoulos and Theodossiou, 1997).<sup>5</sup>

## 2.2 *Greek Specific Research on Job Satisfaction*<sup>6</sup>

In Greece the empirical research on job satisfaction is limited, with most of the relevant studies originating in the health sciences. Recent papers that have focused on the job satisfaction of Greek teachers include those of Koustelios (2001) and Stamouli

and Ipfling (2003). Koustelios's (2001) sample of 345 teachers from 40 public schools in Thessaloniki showed that they are satisfied with the job itself and supervision, while they are dissatisfied with their pay. Holding a supervisory post or having promotion prospects also appears to have a positive effect on job satisfaction. Stamouli and Ipfling's (2003) cross-national research of four countries (Greece, Germany, Austria, Switzerland) also revealed that teachers with greater work autonomy, and those with good working conditions (such as administrative support, school environment, student acknowledgement), are more satisfied in all countries. A notable difference is that for Greek teachers the vacation period seems to be more relevant for their job satisfaction compared to their Central European counterparts.

Two more studies worth mentioning include those of Blanchflower and Oswald (1999) and Kaiser (2002), both of which examine job satisfaction in the whole of Europe including Greece. Blanchflower and Oswald (1999), using information from two waves (1995 and 1996) of the Eurobarometer survey, show that job satisfaction levels in Greece are the lowest in the EU, and Greece appears to be one of the most stressed countries in Europe. Kaiser (2002) confirms these results using data from the European Community Household Panel (ECHP) for the period 1994-1997. According to Kaiser, Greeks have the lowest average satisfaction in the EU with respect to their jobs in general, as well as with two specific aspects of their jobs, notably the number of working hours and job security. Such a bleak picture also emerges from the empirical analysis of this paper, to which we now turn.

### **3. Statistical Data and Descriptives**

#### *3.1 Data and Incidence of Low-Paid Employment*

The empirical analysis uses statistical data for Greece drawn from the eight waves of the European Community Household Panel (ECHP), covering the period 1994-2001. Designed centrally at Eurostat, but in close coordination with the Member States, the ECHP is a questionnaire database that contains information on more than 60,000 nationally representative households and 120,000 observations per year for all (pre-accession) EU countries.<sup>7</sup> In constructing the ECHP emphasis was placed on developing comparable longitudinal social statistics across Member States on income, labour, poverty and social exclusion, housing, health, as well as other social indicators concerning living conditions of private households and persons. More important for our purposes, it contains a considerable amount of information on the personal, human capital and employment characteristics of workers, as well as their stated satisfaction with their jobs. In particular, in the ECHP respondents are asked to rate their satisfaction levels with their main activity status (whether it is employment, unemployment, or inactivity). The employed are also asked to state their preference with respect to specific components of their jobs, such as earnings, job security, type of work, working hours, working times, working conditions/environment and distance to job/commuting. Each of these are given a number from one to six, where a value of one corresponds to ‘not satisfied at all’, six reflects ‘full satisfaction’, and the integers from two to five represent intermediate levels of utility. It is these self-reported responses that constitute the dependent variables in the econometric analysis that follows below.

Using the available ECHP data on Greece, the total number of interviewees for each of the eight years of the survey was approximately 11,000, resulting in a total of 85,748 observations on 15,374 individuals for the pooled sample.<sup>8</sup> Keeping only those in paid employment, who are between 16 and 65 years of age, and excluding the self-

employed and those in unpaid work in family enterprises for the purpose of retaining homogeneity in the sample, resulted in a pooled sample of 20,785 observations on 5,314 individuals, of which 3,162 are males and 2,152 are females. Although our sample excludes full-time students, those working in paid apprenticeship or those receiving job-related training were included, given that training possibilities constitute a key component of the quality of jobs.

Based on this sample, Table 1 identifies the fraction of employees who were low-paid in Greece per year. These figures were computed by, firstly, deriving gross hourly earnings for each individual, using the available information on current gross monthly earnings and the number of weekly hours of work in the main job.<sup>9</sup> A conventional definition that classifies as low-paid those individuals whose earnings are less than two-thirds of the median gross hourly wage was then adopted.<sup>10</sup> Using this definition, Table 1 illustrates that the overall incidence of low-paid employment in Greece, based on ECHP data for the period 1994-2001, is 17.24 percent.<sup>11</sup> This figure closely mirrors the results of both Ioakimoglou and Soumeli (2002) and Marlier and Ponthieux (2000), who have shown, using slightly different definitions and data, that low wage workers in Greece amount to 16-17 percent of the total population.

### 3.2 *Descriptive Statistics*

Having identified the overall incidence of low pay in Greece, Table 2 depicts the composition of low wage employment in relation to categories of jobs and individuals. Specifically, Table 2 shows the percentage of workers in each category who are low-paid (*incidence*), the *distribution* of low wage employment among the particular categories, and the *concentration indicator*, a measure of the prevalence of low-paid employment in each group relative to the overall incidence in the population. This

indicator is useful for conducting cross-national comparisons, as a value greater than one suggests a higher than average risk of being low-paid in any country. Taking the category of ‘sector’ as an example, Table 2 illustrates that being employed in the private sector is associated with a higher than average probability of being low-paid, since the concentration value is 1.48. This is in stark contrast to public sector workers, whose concentration value is 0.21, thus implying that the public sector in Greece acts a safeguard against low wage employment. These figures are a reflection of the fact that, as shown in column 1, almost 26 percent of private sector employees are low-paid, compared to only 4 percent in the public sector. Moreover, from column 2 one can see that among the 17 percent of workers who are classified as low-paid in our sample, 92 percent work in private sector jobs, compared to only 8 percent who are employed in the public sector.

From the remaining rows in Table 2 it is clear that the likelihood of low-paid employment in Greece is higher for women and younger workers, as well as for those with lower educational qualifications and absence of training opportunities in their jobs. This is not surprising, given that wages tend to increase with working experience, training, and the level of educational attainment, as has been noted long time ago by Becker (1964) and Mincer (1974), the two pioneers of human capital theory. In fact, our sample confirms that low-paid workers have fewer years of general experience and job tenure (11 and 3.5, respectively), compared to their higher-paid counterparts (17 and 9 years). Single workers, and to a lesser extent those who work in part-time jobs, are also at higher than average risk of being in the low pay category. In addition, low wages are relatively less common in fairly ‘stable’ jobs, such as jobs with contracts of indefinite duration. The persistence of the no pay/low pay cycle that was mentioned above is also evident, since those who (re-) enter employment after

being unemployed or inactive a year earlier are much more likely to be in low wage jobs, compared to those who were employed. From Table 2 it is also apparent that fears of high-paid jobs in the shrinking manufacturing sector being increasingly replaced by low-paid jobs in the growing services sector have not yet materialized in Greece, as the possibility of low pay seems to be greater in the non-services sectors. Lastly, the occupational breakdown suggests that while being in a non-manual occupation (such as sales) is not a guarantee of being in a relatively high-paid job, very few managerial, technical and professional workers receive low wages. All of these correlations are in close agreement with the results that other authors have reported for many other countries, thus indicating that the risk of low wage employment in Greece tends to be concentrated among the same types of workers and employment categories as elsewhere (OECD, 1996, p. 70; Marlier and Ponthieux, 2000, p. 4; and articles in the volume of Asplund, Sloane and Theodossiou, 1998).

Moving on to an analysis of the raw job satisfaction data, Figure 1 demonstrates that in 2001 Greece had the lowest average job satisfaction among the EU countries for which such data was available, thus confirming the findings of Blanchflower and Oswald (1999) and Kaiser (2002) for earlier years. From Figure 2, which illustrates the distribution of job satisfaction responses in Greece in 2001, it can be seen that 11 percent of Greeks ranked themselves at the bottom of the job satisfaction ladder (i.e. gave a score of 1 or 2), while 59 percent were in the middle rungs (scores 3 and 4). The remaining 30 percent of Greek employees reported a satisfaction value of 5 or 6, which constitutes one of the smallest fractions in the EU. More relevant for this study, however, is the pattern that is displayed in Figure 3, which compares the average job satisfaction of high and low-paid workers over time in Greece with that of five other

EU countries. From this figure it is clear that Greece stands out in terms of the pronounced and constant divergence in satisfaction between the two types of workers.

Table 3 now depicts the means of overall job satisfaction and satisfaction with specific facets of jobs, broken down by various categories of interest. As an example, one can see from column 1 of this table that the average job satisfaction score of high-paid workers in Greece in the years 1994-2001 was 4.02, which is larger than the average satisfaction value of 3.17 that low-paid workers reported. Accordingly, it is evident that men in Greece are more satisfied with their pay and security, compared to women, in line with Papapetrou's (2004) finding that average wages of Greek women are 25 percent less than those of men. Nevertheless, women express greater satisfaction with their working hours, times, conditions, and type of work. Moreover, full-time workers report greater satisfaction with respect to their pay, security, and type of work, while part-time employees in Greece receive greater satisfaction from their working hours and conditions. Overall full-time workers seem to be happier than those who work part-time, which probably reflects the fact that part-time work in Greece is still limited and to a large extent involuntary.<sup>12</sup> Public sector workers in Greece are more satisfied with their jobs in general, and with all of the facets in particular, compared to private sector employees.<sup>13</sup> Workers on permanent contracts receive greater utility from their jobs, especially with regards to the security of their employment, while those on casual work suffer the most. Moreover, married individuals, those in possession of more human capital, those who are employed in supervisory positions, and those working in the services sector are more satisfied with all of the components of their jobs. Finally, and more important for the purposes of this study, *low-paid workers in Greece are less satisfied with all aspects of their work compared to their high-paid counterparts.*

## 4. Econometric Methodology

The correlations that are outlined above may, of course, be spurious, as the influence of other factors that may obscure the relationship between an individual's low pay status and his/her job satisfaction has not yet been controlled for. As shown in section 3, we cannot be certain on the basis of the raw data only that low-paid workers in Greece are undeniably less satisfied than their higher-paid counterparts. Since a large proportion of low-paid workers possess other characteristics that might have an effect on job satisfaction (e.g. they are more likely to be single, low-skilled, on non-permanent contracts, etc.), it might be these features that cause low-paid workers to appear as more or less satisfied, rather than the fact of being low-paid itself. Therefore, in order to uncover the true *ceteris paribus* effect of low pay on job satisfaction, a multivariate regression methodology is required to net out the effects of other variables that are simultaneously correlated with both low pay status and self-reported job satisfaction.

However, even after controlling for these factors simple OLS or ordered categorical estimates of the effect of low pay are likely to be biased. The reason is that in the non-experimental sample that this study utilizes it is unlikely that individuals have been randomly allocated into either the low pay or the high pay sector. In reality, the observed distribution of high and low wage workers is likely to reflect the outcome of a matching process, with individuals of an intrinsic disposition (i.e. those who value non-pecuniary aspects of life) ending up on the lower rungs of the wage ladder and those who are extrinsically motivated selecting high-paying jobs. If intrinsically motivated individuals are concurrently more likely to report higher levels of job satisfaction, the least squares coefficient of a low pay variable will overestimate its true average effect. Similarly, if having low expectations from life is positively

correlated with a person's chances of being low-paid, and low expectations breed a high level of satisfaction with one's current state of affairs (due to the *adaptation* phenomenon), then the OLS estimate will again suffer from upward bias. In other words, the well-known problem of sample selection bias is likely to feature prominently in the analysis of the effect of low pay on job satisfaction.

It is for this reason that a “treatment effects” (or “endogenous dummy variable”) model has been employed (Barnow et al., 1981; Maddala, 1983), which considers the effect of an endogenously chosen binary treatment on another endogenous continuous variable, conditional on two sets of independent variables. Such techniques use either Heckman's two-step consistent estimator or full maximum-likelihood, and estimate all of the parameters in the model:

$$JS_{it} = \sum_{j=1}^h X_{ij} \beta_{1j} + L_{it} \beta_2 + u_{it}, \quad i = 1, \dots, n; \quad (2)$$

$$t = 1, \dots, 6$$

where  $JS_{it}$ , job satisfaction of individual  $i$  at time period  $t$ , is the dependent variable,  $\mathbf{X}$  is a vector of  $h$  personal and labour market characteristics that affect job satisfaction, and  $\mathbf{L}$  is the endogenous dummy variable of interest that distinguishes between high and low-paid employees by taking the value 1 if low-paid and 0 otherwise. The stochastic process which determines the propensity of an individual belonging in either the high or the low pay tier of the labour market is modelled as the outcome of an unobserved latent variable,  $\mathbf{L}^*$ , which is determined by the following equation:

$$L_{it}^* = \sum_{l=1}^q Z_{itl} \gamma_l + \varepsilon_{it} \quad (3)$$

where  $\mathbf{Z}$  is a matrix of  $q$  identifying factors ( $q \geq h$ ) believed to determine whether assigned treatment in the low wage sector occurs or not, and  $u$  and  $\varepsilon$  are assumed to be bivariate normal random disturbance terms that are distributed as follows:

$$\begin{Bmatrix} u \\ \varepsilon \end{Bmatrix} \sim N \left\{ \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \sigma & \rho \\ \rho & 1 \end{pmatrix} \right\} \quad (4)$$

Of course,  $\mathbf{L}^*$  is unobserved, but it is known that the allocation of individuals into either wage sector is made according to the rule:

$$L_{it} = \begin{cases} 1, & \text{if } L_{it}^* > 0 \\ 0, & \text{otherwise} \end{cases} \quad (5)$$

From this it becomes evident that any estimation of the average difference in job satisfaction between high and low-paid workers that does not take the associated problem of incidental truncation into account will be biased ( $E(u_{it} / L_{it}^* > 0) \neq 0$ ).

Implementation of the “treatment effects” model, however, should lead to a consistent estimate of the coefficient of the low pay variable,  $\beta_2$ , as it accounts for the selectivity issue that arises. Maddala (1983, p. 122; also see Stata manual, 2003, p. 282) derives the likelihood function for this model, the maximisation of which yields consistent and asymptotically efficient estimates of the coefficients  $(\boldsymbol{\beta}, \boldsymbol{\gamma})$  and variance-covariance matrix  $(\boldsymbol{\sigma}, \boldsymbol{\rho})$ :

$$l_i = \begin{cases} \ln \Phi \left\{ \frac{Z_{it}\gamma + (JS_{it} - X_{it}\beta_1 - \beta_2)\rho/\sigma}{\sqrt{1-\rho^2}} \right\} - \frac{1}{2} \left( \frac{JS_{it} - X_{it}\beta_1 - \beta_2}{\sigma} \right)^2 - \ln(\sqrt{2\pi}\sigma), & L_i = 1 \\ \ln \Phi \left\{ \frac{Z_{it}\gamma + (JS_{it} - X_{it}\beta_1)\rho/\sigma}{\sqrt{1-\rho^2}} \right\} - \frac{1}{2} \left( \frac{JS_{it} - X_{it}\beta_1}{\sigma} \right)^2 - \ln(\sqrt{2\pi}\sigma), & L_i = 0 \end{cases}$$

where  $\Phi(\cdot)$  is the cumulative distribution function of the standard normal distribution.

Identification of the model is achieved provided that at least one non-overlapping variable in  $\mathbf{Z}$ , compared to  $\mathbf{X}$ , is present. For this purpose two identifying restrictions have been used in the selection equation, but not in the main job satisfaction equation. These consist of, firstly, dummy variables capturing the number of rooms in the household per person, ranging from 1 to more than 3 rooms. Secondly, dummies of an index summarizing the presence of good features in the household have also been included. The good features consist of whether or not the dwelling possesses a separate kitchen, bath or shower, indoor flushing toilet, hot running water, heating and a place to sit outside. For both of these identifiers it is postulated that while their existence is correlated with the probability of an individual belonging in the low-paid group, it is uncorrelated with the utility that he/she receives from his work. Additional statistical tests, which are discussed in more detail below, also indicate that the restrictions for identifying the endogeneity effects are adequate.

Before describing the empirical results of the model, two final clarifications need to be made with respect to the nature of the dependent variable and of the standard errors.<sup>14</sup> Firstly, given that subjective well-being answers are categorical variables i.e. ordered discrete variables, researchers conventionally apply ordered probit (OP) or logit (OL) techniques with the aim of identifying the probability that a self-reported

satisfaction level,  $i$ , falls within one of the intervals (or ‘ancillary’ cut points)  $(k_{i-1}, k_i]$ , as a function of appropriate individual and labour market characteristics:

$$\begin{aligned} \Pr(i) = \Pr(k_{i-1} < X_{it}\beta_1 + L_{it}\beta_2 + u_{it} \leq k_i) = & \quad (6) \\ \Phi(k_i - X_{it}\beta_1 - L_{it}\beta_2) - \Phi(k_{i-1} - X_{it}\beta_1 - L_{it}\beta_2) & \end{aligned}$$

This practice reflects the fact that one does not know the respondents’ *exact* feelings about their jobs, only the *interval* in which they belong. However, it has been (increasingly) suggested that via an appropriate utility transformation, researchers may be able to approximate the true evaluations of the respondents by means of a cardinal scale. For example, in one of the seminal articles in this field Freeman (1978) recommended that one could convert the ordinal job satisfaction variable by applying a standardized z-score transformation. He argued that this practice would not distort the regression output compared to techniques that assume interpersonal ordinal comparability. Recently, other options have been explored, most notably the ‘conditional mean’ transform. According to this method, the researcher may approximate the unknown ‘true’ value of job satisfaction,  $J\tilde{S}$ , by its conditional mean,  $J\bar{S}$ , as follows:

$$J\bar{S} = E(J\tilde{S} \leq k_{i-1}) = \frac{-\phi(k_{i-1})}{\Phi(k_{i-1})} \quad \text{if } JS = 1$$

$$J\bar{S} = E(k_{i-1} < J\tilde{S} < k_i) = \frac{\phi(k_{i-1}) - \phi(k_i)}{\Phi(k_i) - \Phi(k_{i-1})} \quad \text{if } 1 < JS < 6$$

$$J\bar{S} = E(J\tilde{S} \geq k_i) = \frac{\phi(k_i)}{1 - \Phi(k_i)} \quad \text{if } JS = 6$$

In other words, this method assumes that for those individuals whose ‘actual’ responses to the ECHP questionnaire took the value ‘1’, the distribution of their ‘true’ satisfaction was truncated from above, while for those who replied with a ‘6’ it was truncated from below. For the intermediate satisfaction categories, 1...6, it is assumed that the respondents’ true evaluations were truncated both from above and below, and, thus, these are approximated with the expected values of a doubly truncated normal variable (Maddala, 1983, p. 366). This approach, which Van Praag and Ferrer-i-Carbonell (2004) have called the *Probit Ordinary Least Squares* approach (POLS), yields approximately the same estimates as a traditional OP regression, apart from a multiplying factor that stems from a different normalization. Moreover, the significance of the estimates, e.g. as evaluated by t-values, has been shown to be practically the same for both methods (see Ferrer-i-Carbonell and Fritjers, 2004; Van Praag and Ferrer-i-Carbonell, 2004, Ch. 2). It is therefore evident that there are significant advantages to using the cardinal measure of POLS instead of OP, since it simplifies the computational constraints that the researcher encounters when dealing with complicated models (e.g. sample selection or panel data).<sup>15</sup> It is for this reason that the POLS technique has been adopted in the econometric estimations of this paper.

Finally, it should also be noted that robust (Hubert-White) standard errors have been calculated in all of the regressions that correct for clustering at the individual level. This was deemed necessary, given the discrete nature of the low pay and the (original) job satisfaction variables, as well as the pooling of cross-sectional data over time. Time effects have also been accounted for through the inclusion of yearly dummy variables (Wooldridge, 2002, p. 128).

## 5. Empirical Results

### 5.1 *Empirical Results for Low Pay Selection Equations*

The estimation of the selection equations (3) makes use of the probit method to identify the factors that determine whether an individual works in the high or the low pay tier of the labour market. The regression results, as well as the marginal effects of the included variables, are presented in the first two columns of Table 4. As usual, positive coefficients imply a greater likelihood of an individual having low wages, whereas the marginal effects indicate the change in the probability that an individual is low-paid when each of the independent variables, calculated at the mean values of the sample, is increased by one unit. Due to space limitations we refrain from an extensive discussion of this output. It is clear, though, that the probability of low paid employment is concentrated on the same types of workers and job categories (females, young, private sector workers etc.) as was described in section 3 above.

More important for the purposes of the model is the fact that the chosen identifying restrictions are highly correlated with low pay status, most of them at the one percent significance level or less. Specifically, those who live in more spacious households (i.e. with two or more than three rooms per person) are less likely to be low-paid, compared to those who live in households with only one room per person. Accordingly, those with fewer good household features face a greater likelihood of being low-paid. The Wald test statistic for the joint significance of these selection variables in the probit equation is  $\chi^2(5) = 55.00$ , which is significant at the 1 percent level.

### 5.2 *Empirical Results for Overall Job Satisfaction Equations*

From the estimation of a job satisfaction equation on the entire sample of workers, as is shown in column 3 of Table 4, we find that low-paid employees in Greece are significantly less satisfied with their jobs compared to those who are high-paid, all other things equal.<sup>16</sup> Two ‘statistically identical’ individuals, who have the same characteristics, would therefore not be equally satisfied with their jobs if one of them worked in the low pay segment of the labour market and the other in the high pay one. In reality, the individual who is low-paid would, on average, receive lower utility from his/her work. This is evidence in favour of the dual labour market hypothesis, as it indicates that non-pecuniary benefits do not seem to compensate low wage workers in Greece, as would be expected in a labour market with perfectly competitive market forces. The idea that there exist ‘bad jobs’ and ‘good jobs’ in the Greek labour market is therefore supported by our data.

From the coefficients of Table 4 one can also derive an estimated value of the amount of money that low-paid workers in Greece would need to receive, in order to have their utility equalized to that of their higher-paid equivalents. Alternatively, such a calculation allows us to put an approximate monetary value on the disutility of low pay employment in Greece i.e. on the ‘implicit’ (shadow) cost that workers are ‘paying’ for being in low-paid jobs that are also of low quality. This can be done by looking at the relative size of the coefficients on the low pay and wage variables, as this provides information about how the wages of a marginal individual would need to change in the face of a change in his/her pay status, in order to keep utility from work constant (Blanchflower and Oswald, 2004). In our case, the calculus suggests that if a previously high-paid worker were to work in a low-paid job, he/she would need to be compensated with approximately 1,420drx extra per hour if he/she were to retain the same utility as before the change. As an indication of the magnitude of this figure, one

can note that the mean gross hourly wage of a low-paid worker in Greece in the years 1994-2001 was 826drx, while that of a high-paid worker was 2034drx. Thus, in order for a low-paid employee to enjoy the same utility as that of a higher-paid counterpart, he/she would need to receive on average approximately  $(826+1420)$  2,246drx per hour. It is therefore clear that equalizing the average wages of workers in the two tiers would not be enough to provide them with equal utility. Rather, it would be necessary to offer low-paid workers an additional  $(2,246-2034)$  212drx per hour, presumably to compensate them for the fact that low-paid jobs are also of inherent 'bad' quality. Of course, these calculations should be treated cautiously, but they do illustrate the quantitative importance of the estimated coefficients.

From the other explanatory variables we observe further that higher absolute wages have a significant positive effect on individual job satisfaction, consistent with the traditional income-leisure trade-off of microeconomic theory. The significant disutility associated with mean hours is also consistent with the conventional theory, while the significant positive effect of 'transitory' deviations from mean hours is reflective of the fact that those individuals who work in excess of average hours are more likely to be intrinsically satisfied with their jobs. Job satisfaction is also found to be U-shaped in age (thus confirming that the middle-aged are less satisfied), while we do not discover any significant effect of marital status or of the presence of young children in the household. After conditioning on the main job and worker characteristics, we also find that Greek men are less satisfied with their jobs compared to women.<sup>17</sup>

Considering now the variables that capture the 'stability' or 'precariousness' of the employment relationship, it is found that temporary, part-time, and private sector workers in Greece are strongly dissatisfied compared to those on permanent, full-time,

and public sector contractual arrangements. These results seem to confirm popular worries that increased labour market flexibility affects the job security of employees, provided that only a minority of individuals who work on non-permanent and part-time contracts do so by choice.

Significant differences in the subjective evaluation of jobs are also found among those who have different human capital characteristics. In Greece, workers with tertiary education and above the second stage of secondary education are more satisfied with their work, compared to those who have not completed the second stage secondary level. In addition, those who believe that their current job is not utilizing their skills to the full extent (i.e. self-reported over-qualification) have lower satisfaction scores than those who are content with their skills-job match. The provision of training by employers as a means of upskilling and career development also leads to significantly higher job satisfaction. Finally, very good health, which Mincer (1974) considered a form of human capital as well, is an additional factor that leads to higher utility from work.

Another important result that has surfaced from the econometric analysis is that the well-documented non-pecuniary costs of unemployment are partially offset once an unemployed individual finds some sort of employment. This is evident by the fact that, everything else equal, an 'ex-unemployed' worker is not likely to be significantly unhappier with his current job compared to someone who was employed a year earlier. In contrast, ex-inactive employees are happier, which is consistent with the fact that these people consist mainly of women and younger individuals. This specific group is more likely to be in the process of entering or re-entering employment, after having taken some time off voluntarily due to various care responsibilities or further education. Finally, there is also evidence that absenteeism, non-supervisory positions

in the hierarchy and working outside of Attica negatively impacts on the perceived quality of jobs.

### *5.3 Empirical Results for Facets of Job Satisfaction and by Sector*

Given that we have established that there exist significant differences in the perceived job quality of high and low-paid workers in Greece, which points towards the existence of a segmented labour market, we now proceed to investigate the reasons for this discrepancy. To this end, seven satisfaction equations have been estimated with some of the available components of jobs (pay, security, type of work, working hours, working times, working conditions/environment and commuting) as dependent variables this time (see Table 5). The results indicate that, with the exception of travelling distance to work, the greater dissatisfaction of low wage workers in Greece arises not only from their lower satisfaction with their pay, but, mainly, because of the inferior type of work that they perform. In addition, compared to their higher-paid counterparts, low wage employees in Greece are found to be less satisfied with their working hours and the environment of their workplace. Overall these findings seem to support the assertion that low wage jobs in Greece are inherently of bad quality.

Of course, the success of our preferred methodology hinges on the appropriateness of the identification restrictions of the model. For this purpose, statistical tests that examine the adequacy of the restrictions were repeatedly undertaken. Regressions were run in each case to ascertain statistically that our chosen selection variables are uncorrelated with the job satisfaction measures that were used. Specifically, the exogenous variables were entered as regressors in the job satisfaction equations together with the other covariates. In all estimations the instruments as a group did not add any significant explanatory power as tested by an F test. In fact, the relevant F-

statistics that are reported at the end of Tables 4 and 5 are small and insignificant in comparison to conventional statistical levels.

## **6. Conclusions**

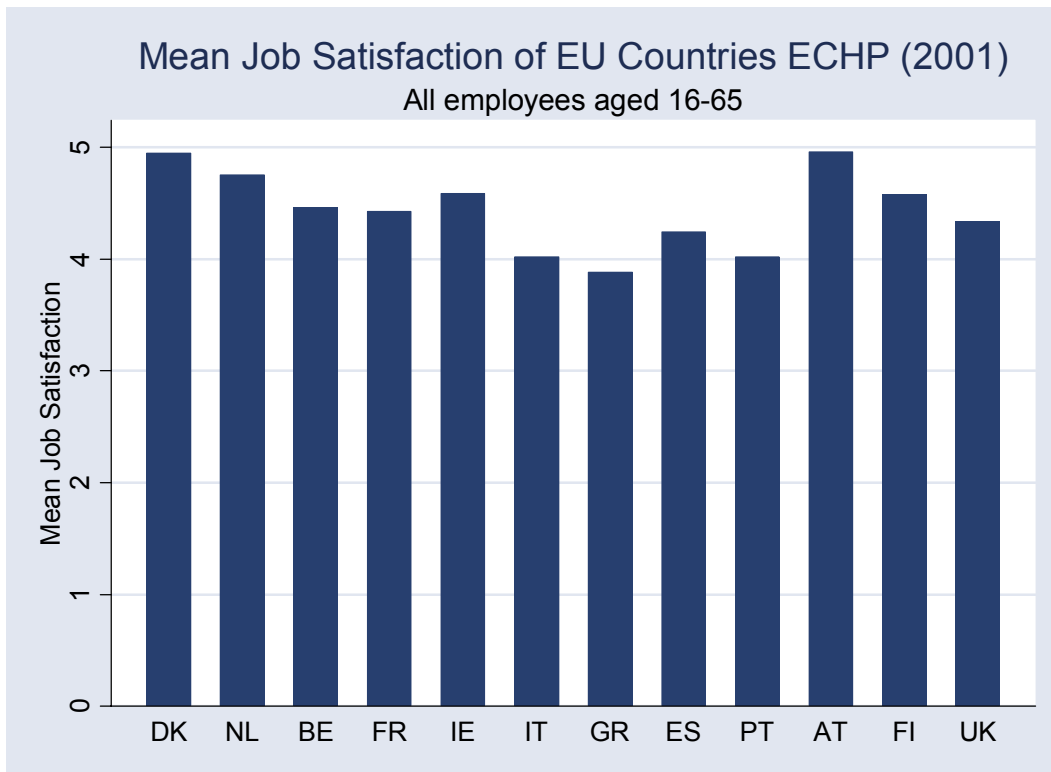
Following the establishment of job quality as one of the three overarching objectives of the EU's Employment Guidelines, and in the face of concerns regarding the declining economic prospects of workers on the lower rungs of the income distribution, which has supposedly led to the emergence of a two-tier labour market in Europe, this study examined whether significant differences in perceived job quality exist among high and low-paid workers in Greece. To do so we followed the practice of an ever-increasing number of economists, who use self-reported job satisfaction data to proxy the overall quality of work as perceived by the individual worker. Using data from the eight waves of the ECHP, evidence was presented that low-paid workers in Greece do in fact seem to suffer from a double penalty, as their jobs are also of bad quality. Further analysis of the specific facets of jobs revealed that this fact arises due to the lower average satisfaction of low wage employees with their pay, the type of work that they perform, as well as their working hours and conditions.

The results of this study therefore vindicate previous claims regarding the segmented nature of the Greek job market. As has been noted by other authors (Tsakloglou and Cholezas, 2004), the discrepancy between 'good' and 'bad' jobs in this country is likely to have emerged due to the specific structure of the Greek labour market. In Greece the prevalence of agricultural employment (15%) and self-employment (44%), the small (in terms of number of employees) size of firms and enterprises, the limited and to a large extent involuntary nature of part-time work, and the fact that about a third of paid employees are employed in the broadly defined

public sector (Kanellopoulos et al, 2003) has resulted in a dualistic labour market. “On the one hand, there are those who are either low-skilled self-employed or employed in small firms, receive low wages, work in unstable and precarious conditions, often for very long hours, and face a highly competitive environment. On the other hand, there are those who are working either in the highly unionised public sector or in large private sector firms who receive relatively high wages and enjoy far better working conditions” (op cit., 2004).

In view of this segmentation, combined with the fact that Greece remains a low wage economy, it becomes evident that policies that centre on the quality of jobs are of equal importance to those that focus on the level of pay that they provide. This, however, requires the design of a regulatory framework that will, firstly, ensure that low-paid jobs are underpinned by an infrastructure of decency and fairness with guaranteed workplace rights, and, secondly, encourage the mobility of those workers who are involuntarily trapped in low wage/low quality employment into more desirable jobs.

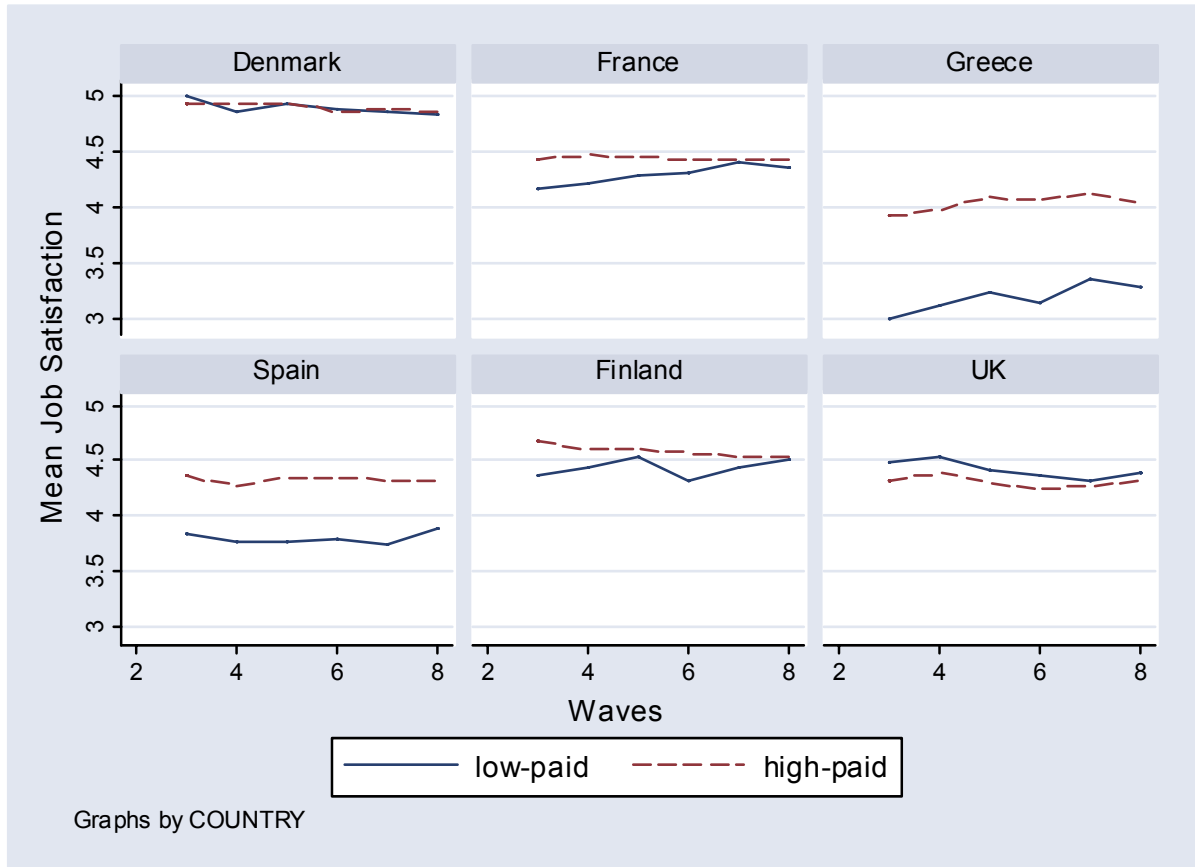
**FIGURE 1**



**FIGURE 2**



**FIGURE 3**  
**Mean job satisfaction of high and low-paid workers**  
**in six EU countries over time (1996-2001)**



**TABLE 1 Median wages, thresholds, and low wage workers  
in Greece, 1994-2001**

<i>Year</i>	<i>Median</i>	<i>Threshold</i>	<i>Low-paid</i>
1994	1214.674	809.7827	17.7
1995	1269.095	846.0635	16.65
1996	1448.031	965.3543	16.8
1997	1630.435	1086.957	17.66
1998	1702.517	1135.011	16.62
1999	1760.87	1173.913	16.9
2000	1795.196	1196.797	18.46
2001	1835.228	1223.485	17.22
<b>1994-2001</b>	<b>1550.311</b>	<b>1033.541</b>	<b>17.24</b>

**Notes:** Amounts quoted in drachmas (not adjusted for inflation); The threshold refers to 2/3rds of the median of the gross hourly wage distribution; The last column indicates the proportion of employees whose wages are below the threshold;

**Source:** own calculations using ECHP UDB;

**TABLE 2 Incidence, distribution and concentration of low-paid employment in Greece, 1994-2001**

<i>Category</i>	<i>Incidence<sup>a</sup></i>	<i>Distribution<sup>b</sup></i>	<i>Concentration<sup>c</sup></i>
<b>Total</b>	17.24	100	1
<b>By sex</b>			
Female	22.69	49.93	1.32
Male	13.9	50.07	0.81
<b>By age</b>			
16-25	47.37	40.41	2.75
26-35	16.35	29.56	0.95
36-45	9.06	15.02	0.53
46-55	8.97	10.47	0.52
56-65	14.41	4.55	0.84
<b>By marital status</b>			
Not married	30.6	61.31	1.77
Married	10.18	38.69	0.59
<b>By working time status</b>			
Part-time	19.08	5.9	1.11
Full-time	17.18	94.1	1.00
<b>By sector</b>			
Sector: public	3.66	8.22	0.21
Sector: private	25.55	91.78	1.48
<b>By position in hierarchy</b>			
Supervisory	2.29	0.84	0.13
Intermediate	4.15	1.8	0.24
Non-supervisory	18.99	97.35	1.10
<b>By contractual arrangement</b>			
Permanent	10.65	49.03	0.62
Fixed/short term	24.79	12.84	1.44
Casual/no contract	44.27	37.21	2.57
Other arrangement	26.73	0.92	1.55
<b>By training incidence</b>			
No training/education	21.93	76.91	1.27
Training/education	9.53	23.09	0.55
<b>By educational attainment</b>			
Tertiary	6.78	12.06	0.39
Second stage secondary	18.71	40.43	1.09
Below second stage secondary	24.67	47.51	1.43
<b>By health</b>			
Very good	17.72	72.76	1.03
Good	15.34	19.78	0.89
Fair	19.23	6.13	1.12
Bad	20.23	0.98	1.17
Very bad	36.11	0.36	2.09
<b>By status last year</b>			
Employed	14.14	73.09	0.82
Self-employed	16.75	0.90	0.97

Unemployed	45.10	12.48	2.61
Inactive	49.59	13.54	2.87
<b>By industry</b>			
Agriculture	44.44	3.81	2.58
Industry	18.69	32.09	1.08
Services	15.67	64.1	0.91
<b>By occupation</b>			
Legislators/managers	4.25	0.58	0.25
Professionals	3.41	3.38	0.20
Technicians/associate prof.	11.01	5.47	0.64
Clerks	10.63	11.32	0.62
Service and Sales	31.61	26.17	1.83
Skilled agriculture/fishery	38.06	2.74	2.21
Craft/trade	23.2	25.39	1.35
Plant/machine operators	13.47	7.83	0.78
Elementary	30.14	17.12	1.75

**Notes:** Low pay is defined as less than 2/3rds of median hourly earnings of all employees aged 16-65.

<sup>a</sup>Percentage of workers in each category who are low-paid.

<sup>b</sup>Percentage share of all low-paid employment in each category.

<sup>c</sup>Incidence of low-paid employment in each category divided by overall incidence of low-paid employment. A value greater than 1 indicates a higher than average risk of being low-paid, while a value less than 1 indicates a smaller probability.

**Source:** own calculations using ECHP UDB;

**TABLE 3 Mean Job Satisfaction Scores of all Greek employees, 1994-2001**

	<i>Overall</i>	<i>Pay</i>	<i>Security</i>	<i>Type work</i>	<i>Hours</i>	<i>Times</i>	<i>Conditions</i>	<i>Commuting</i>
<b><i>Low-paid</i></b>	<b>3.17(1.23)</b>	<b>2.60(1.05)</b>	<b>3.01(1.39)</b>	<b>3.44(1.31)</b>	<b>3.46(1.23)</b>	<b>3.57(1.24)</b>	<b>3.63(1.31)</b>	<b>4.02(1.36)</b>
<b><i>High-paid</i></b>	<b>4.02(1.17)</b>	<b>3.39(1.09)</b>	<b>4.25(1.44)</b>	<b>4.15(1.24)</b>	<b>4.14(1.14)</b>	<b>4.12(1.23)</b>	<b>3.98(1.29)</b>	<b>4.15(1.33)</b>
<b><i>By sex</i></b>								
Female	3.87(1.24)	3.21(1.14)	4.00(1.53)	4.08(1.27)	4.07(1.18)	4.12(1.24)	4.17(1.23)	4.13(1.35)
Male	3.88(1.22)	3.29(1.11)	4.06(1.50)	3.99(1.29)	3.99(1.19)	3.97(1.26)	3.77(1.33)	4.12(1.32)
<b><i>By age</i></b>								
16-25	3.55(1.21)	2.96(1.08)	3.36(1.38)	3.77(1.27)	3.77(1.20)	3.78(1.23)	3.88(1.28)	4.07(1.32)
26-35	3.81(1.19)	3.20(1.09)	3.88(1.47)	4.01(1.25)	3.95(1.18)	3.95(1.25)	3.93(1.29)	4.01(1.35)
36-45	4.03(1.21)	3.35(1.11)	4.31(1.47)	4.14(1.26)	4.13(1.18)	4.12(1.27)	3.96(1.30)	4.24(1.32)
46-55	4.00(1.22)	3.40(1.15)	4.34(1.49)	4.11(1.29)	4.16(1.15)	4.17(1.21)	3.92(1.30)	4.18(1.32)
56-65	3.83(1.33)	3.32(1.23)	4.10(1.63)	3.91(1.43)	4.03(1.23)	4.05(1.30)	3.80(1.45)	4.14(1.36)
<b><i>By marital status</i></b>								
Not married	3.70(1.24)	3.08(1.11)	3.67(1.49)	3.90(1.29)	3.87(1.19)	3.90(1.24)	3.91(1.30)	4.02(1.33)
Married	3.97(1.21)	3.35(1.11)	4.23(1.49)	4.09(1.27)	4.10(1.17)	4.09(1.26)	3.93(1.31)	4.18(1.33)
<b><i>By working time status</i></b>								
Part-time	3.37(1.51)	2.58(1.19)	3.37(1.79)	3.93(1.49)	4.05(1.42)	4.22(1.34)	4.00(1.36)	4.21(1.43)
Full-time	3.91(1.20)	3.29(1.11)	4.07(1.48)	4.03(1.27)	4.02(1.17)	4.01(1.25)	3.92(1.30)	4.12(1.33)
<b><i>By industry</i></b>								
Agriculture	2.89(1.27)	2.56(1.11)	2.64(1.47)	2.84(1.35)	3.20(1.21)	3.18(1.32)	2.91(1.41)	3.93(1.45)
Industry	3.57(1.20)	3.15(1.11)	3.57(1.45)	3.68(1.28)	3.89(1.15)	3.94(1.20)	3.47(1.32)	3.99(1.33)
Services	4.04(1.20)	3.33(1.12)	4.28(1.47)	4.21(1.23)	4.10(1.18)	4.09(1.26)	4.14(1.23)	4.19(1.33)
<b><i>By sector</i></b>								
Sector: public	4.38(1.10)	3.52(1.10)	4.91(1.30)	4.48(1.16)	4.44(1.09)	4.38(1.22)	4.19(1.25)	4.32(1.34)
Sector: private	3.58(1.19)	3.10(1.10)	3.50(1.37)	3.75(1.27)	3.77(1.17)	3.81(1.23)	3.76(1.31)	4.00(1.32)

<b>By job status</b>									
Supervisory	4.66(1.02)	3.93(1.14)	5.00(1.14)	4.75(1.10)	4.32(1.22)	4.37(1.27)	4.44(1.26)	4.37(1.40)	
Intermediate	4.35(1.07)	3.53(1.13)	4.69(1.33)	4.48(1.14)	4.15(1.18)	4.19(1.30)	4.09(1.30)	4.20(1.40)	
Non-supervisory	3.79(1.22)	3.19(1.10)	3.92(1.50)	3.93(1.28)	3.99(1.18)	3.98(1.24)	3.87(1.30)	4.10(1.32)	
<b>By contractual arrangement</b>									
Permanent	4.10(1.10)	3.46(1.04)	4.50(1.26)	4.24(1.17)	4.17(1.09)	4.13(1.19)	4.07(1.22)	4.19(1.29)	
Fixed/short term	3.50(1.15)	3.10(1.06)	2.74(1.23)	3.75(1.26)	3.78(1.12)	3.80(1.16)	3.77(1.29)	4.06(1.31)	
Casual/no contract	2.88(1.08)	2.60(1.01)	2.44(1.08)	3.12(1.21)	3.33(1.14)	3.44(1.18)	3.27(1.28)	3.85(1.27)	
Other arrangement	3.75(1.12)	3.39(1.11)	3.49(1.34)	3.85(1.36)	3.75(0.97)	3.86(1.12)	4.09(1.27)	4.34(1.26)	
<b>By training incidence</b>									
No training/education	3.62(1.22)	3.13(1.09)	3.76(1.50)	3.72(1.28)	3.87(1.17)	3.88(1.23)	3.73(1.30)	4.07(1.30)	
Training/education	4.27(1.12)	3.46(1.14)	4.44(1.42)	4.46(1.15)	4.24(1.17)	4.23(1.26)	4.20(1.25)	4.20(1.38)	
<b>By educational attainment</b>									
Tertiary	4.35(1.13)	3.53(1.14)	4.56(1.40)	4.61(1.11)	4.33(1.14)	4.40(1.19)	4.34(1.17)	4.20(1.37)	
Second stage secondary	3.89(1.15)	3.29(1.07)	4.05(1.45)	4.03(1.21)	4.01(1.15)	3.97(1.24)	4.02(1.25)	4.13(1.30)	
Below second stage secondary	3.43(1.22)	2.97(1.09)	3.53(1.50)	3.48(1.27)	3.75(1.19)	3.74(1.24)	3.42(1.32)	4.04(1.33)	
<b>By health</b>									
Very good	3.94(1.21)	3.32(1.11)	4.06(1.48)	4.08(1.26)	4.05(1.17)	4.04(1.24)	3.99(1.28)	4.16(1.31)	
Good	3.77(1.19)	3.15(1.10)	4.00(1.53)	3.94(1.28)	3.94(1.19)	3.97(1.26)	3.79(1.30)	4.03(1.35)	
Fair	3.61(1.37)	2.93(1.24)	3.84(1.71)	3.71(1.43)	4.01(1.26)	4.01(1.35)	3.61(1.48)	4.05(1.49)	
Bad	3.50(1.51)	2.79(1.24)	3.90(1.87)	3.59(1.53)	4.09(1.40)	4.11(1.37)	3.57(1.48)	4.13(1.56)	
Very bad	3.66(1.70)	2.88(1.23)	4.02(1.85)	3.97(1.46)	4.02(1.64)	4.00(1.80)	3.27(1.76)	4.30(1.67)	

Notes: Standard deviations in parentheses.

Source: Own calculations based on ECHP UDB (1994-2001) data

**TABLE 4**  
**Estimates of low pay status and of**  
**overall job satisfaction in Greece, 1995-2001**

	(1) Lowpay	(2) Marginal effect	(3) Overall JS
<b>Lowpay</b>			-0.153 (0.069)**
<b>Personal</b>			
Male	-0.527 (0.054)***	-0.058	-0.071 (0.023)***
Age	-0.139 (0.015)**	-0.013	-0.019 (0.007)**
Agesq	0.001 (0.0001)***	0.0001	0.0002 (0.000)**
Married	-0.264 (0.059)***	-0.028	-0.026 (0.026)
Child < 12yrs	-0.183 (0.054)***	-0.017	0.026 (0.020)
Unemployed 5yrs	0.067 (0.048)	0.006	-0.017 (0.022)
<b>Work-related</b>			
Ln(pay)			0.436 (0.031)***
Tenure	-0.037 (0.014)**	-0.003	0.006 (0.005)
Tenuresq	0.0002 (0.0007)	0.000	-0.0001 (0.0002)
Ln(Total hours)	2.870 (0.162)***	0.284	0.492 (0.070)***
Mean(hours)	-1.132 (0.188)***	-0.112	-0.024 (0.078)
Full-time	-0.906 (0.120)***	-0.168	0.101 (0.047)**
Private	-0.626 (0.100)***	0.056	-0.205 (0.029)***
Absenteeism	-0.008 (0.006)	0.0008	-0.006 (0.003)**
Twojobs	0.225 (0.101)**	0.026	0.143 (0.041)***
<b>Duties</b>			
Intermediate	0.131 (0.191)	0.014	-0.120 (0.044)***
Non-supervisory	0.586 (0.165)***	0.040	-0.181 (0.038)***
<b>Contract</b>			
Fix/short term	0.275 (0.062)***	0.033	-0.270 (0.033)***
Casual work	0.541 (0.052)***	0.074	-0.382 (0.028)***
Other	0.209 (0.216)	0.024	0.006 (0.077)
<b>Human Capital</b>			
Training	-0.169 (0.051)***	-0.016	0.094 (0.018)***
Overqualified	0.033 (0.040)	0.003	-0.163 (0.016)***
Third level	-0.375	-0.033	0.079

2 <sup>nd</sup> secondary	(0.079)*** -0.136 (0.055)**	-0.013	(0.032)** 0.069 (0.025)***
<b>Health</b>			
Good	0.015 (0.045)	-0.001	-0.154 (0.019)***
Fair	0.149 (0.088)*	-0.016	-0.082 (0.041)**
Bad/Very Bad	0.149 (0.088)*	-0.050	-0.025 (0.100)
<b>Status last year</b>			
Self-employed	-0.009 (0.155)	-0.000	-0.055 (0.070)
Unemployed	0.318 (0.066)***	-0.039	-0.045 (0.036)
Inactive	0.326 (0.072)***	0.041	0.088 (0.041)**
<b>Region</b>			
Northern GR	0.311 (0.057)***	0.034	-0.073 (0.023)***
Central GR	0.133 (0.064)**	0.014	-0.070 (0.026)***
Aegean islands	-0.119 (0.078)	0.012	-0.003 (0.032)
<b>Identifying variables</b>			
2 rooms pp	-0.305 (0.064)***	-0.025	
> 3 rooms pp	-0.369 (0.163)**	-0.027	
< 2 good features	0.469 (0.156)***	0.067	
3 good features	0.388 (0.090)***	0.051	
4 good features	0.162 (0.046)***	0.017	
Constant	-3.559 (0.669)***		-4.44 (0.384)***
N	15521		15521
Wald test (d.f)	2054.19(63)***		4183.94(60)***
Log-likelihood	-4227.9534		-22838.973
$\chi^2$ (5) ( $H_0: Z = 0$ )	55		

**Notes:** Standard errors in parentheses: robust to arbitrary heteroscedasticity and the repeat sampling of individuals over time; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%; The ordinal dependent variable overall job satisfaction has been transformed according to the POLS approach; All regressions include controls for occupation (9), industry (13) and time (7); Column 1 includes probit estimates of low pay status. Column 2 includes the marginal effect of an independent variable on the probability of low pay status, evaluated at the means of the remaining explanatory variables. Column 3 includes ML "treatment effect" estimates of the job satisfaction of Greek employees; *Reference groups:* duties: supervisory; contract: permanent; education: below second stage; health: very good; status last year: employed; region: Attica; rooms pp: 1 room pp; good features: more than 5 good features; F test statistic for the joint significance of the identifying restrictions in an overall job satisfaction regression:  $F(5, 4098) = 1.27$  - p-value: 0.274;

**TABLE 5 Estimates of effect of low pay status on facets of job satisfaction in Greece, 1995-2001**

	(1)Pay	(2)Security	(3)Type work	(4)Hours	(5)Conditions	(5)Times	(6)Commuting
<b>Lowpay</b>	-0.213 (0.094)**	0.057 (0.076)	-0.126 (0.061)**	-0.107 (0.064)*	-0.198 (0.091)**	-0.040 (0.082)	0.228 (0.095)**
N	15528	15528	15528	15528	15528	15528	15528
Wald test (60)	2822.77***	8649.30***	3624.45***	2559.66***	2118.82***	2224.61***	625.17***
Log-likelihood	-23277.018	-20723.811	-23076.593	-23833.425	-23985.962	-24172.733	-25033.995

**Notes:** Standard errors in parentheses: robust to arbitrary heteroscedasticity and the repeat sampling of individuals over time; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%; Results for the remaining explanatory variables are available from the authors upon request; All columns include ML “treatment effect” estimates, where the first step is a probit regression of the treatment lowpay dummy on the regressors of the underlying regression model and the chosen selection variables; F-test statistics for the joint significance of the selection variables in each job satisfaction regression: *Pay* - F(5, 4098) = 0.70; *Security* - F(5, 4234) = 1.71; *Type Work* – F(5, 15462) = 1.18; *Hours* - F(5, 4098) = 0.67; *Times* - F(5, 4098) = 0.55; *Conditions* – F(5, 4098) = 2.11; *Commuting* - F(5, 4098) = 0.32.

## Appendix: Description of variables

Variable	Description
<b>Job Satisfaction scores (1 = 'not satisfied', 6 = 'fully satisfied')</b>	
Overall Job Satisfaction	Respondent satisfaction rating with work or main activity
Job Satisfaction: facets	Respondent satisfaction rating of facet <i>i</i> of present job ( <i>i</i> = earnings, job security, type of work, number of working hours, working times, work conditions/environment, distance to work/commuting)
<b>Identifying variables</b>	
1 room pp	1, if individual lives in household with 1 room per person (not counting kitchen, bathroom and toilets), 0 otherwise (omitted)
2 rooms pp	1, if individual lives in household with 2 rooms per person (not counting kitchen, bathroom and toilets), 0 otherwise
> 3 rooms pp	1, if individual lives in household with more than 3 rooms per person (not counting kitchen, bathroom and toilets), 0 otherwise
< 2 good features	1, if accommodation has less than two good features, 0 otherwise
3 good features	1, if accommodation has 3 good features, 0 otherwise
4 good features	1, if accommodation has 4 good features, 0 otherwise
> 5 good features	1, if accommodation has more than 5 good features, 0 otherwise (omitted)
<b>Job and Personal Characteristics</b>	
<i>Lowpay</i>	1, if individual is low-paid, defined as having wages less than 2/3rds of median current gross hourly wages, 0 otherwise
<i>Lnpay</i>	natural log of gross hourly wage of main job (including overtime)
<i>Age</i>	age of respondent at date of interview
<i>Agesq</i>	age squared
<i>Tenure</i>	job tenure at date of interview
<i>Married</i>	1, if individual is married, 0 otherwise
<i>Male</i>	1, if gender is male, 0 otherwise
<i>Mean hours</i>	Average number of (log) total hours that the respondent worked per week (in main plus additional jobs, including paid overtime) over the years of the survey
<i>Ln(Hours)</i>	Natural log of total number of hours worked per week (in main plus additional jobs, including paid overtime)
<i>Child &lt; 12yrs</i>	1, if household has 1 or more children under 12, 0 otherwise
<i>Unemployed 5yrs</i>	1, if individual has been unemployed during 5 years before joining the survey, 0 otherwise
<i>Full-time</i>	1, if main job is full-time, 0 otherwise
<i>Private</i>	1, if current job is in the private sector, 0 otherwise
<i>Absenteeism</i>	Days absent from work cause of illness or other reason during last 4 working weeks, not counting holiday weeks
<i>Two jobs</i>	1, if respondent has more than one job, 0 otherwise
<b>Human Capital</b>	
<i>Training</i>	1, if individual had formal training or education that gave skills needed for present type of work, 0 otherwise
<i>Overqualified</i>	1, if individual feels has skills or qualifications to do more demanding job than the one has now, 0 otherwise
<i>Below second stage secondary</i>	1, if highest level of general or higher education completed is less than second stage of secondary education, 0 otherwise (omitted)
<i>Second stage secondary</i>	1, if highest level of general or higher education completed is second stage of secondary education, 0 otherwise
<i>Third level</i>	1, if highest level of general or higher education completed is recognised third level education, 0 otherwise
<b>Duties</b>	
<i>Supervisory</i>	1, if job status in current job is supervisory (omitted), 0 otherwise
<i>Intermediate</i>	1, if job status in current job is intermediate, 0 otherwise
<i>Non-supervisory</i>	1, if job status in current job is non-supervisory, 0 otherwise
<b>Contract</b>	
<i>Permanent</i>	1, if employment contract in main job is permanent, 0 otherwise (omitted)
<i>Fixed/short term</i>	1, if employment contract in main job is fixed term or short-term, 0

Casual work	otherwise 1, if employment contract in main job is casual work with no contract, 0 otherwise
Other	1, if employment contract in main job is other arrangement, 0 otherwise
<b>Health</b>	
Health: very good	1, if health in general is very good, 0 otherwise (omitted)
Health: good	1, if health in general is good, 0 otherwise
Health: fair	1, if health in general is fair, 0 otherwise
Health: poor	1, if health in general is poor, 0 otherwise
Health: very poor	1, if health in general is very poor, 0 otherwise
<b>Status last year</b>	
Employed	1, if most frequent activity last year was employment, 0 otherwise (omitted)
Self-employed	1, if most frequent activity last year was self-employment, 0 otherwise
Unemployed	1, if most frequent activity last year was unemployment, 0 otherwise
Inactivity	1, if most frequent activity last year was inactivity, 0 otherwise
<b>Region</b>	
Attica	1, if region in which the household is situated is Attica, 0 otherwise (omitted)
Northern GR	1, if region in which the household is situated is Northern Greece, 0 otherwise
Central GR	1, if region in which the household is situated is Central Greece, 0 otherwise
Aegean Islands, Crete	1, if region in which the household is situated are the Aegean Islands or Crete, 0 otherwise
<hr/>	
<b>Other controls</b>	
Industry	a set of 13 dummies for one-digit industry, taking the value 1 if the respondent's job belongs to the corresponding industry classification, 0 otherwise. The one-digit industries include: Agriculture; Mining; Manufacturing; Construction; Retail and Trade; Hotels and Restaurants; Transport and Communication; Financial Services; Real Estate; Public Administration; Education; Health, social services; other (omitted: Agriculture)
Occupation	a set of 9 dummies for one-digit occupation, taking the value 1 if the respondent's job belongs to the corresponding occupational classification, 0 otherwise. The one-digit occupations include: Legislators, Senior officials and managers; Professionals; Technicians and associate professionals; Clerks; Service and Shop and market sales workers; Skilled agricultural and fishery workers; Craft and related trades workers; Plant and machine operators and assemblers; Elementary occupations (omitted: Elementary occupations)
Year	a set of seven dummies taking the value 1 for observations that belong to the corresponding wave of the ECHP, 0 otherwise. Years of sample include: 1995, 1996, 1997, 1998, 1999, 2001 and 2001 (omitted category: 1995)
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## Endnotes

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<sup>1</sup> These indicators cover 10 main elements of quality within two broad categories – the characteristics of the job itself, and the work and wider labour market context. They include: intrinsic job quality; skills, lifelong learning and career development; gender equality; health and safety at work; flexibility and security; inclusion and access to the labour market; work organization and work-life balance; social dialogue and worker involvement; diversity and non-discrimination; and overall work performance.

<sup>2</sup> Indeed, the strength of this approach seems to lie in the fact that subjective assessments of job satisfaction have been found to be strong predictors of worker behaviour, such as quits, absenteeism, and worker productivity (Freeman, 1978; Clegg, 1983).

<sup>3</sup> Also see Pouliakas and Theodossiou (2004) and McCausland, Pouliakas, and Theodossiou (2005) for a relative comparison of job satisfaction among workers receiving performance-related pay (PRP) and those on alternative compensation schemes.

<sup>4</sup> In this case researchers assume a utility function that depends not only on absolute income, but also on relative income i.e.  $U = u(y, y^*, h, i, j)$ , where  $y^*$  is the reference level of income against which the individual compares his/her own earnings. The idea is that utility either declines with an increase in comparison income when this gives rise to feelings of relative deprivation, or increases when higher wages of co-workers are regarded as a signal of a higher potential wage for the individual himself (what is known as the ‘tunnel effect’ - see Panos, Theodossiou and Nicolaou (2004) for an empirical investigation of these two hypotheses).

Nevertheless, contention exists among economists as to what is exactly the comparison benchmark. While Clark and Oswald (1996) have defined it as the econometrically predicted ‘going rate’ for the job, that is the income of comparable employees of given characteristics, Clark (1999) and Grund and Sliwka (2003) have recently argued that it is the wage of the prior period that serves as reference. Due to the limited availability of data in the ECHP, however, it has not been possible to incorporate any of these relative wage effects in the econometric analysis below.

<sup>5</sup> Though difficult to test, several hypotheses for these facts have been put forward. For example, it has been argued that more educated workers are less satisfied since education raises aspiration targets. The lower ceteris paribus satisfaction of union workers has been attributed to voice mechanisms that allow workers to express their dissatisfaction, or to the fact that dissatisfaction is used by unions as a means to increase demands.

<sup>6</sup> This section is heavily based on the literature review for Greece (Annex 3) that was undertaken as part of the EPICURUS project by Vasileiou, E. at the University of Macedonia.

<sup>7</sup> In the first wave of the ECHP (1994) the sample comprised of 60,500 representative households and 130,000 interviewees aged 16 years or over, from 12 Member States. From 1995 onwards Austria was also included, and from 1996 and 1997 Finland and Sweden, respectively, joined the survey as well.

<sup>8</sup> The decision to pool the eight years of data was made in order to maximise the number of observations in the sample, and to control for certain unobservable effects that change over time but are constant across individuals (such as inflation and other political and economic disturbances within the country). This is achieved via the inclusion of yearly dummy variables in the econometric analysis.

<sup>9</sup> Given that the presence of part-time workers in the sample introduces the additional complexity of disentangling differences in time worked from differences in wage rates, hourly earnings were constructed in order to neutralize the effect of diverse working hours among full-time and part-time workers.

<sup>10</sup> Such a relative measure is commonly used in the literature, since an absolute metric poses difficult conceptual and methodological problems for making international comparisons of the incidence of low pay (OECD, 1996, p. 69).

<sup>11</sup> It should be borne in mind, though, that in Greece there is a large number of atypical low-paid workers who are employed in the parallel economy, and who therefore do not form part of the official statistics. Thus, the 17 percent figure should be seen as a minimum estimate (Ioakimoglou and Soumeli, 2002). Of course, it should be pointed out that low-wage employees do not necessarily live in low-income households. In Greece, especially, “a person’s likelihood of being poor depends to a large extent on the income of his (closely knit) family and not exclusively on his individual income” (ibid., 2002). Apart from the fact that workers’ households often have two wages, as well as the continued support by parents and the extended family, non-labour income (such as property income) is also common.

<sup>12</sup> Specifically, among the 5.34 percent of employees who work in a part-time job in our sample, almost 47 percent declare that they do it because they were unable to find other work, while only 7.5 percent preferred this type of working arrangement. Furthermore, given that “part-time employment in Greece

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is directly interwoven with low pay, low-skilled jobs, limited prospects of career development, low social benefits and partial insurance coverage which also entails low pension rights” (Ioakimoglou and Soumeli, 2002), it is understandable why such workers report lower job satisfaction ratings.

<sup>13</sup> This is consistent with Papapetrou’s (2003, p. 45-7) finding that female and male wages in the Greek private sector are on average 37 and 34 percent less than in the public sector, respectively. The high level of security satisfaction expressed by Greek public sector workers can also be explained by the element of permanency in such jobs.

<sup>14</sup> A more detailed account of the issues that are discussed here can be found in Westergaard-Nielsen et al. (2004), p. 276-282.

<sup>15</sup> Ultimately, given that the focus of interest is on the relative contribution of ‘objective’ characteristics on well-being i.e. on the *trade-off* ratio between two variables, so as to maintain well-being constant, the econometric method that is used becomes irrelevant. This is the case since the trade-off ratios for either OLS, OP and POLS estimates are the same, apart from statistical deviations, which tend to become small in large samples (Westergaard-Nielsen et al., 2004, p. 280).

<sup>16</sup> Given that data for the type of contractual arrangement was not available for wave 1 in Greece, the regression output that is reported in this paper has been estimated on the basis of the 1995-2001 period.

<sup>17</sup> This might seem surprising, given that Papapetrou (2004) and others have found substantial and significant male-female earnings differentials across occupations and countries, while there is also evidence of discrimination against women in areas such as hiring/firing and promotion. Nevertheless, the fact that women consistently report higher job satisfaction scores than men is well established in the literature. Attempts to explain this paradox have usually focused on the difference in aspirations between the two genders, with women supposedly expecting less from their jobs due to more frequent career breaks and previous discriminatory behaviour in the workplace. The narrower gap between their current working state and what women expect might therefore explain their greater happiness (Clark, 1997).