



# SOCIAL CLASS AND EARNINGS TRAJECTORIES IN 14 EUROPEAN COUNTRIES

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## Abstract

In this paper, we seek to contribute to ongoing discussions of the relationship between income and class in analyses of social inequality and mobility. We argue that while class has sometimes been taken as a proxy for long-term earning levels, it is of greater importance, at least when treated in terms of the EGP schema or the European Socio-Economic Classification (ESEC), in capturing differences in the trajectories that employees' earnings follow over the course of their working lives. Moving beyond previous single country studies, we examine how far the theory that underlies ESEC is reflected in men's age-earnings trajectories across 14 European countries, while also taking into account any effects of their educational qualifications. Modelling data from the 2017 EU-SILC survey, and focussing on men's full year/full-time equivalent gross annual earnings, we find that although the age-earnings trajectories that are estimated for different classes do reveal some cross-national variation, there are major features, of a theoretically expected kind, that are evident with our pooled sample and that regularly recur in individual countries. Class differences in earnings are at their narrowest for men in the youngest age group but then widen across older age groups. This occurs primarily because the earnings of men in the professional and managerial salariat, and especially in the higher salariat, show a marked rise with age, while the earnings of men in other classes rise far less sharply or remain flat. We also find evidence that these diverging trajectories are primarily shaped by individuals' class positions independently of their level of qualifications – however important the latter is in determining the class positions that they hold. What can be regarded as the logic of different forms of employment relations, as captured by ESEC, leads to a large degree of cross-national commonality in the association that exists between class and the trajectories of earnings over working life.

## Introduction

Of late, a number of exchanges have occurred between sociologists and economists on the relative merits of analysing social inequality and social mobility in terms of class, as generally favoured by the former, or of income, as generally favoured by the latter. Some differences of view on this issue are now also emerging among sociologists themselves. In seeking to contribute to the discussion that has arisen, we start out from two recent papers: that of Kim, Tamborini and Sakamoto (subsequently KTS) (2018) and that of Yaish and Kraus (subsequently YK) (2020).

KTS's work would appear to rest on an unwarranted assumption. That is, that in analysing social inequality and social mobility, sociologists are attracted to social class primarily because they believe that it provides *a good proxy for long-term earnings* (2018: 206-8). It is true, as KTS document, that sociologists have at times suggested that class might serve as a proxy in this way, and it is therefore entirely appropriate that KTS should investigate, as they do, how far it serves well. But they are very wide of the mark in supposing that this is the main reason for sociologists' interest in class. What sociologists who favour class analysis have more generally maintained is that class position is a good indicator of, what KTS at one point (2018: 208) refer to, as 'long-term socioeconomic standing', but which sociologists would take as encompassing *significantly more than level of earnings*.<sup>1</sup>

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<sup>1</sup> A further assumption that KTS make – if one less relevant to our present purposes – may also be questioned. That is, that that long-term or lifetime earnings are of 'critical importance' (2018: 211) in determining a whole range of life chances, extending not only to economic outcomes, such as the accumulation of wealth or pensions rights but also to life expectancy, marital stability, overall life satisfaction and feelings of self-worth (2018: 206). KTS do cite evidence that long-term earnings are a factor in these latter regards; but they do not cite, and we are not aware of, any evidence that would indicate that their effect is in any sense 'critical' – as, say, in dominating that of all other factors involved.

Where, as with the EGP class schema (Erikson, Goldthorpe and Portocarero, 1979), to which KTS chiefly refer, class positions are derived from social relations in labour markets and workplaces, what is seen as captured – and now with substantial supporting evidence – is not only level of earnings but, further, security of earnings, stability of earnings and earnings prospects (Bukodi and Goldthorpe, 2019: ch. 1). Interest is not limited to how much individuals earn and to inequalities in this regard but extends to the form of employment relations within which individuals make their earnings and to the further inequalities that in this way arise.

The foregoing is well understood by YK. Largely in response to KTS, they directly pose the question (2020: 2) of whether class does ‘capture more than simply the overall level of earnings’ and focus on long-term earnings. However, they are then concerned not with earnings simply as summed over some period – 20 years in the case of KTS – but rather with the *trajectories that employees’ earnings describe over the course of their working lives* and thus with their earnings prospects at different ages. Following the logic of the EGP class schema (see Goldthorpe, 2007, vol. 2: ch. 5; McGovern et al., 2007: ch. 3), they would expect the shape of these trajectories to vary with class position and, specifically, with the form of employment relations in which individuals are involved (for earlier research, see Goldthorpe and McKnight, 2006; Bukodi and Goldthorpe, 2019: ch. 1).<sup>2</sup>

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The relative importance of different forms of social inequality in relation to different outcomes remains a matter of ongoing enquiry. In research into children’s educational attainment (Bukodi and Goldthorpe, 2013); Bukodi, Erikson and Goldthorpe, 2014; Bukodi, Goldthorpe and Zhao, 2021), it has been found that parental income is of generally less importance than parental class and that in certain respects – notably educational choice given previous performance – parental education and social status are more important than parental class, and that with these other factors included in the analysis, income becomes inconsequential.

<sup>2</sup> YK’s work thus also has a different focus from that of other recent research on the relation between class and earnings which is concerned with earnings inequality between classes, with whether or not this is widening over time, and with its contribution to earnings inequality overall. See, e.g., Albertini, Ballarino and De Luca (2020), Goedemé et al. (forthcoming).

Where problems of work monitoring and human asset specificity are low, as with workers in low skill, routine jobs, employers can resort to what may be called a basic labour contract – something close to a spot contract for labour – under which, through piece- or time-rate systems, pay is exchanged for discrete amounts of work done, and on what need be only a short-term basis. In this case, there is then no expectation that earnings will increase over working life – other than as a result of general economic growth – except perhaps during a short initial period in which such skills and experience as are called for are built up. In contrast, where problems of work monitoring and human asset specificity are high, as with managerial and professional employees exercising delegated authority and specialised expertise, a different form of contract is required: in particular, in order to deal with principal-agent problems and the danger of losing employees not readily replaceable from an existing labour pool. A form of contract is thus favoured involving a ‘service relationship’, in which employees’ long-term commitment to organisational goals is sought through ‘compensation’ in the form of a salary, usually on an incremental scale, together with clear possibilities for career advancement. In this case, earnings would then be expected to rise steadily over working life up to a relatively late stage. Lazear (1995: 39) refers in this connection to ‘deferred payment’ contracts, which entail employees being paid less than their productivity warrants when they are young but more as they get older. The contract thus discourages ‘hasty quits’, strengthens the threat of dismissal, and gives an incentive to employees to stay with their organisations up to the point at which their compensation will reach peak value.

On the basis of a longitudinal and intergenerational Israeli dataset, including information on class position and long-term earnings, YK are able to show that their theoretical expectations are largely met. From growth curve analyses, distinctive earnings trajectories linked to class do emerge (2020: Figure 3). One is for manual workers in the low skill, routine jobs of EGP Classes

IIIb and VIIa, in which, after a slight initial rise, earnings remain essentially flat from around age 35 onwards. A second is for the managerial and professional employees of EGP Classes I and II, in which earnings rise steadily from entry into work up to around age 50, if not beyond. And a third is a trajectory of intermediate shape for employees in lower non-manual, supervisory and technical grades and skilled manual workers, as covered by EGP Classes IIIa, V and VI, whose employment contracts tend to involve some compromise between the logics of the basic labour contract and the service relationship.

YK thus conclude that analyses based on individuals' class – for which data are far more readily available than on their long-term earnings – can give a good, and a theoretically informed indication of how their level of earnings is likely to evolve over time. And in turn in mobility studies, class analyses are an effective means of showing, in this as in other respects such as earnings security and stability, the extent to which, to return to KTS's phrase, 'long-term socioeconomic standing', over and above inequalities in current income levels, is intergenerationally transmitted.

In the present paper, we seek to build on YK's work in examining how far the theory that underlies the EGP class schema or, more precisely, a direct successor, the European Socio-Economic Classification (ESEC) (Rose and Harrison, 2010), is likewise reflected in evidence on earnings trajectories, but when two further considerations are taken into account.

First, it would seem desirable to extend analyses cross-nationally. Esping-Andersen has complained (1993: 2, 8) that class theory tends to assume that 'classes emerge out of unfettered exchange relations, be it in the market or at the "point of production"' and is thus 'nested in an institutionally "naked" world.' We would ourselves see advantage in theory that thus aspires to a high level of generality. Nonetheless, the question evidently arises of how far

the theory we are concerned with, which focuses specifically on exchange relations in both the market and at the point of production, does hold good – as we would wish to suppose – across different institutional contexts. Analysing the association between class and earnings trajectories cross-nationally is the obvious way to proceed and we treat this association across a range of western European countries.

Second, it would further seem desirable to bring education into empirical analyses. From the standpoint of human capital theory (Mincer, 1970; Becker and Tomes, 1979), human capital in the form of educational attainment reflects both individuals' actual *and potential* productivity. It might then be expected that the greater individuals' human capital investment in education, the higher the probability that their earnings will rise over the course of their working lives as their productive potential becomes more fully realised. And it could in turn be held that demonstrated differences in earnings trajectories will thus primarily reflect employees' educational levels rather than the forms of employment contract under which they work. What needs therefore to be investigated is how far class differences in earnings trajectories still show up when individuals' educational qualifications are taken into account.

## **Data and variables**

To pursue the objectives indicated, the dataset we would ideally wish to have would be one comprising cross-national and longitudinal data on the earnings of individuals over the course of their working lives, data that would allow their class positions to be established on the basis of ESEC, and data on their educational level. However, so far as we are aware, no such dataset



exists. We have therefore to accept a number of limitations on what we can, for the present, achieve.

Our analyses are based on the 2017 European Union Statistics on Income and Living Conditions (EU-SILC) survey. From this source, we can obtain data on the earnings of individuals over a twelve month ‘income reference period’, and on their economic status, occupation, education and various other socio-demographic characteristics. The income reference period is defined as the calendar year before interview in all national cases except that of Ireland, where it refers to the twelve months directly preceding interview.

The EU-SILC survey does contain a longitudinal element in that it is based on rotating panels. But individuals remain in a panel usually for no more than four years before the panel is replaced, and this is too short a period for our purposes. We have therefore to confine ourselves to a single year of the survey<sup>3</sup> and a first limitation on our analyses thus arises. The earnings trajectories with which we will be concerned are not those, as with YK, that particular individuals have experienced over the course of their working lives – in which they perhaps changed their class positions. They are, rather, those that emerge from tracing the median level of earnings of individuals who at certain ages were in certain classes, regardless of whether or not they were in the same class at some earlier age. A possible advantage is that any evidence

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<sup>3</sup> The design of the survey means that some individuals will be present in the data for only one year but others for up to four or more, and it is not possible to identify individuals in this regard. This means that the pooling of data across years – which we had originally envisaged in order to obtain larger Ns – is effectively precluded because it is not possible to allow for the repeated observations of the same individuals that would arise (Iacovou, Kaminska and Levy, 2012: section 5.2). This situation cannot be changed as EU data protection rules prevent the possibility of linking of individuals across the longitudinal and cross-sectional components of the survey.

we obtain of consistent associations between class and earnings trajectories could be seen as robust to worklife mobility effects.<sup>4</sup>

Further, the EU-SILC earnings data relate to individuals at all levels of labour market activity, whereas we wish, as an initial test of our theoretical expectations on the association between class position and earnings trajectories, to focus on earnings *as they would be* from full-time and continuous employment. As earlier indicated, we would also expect – and believe it to be the case – that an association exists between class position and the degree of security and continuity of employment. But we see it as important to have the possibility of showing that the results we obtain on earnings trajectories are independent of any effects on these trajectories that might result from this further association.

In this regard, a problem then arises with part-time workers in that the EU-SILC survey does not provide information on the number of hours that they were working over the whole of the income reference period – only the number at time of interview. In the case of men, we circumvent this problem by taking as our target population those men aged 21-64 who had at no point in the income reference period worked part-time but who in this period had been employed full-time for at least one month. With those who were, for any reason, out of employment during this period, while otherwise working full-time, we then adjust their earnings accordingly in order to preserve, so to speak, ‘the rate for the job’. Thus, if a man worked for only six months out of the twelve, his reported earnings are multiplied by 2. However, in the case of women, no comparable solution exists. Disregarding those who had

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<sup>4</sup> It should be observed that although YK work with the earnings trajectories of particular individuals, they too do not make any link with possible career mobility. The class positions of the individuals in the birth cohort they consider are fixed as those they held at the 1995 Israeli census when aged 35-44.

worked part-time during the income reference period would of course amount to a far more serious omission than in the case of men.<sup>5</sup> And, further, given the limited information on hours worked, we have no reliable basis for adjusting the earnings of women part-timers to get 'the rate for job', in the same way as we do with men who have gaps in their full-time employment. The findings YK report for Israel do not in fact show any marked differences by gender in the association between class and relatively long-term earnings trajectories, and likewise those reported for Sweden by Bihagen (2008). However, in cross-national perspective, the wide variation that exists in the numbers of women who work part-time and in the degree of their employment intensity has to be recognised, and we are not in their case able to achieve comparability in earnings data of the kind that would allow us adequately to pursue our primary research question: that of whether the association between class position and earnings trajectories shows a cross-national commonality. We have, therefore, to exclude women from our analyses and have in turn to re-emphasise that what we attempt here is very much a first step. Even if our theoretical expectations of such a commonality are confirmed with the earnings of men working full-time, the question remains open of whether they also hold with women or indeed with workers more generally who are not employed on a full-time and continuous basis.

Finally, we have to note that there has been much discussion of the quality of EU-SILC data and, in particular, of the extent to which cross-national comparability has been achieved, given that comparative findings do not result from 'harmonised' interview schedules but in general from

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<sup>5</sup> And it would thus in too many countries lead to unduly small Ns. Data on differences in employment intensity by gender and class across the 14 countries we consider are shown in Appendix 1.

‘guided output-harmonisation’ (see e.g. Verma, 2006; Iacovou, Kaminska and Levy, 2012).<sup>6</sup> We limit our attention to Western European countries since in the case of the former state socialist societies of East-Central Europe we do not have detailed information on the ways in which employment relations have evolved in the course of their widely differing transitions to market economies. But, on grounds of data quality, we have also found it necessary to exclude several Western European countries from our analyses, including the UK and Germany. In the case of the UK, data on respondents’ educational attainment are missing to a serious extent – around 50%; and in the case of Germany, the construction of social classes – as described below – led to class distributions that were widely out of line with those available from other sources.<sup>7</sup> Our analyses are then based on the following 14 countries: Austria, Belgium, Denmark, Greece, Spain, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal and Sweden.

We leave out of our analyses the self-employed workers and small employers covered by ESEC Class 4, since the issues that we are concerned with relate only to the earnings of employees,<sup>8</sup> and we also leave out all individual cases with missing values on any of the variables we use, as

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<sup>6</sup> On the comparability of the EU-SILC income variables specifically, to which most attention would seem to have been given, see Goedemé and Trindade (2020).

<sup>7</sup> For Germany, occupational data are only available on a much more aggregated level than for other countries, resulting in a loss of precision in estimation of the distribution by ESEC. The same applies with Malta, which we therefore also exclude. Cyprus is excluded because we were unable to find independent data on class distributions against which we could check the distribution we derived from EU-SILC data. In general, the problems of comparability that arise would seem more serious with social class construction than with earnings (see further Goedemé, Paskov and Nolan, 2021).

<sup>8</sup> ESEC Class 1 does include some small numbers of those classified as ‘large’ employers, and ESEC Classes 1 and 2 of those classified as self-employed professionals. However, we retain these individuals in our analyses. In the case of higher-level managers and professionals, remuneration can involve both salary and proceeds from enterprises or partnerships, with official employment status being then primarily influenced by legal and fiscal considerations. See further Goldthorpe (1987: pp. 40-1).

described below. We then have a sample of 43,719 men in total, with national samples ranging in size from a minimum of 1,146 for Denmark to a maximum of 7,918 for Italy. Appendix 2 gives the analytical sample size for each country and shows in detail how it was arrived at.<sup>9</sup>

EU-SILC surveys involve a complex sampling procedure that, wherever possible, we take into account by applying, alongside the standard weights provided in the dataset, sample design variables on stratification and clustering (Goedemé, 2013).

The dependent variable of our analyses is then full year equivalent gross earnings for men aged 21-64 over the EU-SILC 12-month income reference period. Earnings cover cash and 'near cash' income of various kinds. More specifically, the following are included: wages and salaries, all overtime and bonus payments, allowances for working in remote locations and for transport to and from work, and also all payments made by employers to supplement social insurance schemes where such payments cannot be separately identified as social benefits. Earnings data are top-coded at the 99.9<sup>th</sup> percentile: i.e. data points in the upper 0.1% of the earnings distribution are replaced by the value at the 99.9<sup>th</sup> percentile. Appendix 3 shows the median value of our dependent variable for the pooled sample of 14 countries and separately for each individual country. In all of our analyses we work with the natural logarithm of earnings, in order to correct for the positive skew of the distribution. In analyses of the pooled sample of

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<sup>9</sup> Certain countries – Denmark, Finland, Netherlands, Norway and Sweden – apply a 'selected respondent' sampling approach. In these countries, most information is taken from official registers and only one person in each household is interviewed (Iacovou, Kaminska and Levy, 2012). As a result, information needed to construct social class (ESEC) is only available for the 'selected respondent'. In principle, this type of missingness, in occurring by design, deliberately and randomly (Goedemé, 2019), should not systematically bias research results in the way that missingness due to non-response might well do. Hence, observations for non-selected respondents are not included in the analysis of missingness in Appendix 2.

14 countries, earnings are adjusted according to purchasing power parity, in order to ensure comparability of earnings across countries.<sup>10</sup>

The key explanatory variable of our analyses is social class, which we operationalize through ESEC. Like the EGP schema, ESEC is based on employment relations and is designed specifically for the purposes of international comparisons. To apply ESEC to EU-SILC data, we draw on the procedure developed by GESIS (2016) and further adjusted by Goedemé et al. (2021).<sup>11</sup> First, we create variables for respondents' employment status, indicating whether they are employers, self-employed or employees and then, for employees, on whether or not they have some form of supervisory or managerial role in their employment. Second, we code occupational data to a common classification, the 2-digit version of ISCO-08. On this basis, we can then allocate the men in our samples to a 'reduced' seven-category version of ESEC. However, it turns out that in several countries the proportion of men in Class 3 is less than 5% and it is only a little over this figure in our pooled sample. In all of our analyses, we therefore collapse Class 3 and Class 5 to form a single 'intermediate' class between Classes 1 and 2, that can be taken as representing the managerial and professional salariat, and Classes 6 and 7, that can be taken as representing the wage-earning working class. Table 1 shows the distributions by the classes that we thus distinguish for the pooled sample and for each country sample.<sup>12</sup>

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<sup>10</sup> Given our concerns over data quality, we show in Appendix 4 median annual earnings data from the European Structure of Earnings Survey (SES) that refers to enterprises with at least 10 employees operating in all areas of the economy except public administration, alongside a comparable version of median annual earnings derived from our EU-SILC data for each country we consider. A reasonably good correspondence can be seen.

<sup>11</sup> We depart from this procedure only in order to make it possible to include in our samples those individuals who were not in employment at time of interview but who had been in full-time employment for at least one month in the income reference period.

<sup>12</sup> Again as a check on data quality, we compare in Appendix 5 the class distributions we derive from EU-SILC with ones derived from the European Social Survey. In general, a good alignment can be seen,

## \*\*\* TABLE 1 \*\*\*

Given that we aim to examine the relationship between social class and earnings trajectories by age, our definition of age groups is of importance. We code respondents to four such groups: 21-34, 35-44, 45-54 and 55-64. A finer grouping would have been desirable but would in too many cases have led to unduly small Ns.

As explained in the Introduction, we wish also to bring individuals' education into our analyses. We create a three-fold variable of highest level of educational attainment: no qualifications or no more than lower secondary; upper secondary qualifications; and post-secondary/sub-tertiary or degree-level qualifications.

Finally, in all our statistical modelling we include a number of control variables. Dummies are included for living in marriage or cohabitation, for having at least one child resident in the household, and for being of foreign birth. A variable for the industry of the organisation in which respondents were employed is also included. This distinguishes extractive industry, manufacturing and construction; trade and accommodation; professional services; public services; and other services.<sup>13</sup>

## Results

We begin by showing in Figure 1 the observed trajectories of median log gross full-year equivalent annual earnings by age and by social class for our pooled sample, with each country

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except that our procedure with EU-SILC tends to increase the numbers in Class 1 and, especially, in Class 2, at the expense of those, mainly, in Classes 3 and 5 and Class 7.

<sup>13</sup> Distributions of the variables of age, education and controls are shown in Appendix 6.

being weighted by the average sample size ( $N = 3,123$ ). These trajectories prove to be on much the same lines as those found by YK in applying the EGP schema to Israeli data. With men in the youngest age group, class differences in earnings are on expected lines but are relatively narrow. However, these differences steadily widen across older age groups. This comes about, as can be seen, in the following way. For men in Classes 6 and 7, broadly the wage-earning working class, some increase in earnings evident over early working life then tends to fade away; but for men in Class 1 and to a lesser extent in Class 2, the higher and lower levels of the managerial and professional salariat, earnings rise, more sharply, and across all age groups. The trajectory for men in the collapsed intermediate classes, Classes 3 and 5, is itself intermediary.

\*\*\* FIGURE 1 \*\*\*

However, these findings, while of interest in themselves, do of course leave entirely open the two questions on which, as indicated in the Introduction, we wish to focus: first, that of the extent to which a cross-national commonality exists in the association between class and age-earnings trajectories and, second, that of the possible influence of education, independently of class, in shaping these trajectories.

In order to treat these questions, we need to model the observed data. We fit a quantile median regression model (Koenker and Bassett, 1978) for full-year equivalent gross annual earnings, in which class and age and an interaction between them are the main explanatory variables along with education, and in which the control variables previously described are also included.<sup>14</sup>

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<sup>14</sup> Selection on individuals' unobservable characteristics may be an issue, as we only observe those who 'select themselves' into employment in different classes. In the absence of longitudinal data, a Heckman two-step selection model is commonly used to correct for such bias. However, there are serious challenges in adopting this approach for quantile, including median, regression (Koenker, 2017). Therefore, no selection correction is attempted.



Figure 2.1 shows the age-earnings trajectories by social class estimated under this model for the pooled sample, and Figure 2.2 shows the trajectories for each of our 14 countries separately.

\*\*\* FIGURES 2.1 and 2.2 \*\*\*

From Figure 2.1, it may be noted, first of all, that the estimated trajectories for the pooled sample closely match the observed trajectories of Figure 1: i.e. our model would appear to be, at least in an overall sense, a quite realistic one. Turning then to the trajectories for the individual countries as shown in Figure 2.2, some degree of cross-national variation is apparent. However, on closer inspection, it can be seen that leading features of the trajectories for the pooled sample are still largely replicated across countries. First, class differences in earnings are narrowest for men in the youngest age group while widening across older age groups. Only Luxembourg appears as a clear exception in this regard.<sup>15</sup> Second, the widening across age groups results primarily from the fact that, at least up to the oldest age group, the earnings trajectories for men in Class 1, the higher salariat, show a quite steep upward slope, and such a slope, if less marked, can also be generally seen for men in Class 2, the lower salariat.

The main variations on these features are then limited to the following. First, in a number of countries, the earnings trajectories for men in the salariat tend, though for the most part only very slightly, to turn downwards for the oldest age group. This is evident with Class 1 in Denmark, Ireland, Spain and Sweden, and with Class 2 in Belgium, Denmark, Finland, the Netherlands, Norway and Spain. Second, in several countries – Greece, Ireland, Luxembourg

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<sup>15</sup> Luxembourg is also exceptional in that, as can be seen, the earnings trajectory for Class 7 lies above that for Class 6. Questions of the degree of comparability that it has been possible to achieve in social class construction in general can therefore be raised.

and Spain – the trajectories for men in Classes 6 and 7 also show some continuing rise across the age groups, although a generally weaker one than with Class 1; and this is also the case for Class 6, but not for Class 7, in Norway and Sweden.

In the light of Figure 2.2, it is then possible to claim that under our model, in which level of educational qualifications is included, class differences in age-earnings trajectories across Western European countries do display some substantial degree of commonality. And such variation as does show up, as well as being rather slight, is for the most part variation on well-defined themes that are themselves not seriously inconsistent with the theory and the related conceptualisation of social class that, in the way earlier noted, inform ESEC.

There is, though, one further way in which we can check on how far the results we have so far presented are in line with this theory. With the model underlying Figures 2.1 and 2.2, the age-earnings trajectories that are estimated reflect the main effects of class, age and education together with the class-age interaction effect that is also included. In Appendices 7 and 8, the main effects of class and age are shown under a model in which the interaction effect is not included, and are largely as might be expected – except, perhaps, in that men in Classes 6 and 7 differ rather little in their earnings and that in a few countries the positive effect of age on earnings weakens somewhat in the oldest age group.<sup>16</sup> However, what is implied by the differences in employment relations that define classes under ESEC is that with the earnings trajectory of Class 1 – that which chiefly drives widening class differences in earnings with age – and also, if to a lesser extent, with the trajectory of Class 2, the interaction effects between class and age should be significant. Specifically, with those individuals in a service relationship,

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<sup>16</sup> Appendix 9 shows the effects on annual earnings of education and also of all the controls on annual earnings. These are, overall, much as would be expected.

a positive interaction should occur, such that the effect of their class position on their earnings *increases with age*, at least up to a certain point – or, in Lazear’s terms, as the ‘deferred payment’ element in their employment contract works out. In contrast, insofar as individuals are employed under some approximation to a basic labour contract, involving pay for more or less discrete amounts of work done and with no long-term commitment, no interaction effect of this kind should exist.

In Table 2, we show estimates under our model of the interaction effects in question for our pooled sample and separately for each of our 14 countries. The results reported in this table can be summarised as follows.

\*\*\* TABLE 2 \*\*\*

First, with men in the youngest age group and in Class 7 being taken as reference, for men in Class 1 interaction effects with age in relation to earnings that are significant, positive and increasing in strength are found for the pooled sample and likewise for four individual countries – Belgium, Italy, Portugal and Spain. With four further countries – Austria, Finland, France and Norway – this same pattern shows up except that the coefficient for the next-to-youngest age group, though positive, is not significant. And with another three countries – Denmark, the Netherlands and Sweden – this pattern is again found except that the coefficient for the oldest age group, though positive, and significant in the cases of the Netherland and Sweden, is weaker than that for the next-to-oldest. In other words, for 11 out of our 14 countries, class-age interaction effects on earnings are revealed that are in close approximation to what would be theoretically expected. Greece, where increasing interaction effects become significant only with the oldest age group, cannot be regarded as markedly out of line, and it is, again, Luxembourg and now also Ireland that are the only clearly deviant cases.

Second, for men in Class 2, results for the pooled sample are on the same lines as for Class 1, although, as would be expected, the interaction coefficients are less strong and their increase across the age groups less marked. At the same time, though, cross-national variation is somewhat more apparent than with Class 1. The pattern of interaction effects for seven of the 14 countries – Austria, Belgium, France, Italy, the Netherlands, Portugal and Sweden – does follow one or other of the three close variants distinguished in the case of Class 1, and Norway is not greatly different. But for three other countries that also followed one or other of these variants in the case of Class 1 – Denmark, Finland and Spain – no significant class-age interaction effects for Class 2 are apparent. It would then seem that in some number of countries, insofar as the lower-level managers and professionals of Class 2 are involved in a service relationship with their employers, this does not incorporate provision for earnings to rise more quickly than would be generally associated with age.<sup>17</sup> Greece and Luxembourg are likewise deviant in that no significant class-age interaction effects for Class 2 show up while the results for Ireland are again more markedly deviant.<sup>18</sup>

Third, with the remaining classes, class-age interaction effects appear in the pooled sample, though only weakly, with Classes 3 and 5 but are not significant in any of the countries taken separately, and with Class 6 they can be regarded as non-existent. In the case of Class 6 this is as expected, given the supposed prevalence of some approximation to a basic labour contract

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<sup>17</sup> It may in this connection be relevant that, as observed in note 12 above, our construction of Class 2 leads to the proportion of men included being generally larger than with the European Social Survey – and with therefore possibly greater heterogeneity in its composition.

<sup>18</sup> Ireland is also distinctive among the countries we consider in having not only a generally high proportion of men with post-secondary and tertiary educational qualifications but also in showing a very marked rise in this proportion in the 35-44 age group. The fact that with both Class 1 and Class 2 the class-age interaction effect is strongest with men in this age group may then reflect a process of career acceleration or, to revert again to Lazear, a shortening of the period over which the ‘deferral’ of payment in relation to productivity occurs.

among the workers covered. In the case of men in the two intermediate classes, the conclusion has to be that, while the mixed forms of employment relations which define their class positions may provide for a fixed salary and some expectation of long-term security of employment, they need not entail increases in earnings above those attaching simply to seniority (cf. Goldthorpe, 2007: 116-8,) and that will thus be captured in our model by the main age effect.

In sum, the results shown in Table 2 bring out the distinctiveness of the service relationship and especially in its fullest form as found with those in the higher-level managerial and professional positions constituting Class 1. It is not simply the case that these employees tend to earn more than others over the course of their working lives, as might be expected as a result of their superior human capital. In addition, the form of their employment contract gives them the realistic prospect of their earnings following a steadily rising curve up to a relatively late age.

By way of developing this last point, we can examine more directly how far differences arise in the age-earnings trajectories of men who are in the same class positions but who can be taken as having different levels of human capital – that is, in terms of educational attainment. In this regard, it is appropriate to concentrate on men whose employment relations stand in sharpest contrast: that is, those in Class 1 and those in Class 7. This means, however, that because of the limited numbers of men in these classes in countries where the sample size is relatively small, and further because of the very skewed educational distributions within these classes, we are unable to make reliable cross-national comparisons. We have to restrict ourselves to analyses based on our pooled sample (with, as always before, all countries being given equal weight).

We apply to this sample the same model as we have used previously except that we now drop the educational qualifications variable and in estimating age-earnings trajectories run the model separately for men with different levels of qualification, as follows. In the case of Class

1, we estimate the age-earnings trajectories of men with post-secondary/sub-tertiary and degree-level qualifications and of those with all lower qualifications. In the case of Class 7, we estimate the age-earnings trajectories of men with no or only lower secondary qualifications and of those with all higher qualifications. The results are shown, respectively, in the left- and right-hand panels of Figure 3.

\*\*\* FIGURE 3\*\*\*

With Class 1, it can be seen that that the trajectory for men with at least post-secondary qualifications lies always above that for men with only secondary qualifications or none – human capital evidently counts. However, both trajectories follow an upward curve and are more or less in parallel, at least up to the oldest age group when some slight widening occurs. With Class 7, it can likewise be concluded that human capital matters in that the age-earnings trajectory for men with at least higher secondary qualifications lies always above that for men with only lower secondary qualifications or none. But, again, the two trajectories run essentially in parallel, rising slightly with the youngest age group but then over the later age groups remaining more or less flat.

What is therefore rather clearly indicated is that the shape, as opposed to the level, of employees' age-earnings trajectories is primarily influenced not by their human capital, at least as represented by educational qualifications, but rather by the form of their employment relations. Consistently with the theory that informs ESEC, employees involved in a service relationship in its fullest form will, through the logic of this relationship, tend to benefit from increasing earnings over the greater part of their working lives, while employees involved in some close approximation to a basic labour contract will not, given its logic, experience such an increase – and, in both cases, regardless of their level of qualification. Educational

attainment is of course a major factor in determining in which class positions individuals find employment; but it is the employment relations that define these positions that then take over in shaping the age-related trajectories that their earnings can be expected to follow.

## Conclusions

In this paper our aim has been to contribute to ongoing discussion concerning the use of measures of social class, rather than of income or earnings, in analyses of social inequality and mobility. We pursue the argument that while in such analyses class may be taken as a proxy for long-term earnings, in the sense of earnings as summed over a period of years, it is of greater importance in enabling differences to be brought out in the trajectories that earnings tend to follow over the course of working life. Where class is treated on the basis of the EGP schema or likewise of ESEC, individuals' class positions are taken to be determined by the employment relations in which they are involved. And it is differences in these relations that can then be seen as the source of differences in age-earnings trajectories associated with class – just as they can be shown to be also the source of class differences in the security and stability of earnings. Insofar as problems of work monitoring and human asset specificity arise for employers, different forms of relations with employees are called for, ranging from approximations to spot contracts for labour to what has become known as a service relationship, expressed in contracts that aim to link employees' economic futures to their commitment to organisational goals. With the former, a largely flat age-earnings trajectory is to be expected; with the latter, a trajectory that rises steadily at least to a relatively late age.

Previous research has tested the theoretical arguments here involved in particular national cases. We move on to a cross-national approach so as to examine how far a cross-national commonality in class differences in age-earnings trajectories could be said to exist. And we also seek to take account of any effects on such trajectories that may follow from individuals' human capital, in the form of their educational qualifications, independently of their class positions.

We model data from EU-SILC sample surveys in 14 Western European countries, focussing on the full year/full-time equivalent gross annual earnings of men. We distinguish what can be thought of as the higher and lower levels of the managerial and professional salariat, ESEC Classes 1 and 2; the higher and lower levels of the wage-earning working class, ESEC Classes 6 and 7; and an intermediate class comprising ESEC Classes 3 and 5. And we also include in our model a three-level variable of educational qualifications.

What we find is that although the age-earnings trajectories that can thus be estimated for different classes do reveal some cross-national variation, there are major features, of a theoretically expected kind, that are evident with our pooled sample and that regularly recur in individual countries. Class differences in earnings are almost always at their narrowest for men in the youngest age group that we define but then widen across older age groups. And this occurs primarily because the earnings of men in Class 1, and to lesser extent of those in Class 2, show a marked rise with age while the earnings of men in other classes rise far less sharply or remain flat. The national variations that do show up can then be regarded as being in most cases only rather minor variations on these themes.

We can, moreover, provide further confirmation that these results are in line with what is implied by the theoretical basis of ESEC. With men in the youngest age group and Class 7 being taken as reference, we show that with men in Class 1, involved in a service relationship in its



fullest form, and, if somewhat less surely, with men in Class 2, the sharper rise of earnings with age that occurs than with men in other classes is in fact driven by interaction effects between class and age; or, in other words, by the effect of class position on earnings increasing with age. Further, and again as might be expected, with Classes 3 and 5 such interaction effects, while weakly evident on the basis of our pooled sample, do not appear as significant in any individual nation, and in the case of Class 6 are not present.

Finally, by focusing on men in Class 1 and Class 7 and working with our pooled sample, we are able to examine more directly how far class differences in age-earnings trajectories might be influenced by employees' human capital. Distinguishing within these two classes between men with higher and lower levels of educational qualification, we show that with both classes alike the age-earnings trajectories of those with higher qualifications lie above those with lower qualifications but that the shapes of these trajectories differ little with level of qualification. With Class 1, men at both levels have rather sharply rising age-earnings trajectories, while with Class 7 men at both levels have trajectories that rise far less, and especially after the youngest age group. The clear indication then is that these divergent trajectories are primarily shaped by individuals' class positions, as defined in terms of their employment relations, rather than by their human capital – however important the latter may be in determining the class positions that they hold.

In sum, we have provided evidence that class, as conceptualised with ESEC, following on the EGP schema, is associated with differing age-earnings trajectories for men in the population we have defined, in ways that show a large measure of cross-national commonality. Class can be regarded as more than just a possible proxy for long-term or lifetime earnings. Individuals' class positions provide a good indication of how their earnings are likely to develop over the course

of their working lives, and patterns of advantage and disadvantage are revealed in this regard, in addition to those that exist in levels of current earnings or in earnings as accumulated over some period. The cross-national variation that shows up is for the most part variation on fairly well-defined themes, and such wider deviations from these themes as occur tend to be concentrated, whether on account of data problems or for substantive reasons, in only one or two national cases. What can be regarded as the logic of the different forms of employment relations arising out of problems of exchange in the labour market and at the point of production and that define different class positions would appear to have a force, at least for men working full-time, that, *pace* Esping-Andersen, is rather little affected by national institutional or other specificities. However, whether the same holds in the case of employees, and in particular of women, working on part-time contracts and possibly with very variable hours, where we have not found it possible to consider full-time equivalent earnings, is a question that must remain undecided until relevant data become available.

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## Tables & Figures

TABLE 1: Distribution (%) of men aged 21-64 in full-time employment by the European Socio-Economic Classification (ESEC) <sup>(a)(b)</sup> in pooled sample and in individual countries

	<i>Class 1</i> : Large employers, higher grade professionals and managers	<i>Class 2</i> : Lower grade managers, higher grade technicians and supervisors	<i>Classes 3 &amp; 5</i> : Intermediate occupations <sup>(c)</sup> , Lower supervisors and lower technicians	<i>Class 6</i> : Lower services, sales, clerical and technical occupations	<i>Class 7</i> : Routine occupations	Total	N
Pooled sample <sup>(d)</sup>	19.1	30.0	16.2	20.7	14.1	100.0	43719
Austria	16.0	29.7	26.2	17.9	10.2	100.0	2391
Belgium	19.9	33.3	16.3	17.8	12.7	100.0	2062
Denmark	22.8	29.0	14.7	20.8	12.7	100.0	1146
Finland	23.1	26.4	8.6	25.5	16.5	100.0	1857
France	19.1	31.1	19.6	15.7	14.4	100.0	3991
Greece	16.5	20.9	15.9	28.4	18.3	100.0	5738
Ireland	27.6	17.4	19.3	15.9	19.8	100.0	1604
Italy	11.4	28.9	17.3	25.7	16.8	100.0	7918
Luxembourg	19.3	32.2	16.0	19.3	13.2	100.0	2173
Netherlands	29.9	36.3	13.4	13.2	7.1	100.0	2101
Norway	25.3	36.0	13.0	17.7	8.1	100.0	1582
Portugal	13.9	22.6	16.1	29.8	17.6	100.0	4784
Spain	10.9	22.8	15.8	29.3	21.2	100.0	5096
Sweden	18.4	35.2	10.2	24.2	12.1	100.0	1276

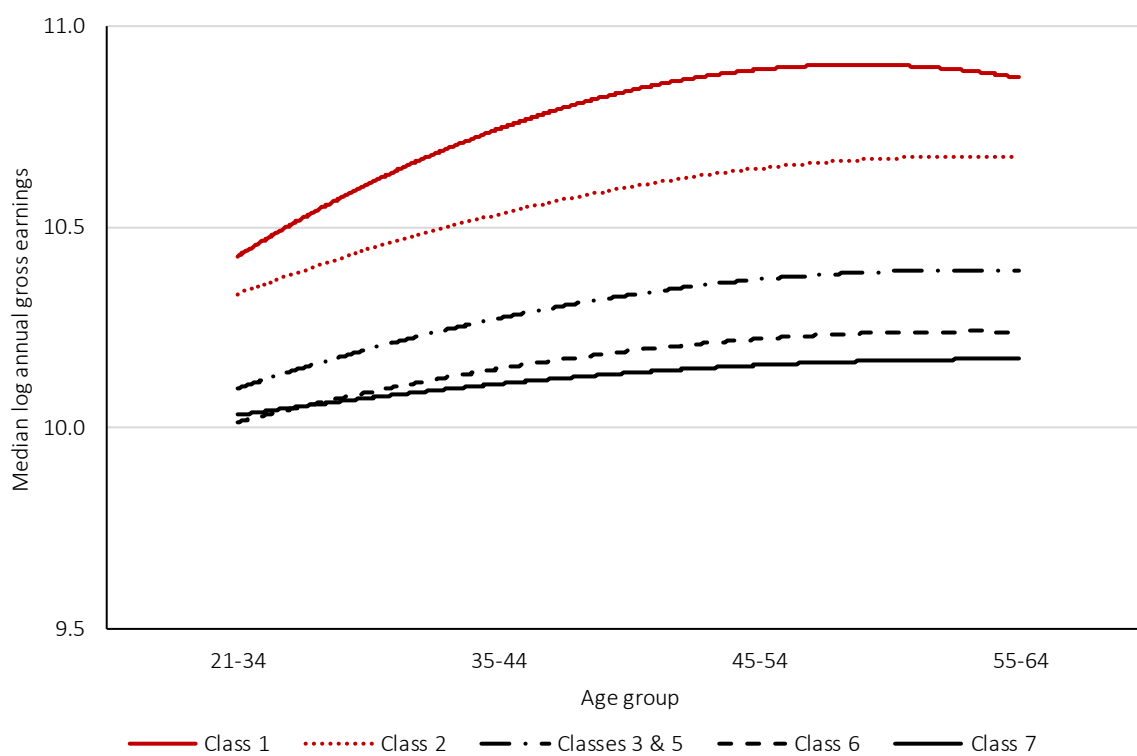
Notes

(a) Employed at least one month in past year

(b) Class 4 - small employers and own account workers - is excluded

(c) Intermediate occupations comprise mainly ancillary professional and administrative employees

FIGURE 1: Observed median log gross full-year equivalent annual earnings across age groups by social class, for men aged 21-64 in full-time employment - pooled sample <sup>(a)(b)</sup>

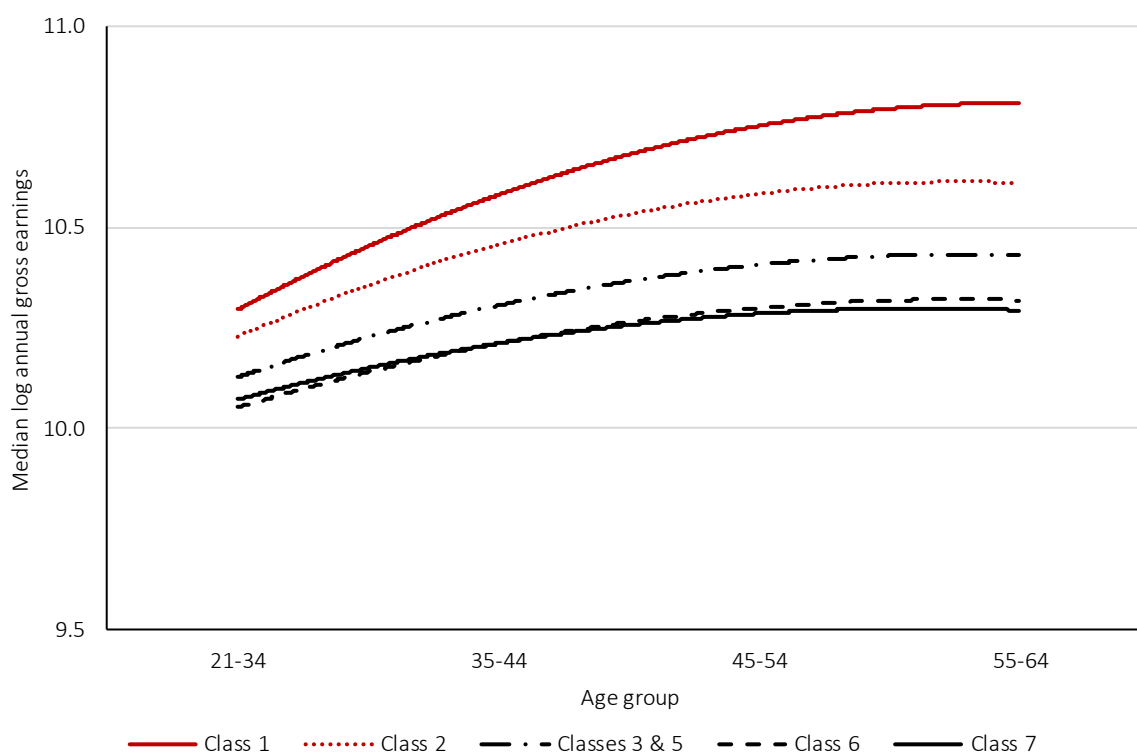


Note

(a) Pooled sample: weighted using average sample size (N=3123) per country

(b) Curves are smoothed using a quadratic function

FIGURE 2.1: Estimated median log gross full-year equivalent annual earnings across age groups by social class, for men aged 21-64 in full-time employment - pooled sample <sup>(a)(b)(c)</sup>



Note

(a) Pooled sample: weighted using average sample size (N=3123) per country

(b) Model includes the following explanatory variables: social class, age group, interaction between social class and age group, education, living in partnership, having a child aged 0-17 in household, foreign birth, industry

(c) Curves are smoothed using a quadratic function



FIGURE 2.2: Estimated median log gross full-year equivalent annual earnings across age groups by social class, for pooled sample and separately by country - men aged 21-64 in full-time employment<sup>(a)</sup>

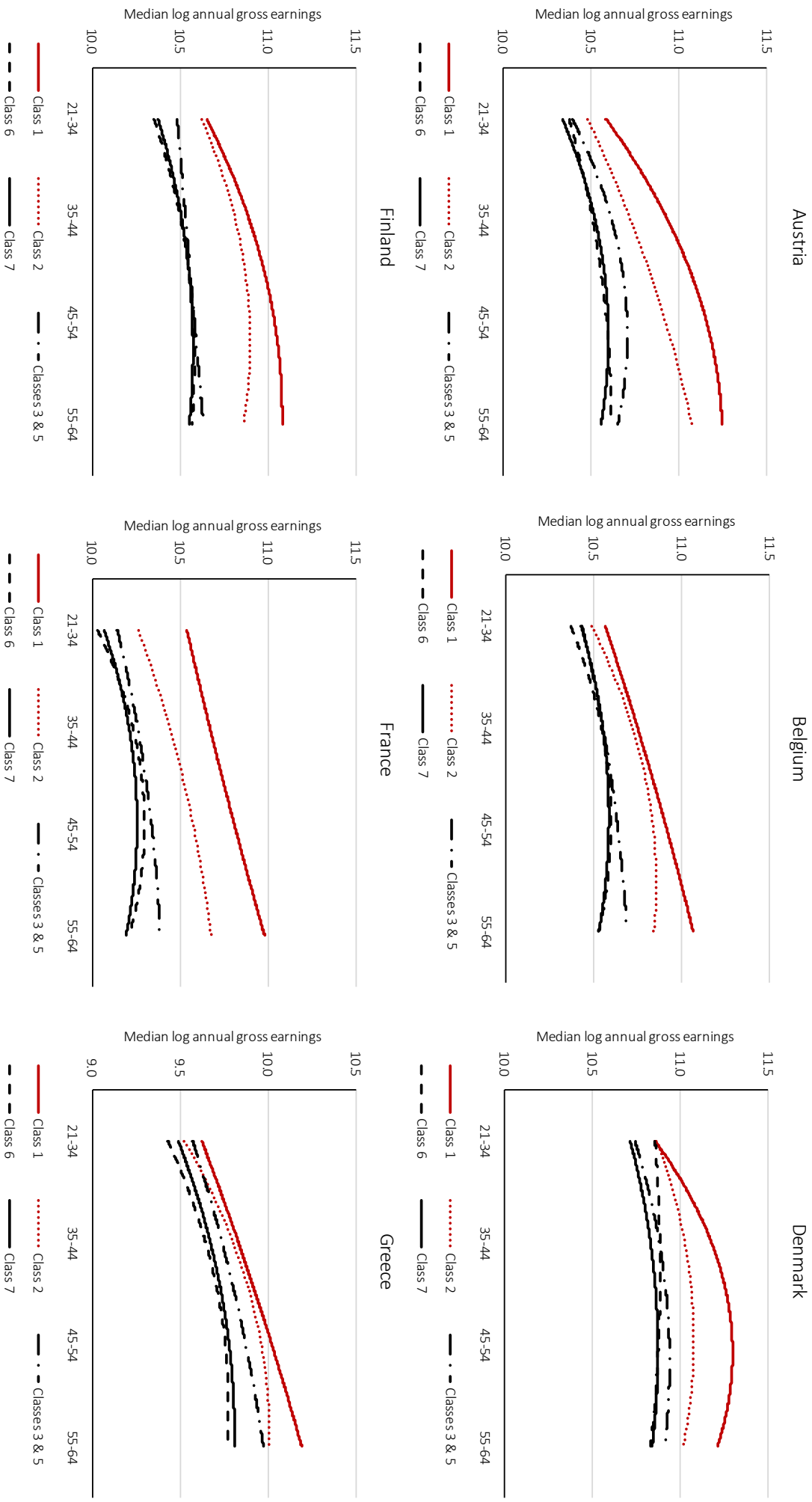


FIGURE 2.2: Cont.

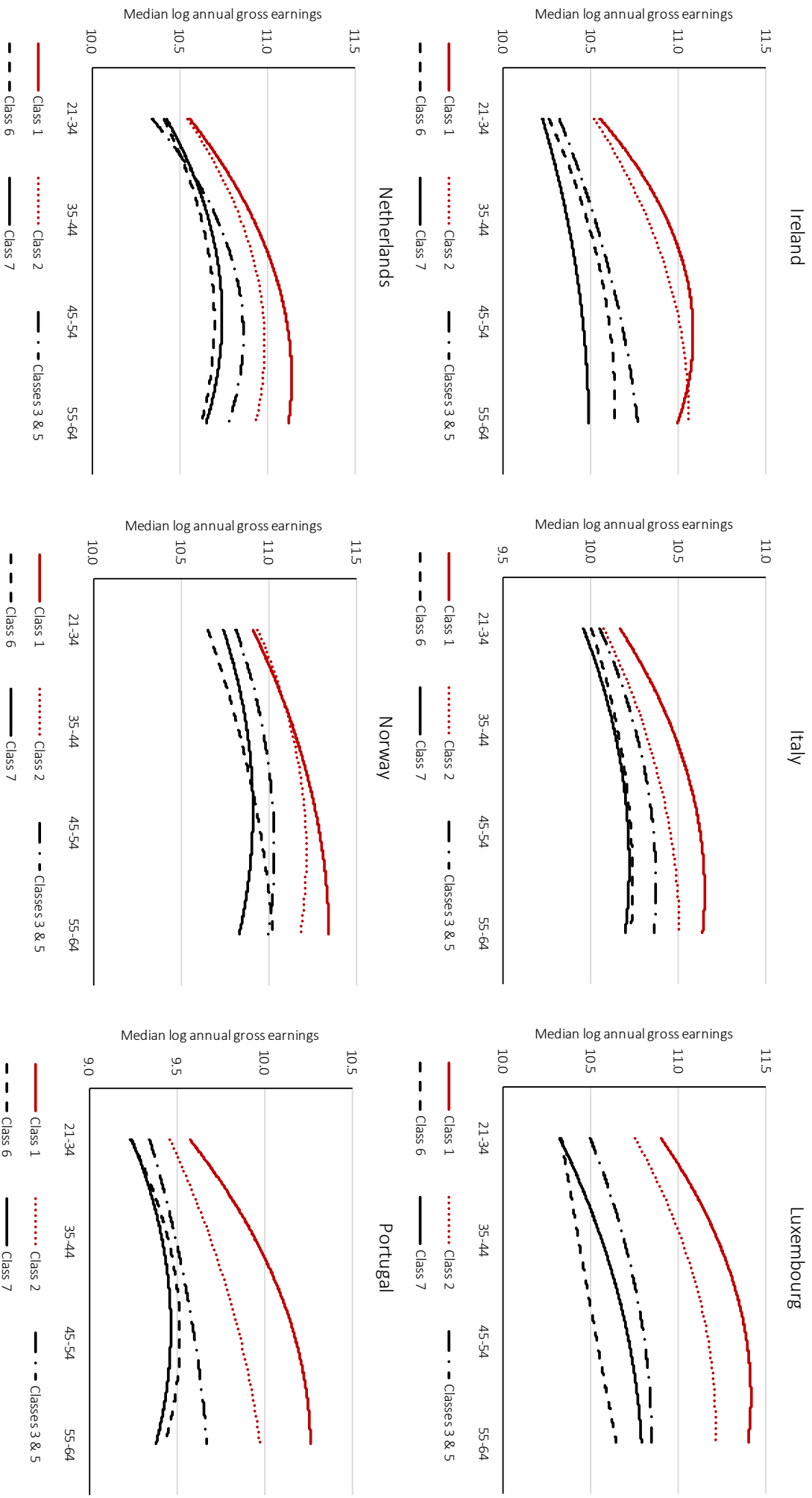
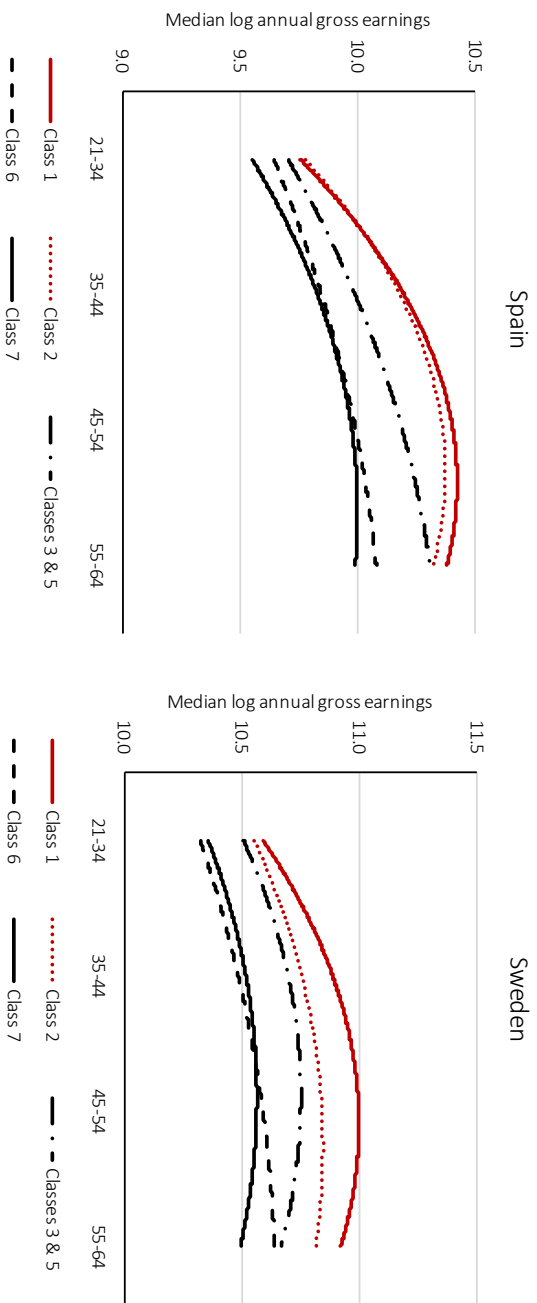


FIGURE 2.2: Cont.



Note

(a) Model includes the following explanatory variables: social class, age group, interaction between social class and age group, education, living in partnership, having a child aged 0-17 in household, foreign birth, industry

(b) Curves are smoothed using a quadratic function

TABLE 2: Interaction effects between social class and age<sup>(a)</sup> on log full-year equivalent gross annual earnings; men aged 21-64 in full-time employment - median regression coefficients<sup>(b)</sup>

	Class 1*age group...			Class 2*age group...			Class 3 & 5*age group...			Class 6*age group...		
	35-44	45-54	55-64	35-44	45-54	55-64	35-44	45-54	55-64	35-44	45-54	55-64
Pooled sample <sup>(c)</sup>	0.13 **	0.28 **	0.30 **	0.11 **	0.16 **	0.20 **	0.04	0.07 *	0.10 **	0.03	0.02	0.04
Austria	0.11	0.35 **	0.48 **	-0.05	0.18 *	0.35 **	-0.01	0.03	0.05	-0.12	0.00	0.00
Belgium	0.13 *	0.19 *	0.49 **	0.17 *	0.21 **	0.32 **	0.06	0.05	0.28 *	0.09	0.05	0.09
Denmark	0.27 *	0.35 *	0.19	0.14	0.16	0.14	0.25	0.04	0.17	-0.06	-0.05	-0.10
Finland	0.06	0.17 *	0.26 **	0.01	0.13	0.06	-0.15	-0.07	-0.03	0.00	-0.04	0.00
France	0.03	0.17 *	0.37 **	0.11 *	0.14 **	0.36 **	0.00	0.05	0.10	0.08	0.07	0.07
Greece	-0.03	0.05	0.12 *	0.08	0.04	0.09	-0.02	-0.09	0.12	0.06	0.02	0.06
Ireland	0.28 **	0.14 *	-0.05	0.35 *	0.11	0.24	0.12	-0.01	0.08	0.08	0.00	-0.07
Italy	0.18 **	0.27 **	0.45 **	0.10	0.14 *	0.26 **	0.09	0.10	0.14	0.00	-0.06	0.02
Luxembourg	0.16 **	0.03	0.21 *	-0.04	0.05	0.08	0.04	-0.04	-0.02	-0.15	-0.15	-0.08
Netherlands	0.31 **	0.48 **	0.42 **	0.22 *	0.24 **	0.20 *	0.12	0.17	0.19	-0.02	0.02	0.04
Norway	0.07	0.25 **	0.33 **	0.01	0.12	0.17 *	0.04	0.04	0.08	0.00	0.13	0.24 *
Portugal	0.13 *	0.58 **	0.65 **	0.00	0.27 **	0.35 **	-0.08	0.06	0.19	-0.01	0.04	0.02
Spain	0.20 *	0.23 *	0.25 *	0.04	0.12	0.05	-0.03	0.12	0.16	-0.07	-0.09	-0.06
Sweden	0.14	0.34 **	0.26 *	0.15 *	0.25 **	0.24 **	0.10	0.07	0.10	-0.02	0.11	0.17

Notes

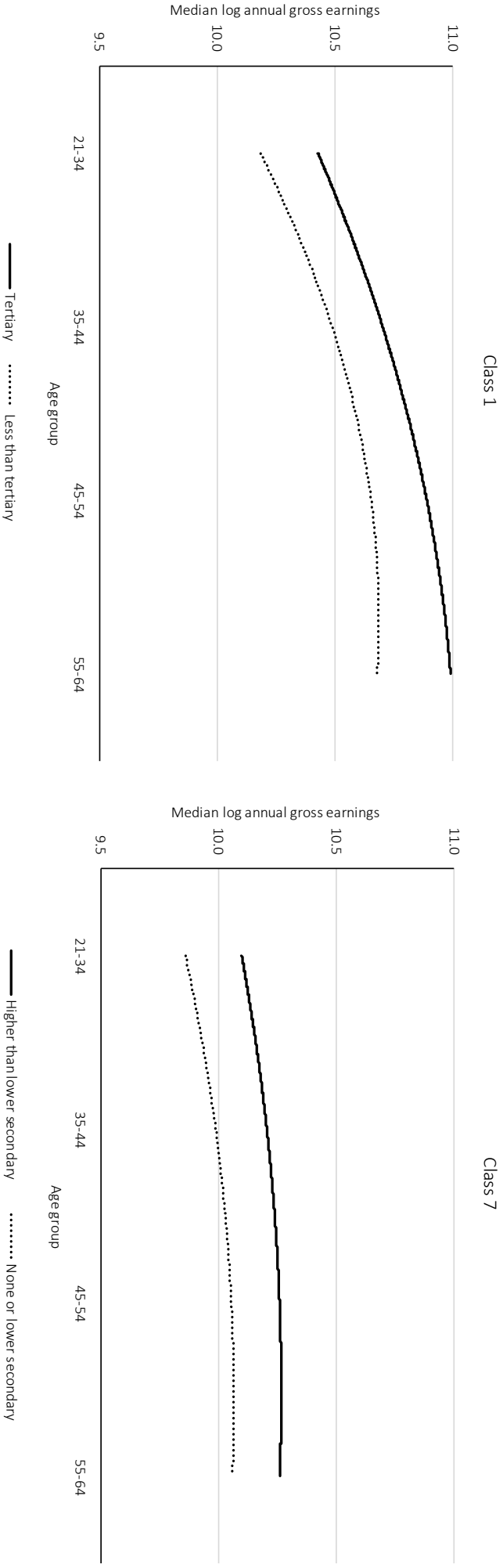
(a) Reference: individuals aged 21-34 in Class 7

(b) Other explanatory variables in the model: education; living in partnership, having a child aged 0-17 in household, foreign birth, industry

(c) Pooled sample: weighted using average sample size (N=3123) per country

\*\* p&lt;0.01, \* p&lt;0.05

FIGURE 3: Estimated median log gross full-year equivalent annual earnings in Class 1 and Class 7 across age groups, for men aged 21-64 in full-time employment with differing levels of educational qualifications - pooled sample (a)(b)(c)

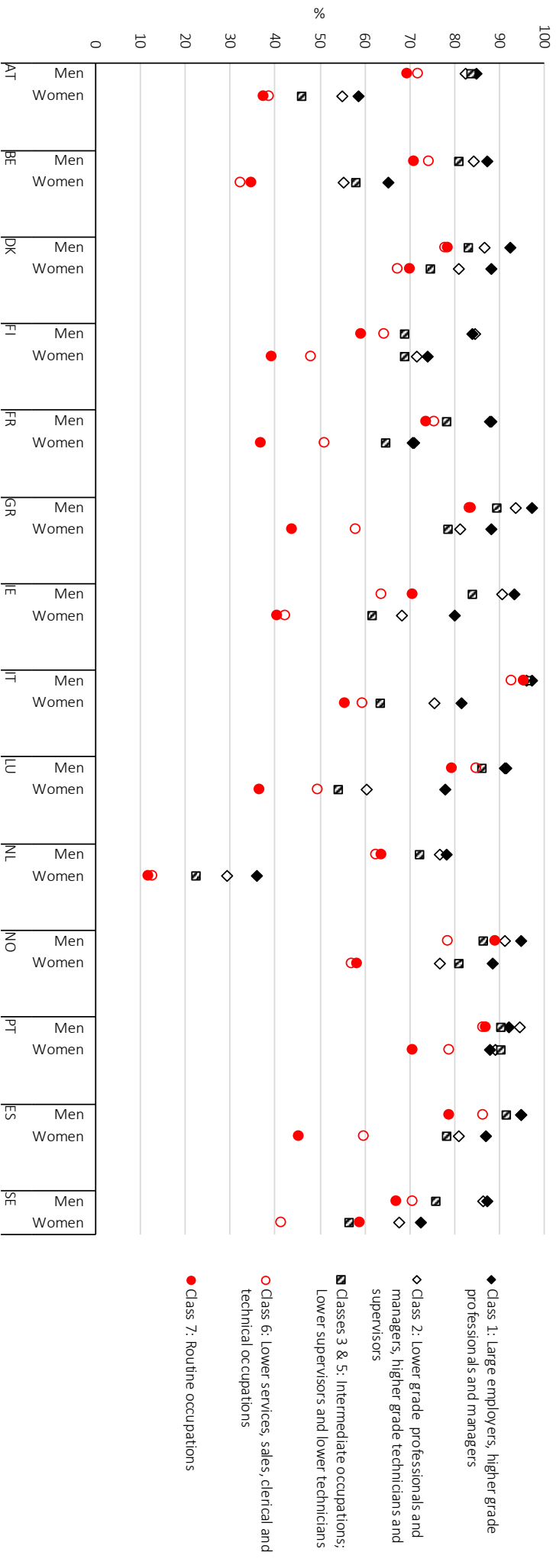


Note

- (a) Pooled sample: weighted using average sample size (N=3123) per country
- (b) Model includes the following explanatory variables: social class, age group, interaction between social class and age group, living in partnership, having a child aged 0-17 in household, foreign birth, industry. Model is ran separately for men with differing levels of educational qualifications.
- (c) Curves are smoothed using a quadratic function

## Appendices

APPENDIX 1: Employment intensity in income reference period: % of men and women worked full-year/full-time, by ESEC, separately by country



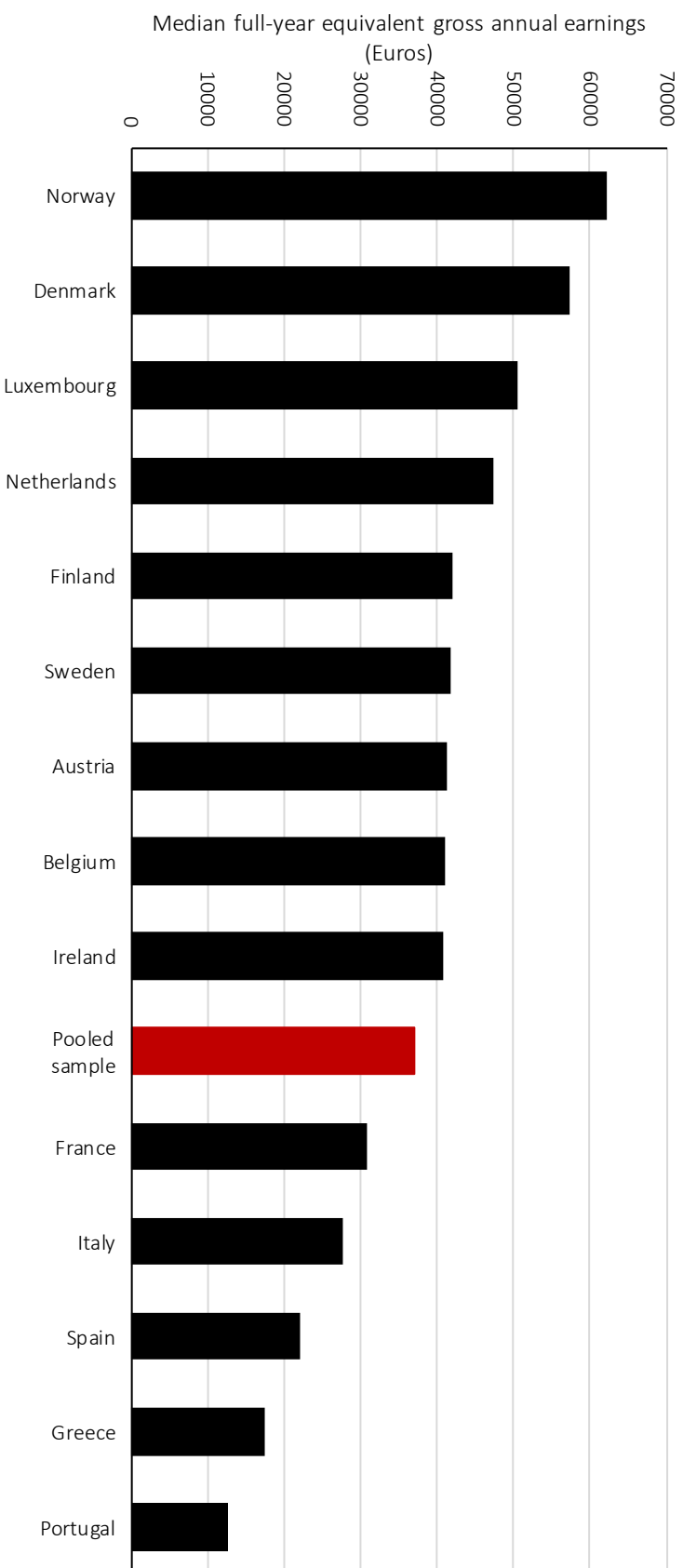
## APPENDIX 2: Analytical sample sizes and cases lost due to missingness, by country and variable

	Initial sample <sup>(a)</sup>	Excluding men in part-time employment	Cases lost as variables added progressively											
			Earnings		Social class		Education		Industry		Demographic variables			
			N	%	N	%	N	%	N	%	N	%		
Pooled sample	53440	48342	9.5	46973	2.8	46351	4.1	46070	0.6	43719	5.1	43719	0.0	
Austria	2847	2629	7.7	2548	3.1	2516	1.3	2516	0.0	2391	5.0	2391	0.0	
Belgium	2714	2407	11.3	2334	3.0	2299	1.5	2177	5.3	2062	5.3	2062	0.0	
Denmark	1732	1269	26.7	1237	2.5	1196	3.3	1191	0.4	1146	3.8	1146	0.0	
Finland	2345	2132	9.1	2119	0.6	2086	1.6	2049	1.8	1857	9.4	1857	0.0	
France	4920	4416	10.2	4348	1.5	4310	0.9	4287	0.5	3991	6.9	3991	0.0	
Greece	7108	6297	11.4	6110	3.0	6023	1.4	6023	0.0	5738	4.7	5738	0.0	
Ireland	2003	1722	14.0	1696	1.5	1673	1.4	1650	1.4	1604	2.8	1604	0.0	
Italy	9052	8646	4.5	8221	4.9	8136	1.0	8136	0.0	7918	2.7	7918	0.0	
Luxembourg	2529	2395	5.3	2350	1.9	2327	1.0	2297	1.3	2173	5.4	2173	0.0	
Netherlands	3114	2406	22.7	2293	4.7	2182	4.8	2171	0.5	2101	3.2	2101	0.0	
Norway	1859	1715	7.7	1679	2.1	1612	4.0	1597	0.9	1582	0.9	1582	0.0	
Portugal	5386	5222	3.0	5038	3.5	5026	0.2	5018	0.2	4784	4.7	4784	0.0	
Spain	6497	5852	9.9	5621	3.9	5608	0.2	5608	0.0	5096	9.1	5096	0.0	
Sweden	1604	1418	11.6	1379	2.8	1357	1.6	1350	0.5	1276	5.5	1276	0.0	

Note

(a) Men aged 21-64, employed at least one month in income reference period; ESEC Class 4 is excluded



APPENDIX 3: Median full-year equivalent gross annual earnings, men aged 21-64 in full-time employment (Euros) <sup>(a)(b)(c)</sup>

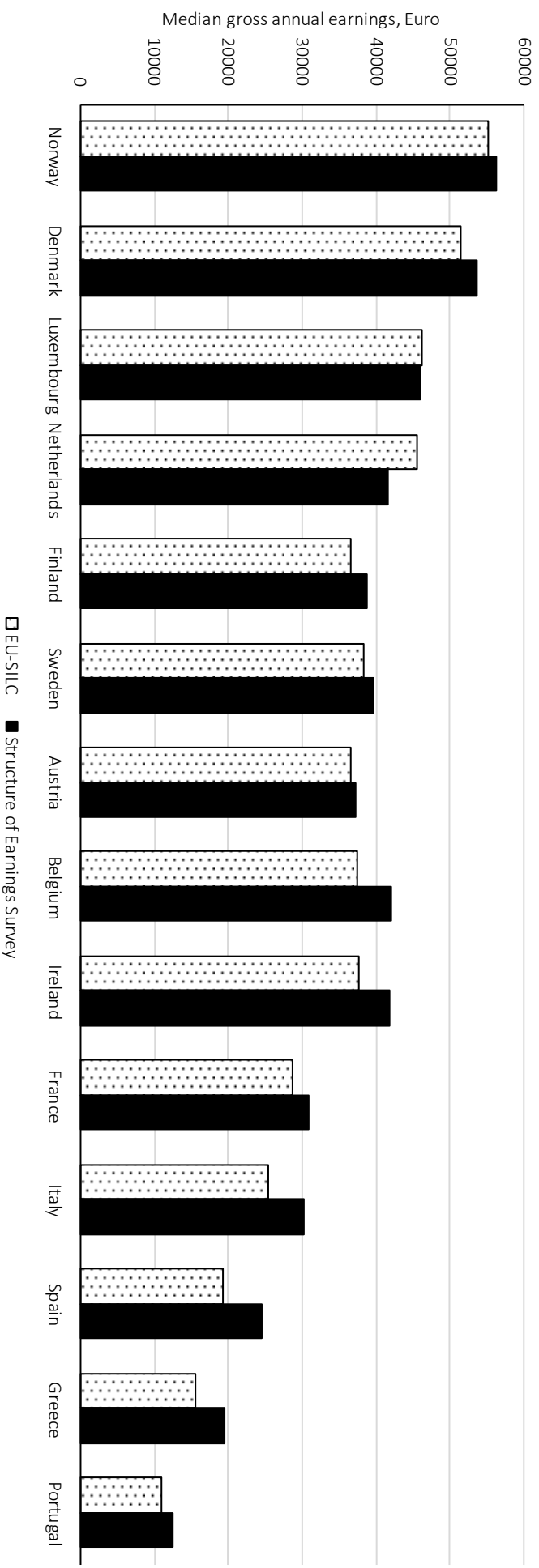
## Notes

(a) employed at least one month in past year

(b) Pooled sample: weighted using average sample size (3123) per country

(c) Data refer to final analytical sample; ESEC class 4 and cases with missing observations are excluded

APPENDIX 4: Median gross annual earnings, full-time employees, European Structure of Earnings Survey 2017; and median full-year equivalent gross annual earnings, full-time employees, EU-SILC 2017



APPENDIX 5: Distribution (%) of men aged 21-64 by ESEC in EU-SILC<sup>(a)</sup> and in European Social Survey (2002-2018)<sup>(b)</sup>

		<i>Class 1</i> : Large employers, higher grade professionals and managers	<i>Class 2</i> : Lower grade professionals and managers, higher grade technicians and supervisors	<i>Classes 3 &amp; 5</i> : Intermediate occupations; Lower supervisors and lower technicians	<i>Class 6</i> : Lower services, sales, clerical and technical occupations	<i>Class 7</i> : Routine occupations	Total
Austria	EU-SILC	16.0	29.7	26.2	17.9	10.2	100.0
	ESS	15.4	25.9	24.4	20.9	13.4	100.0
Belgium	EU-SILC	19.9	33.3	16.3	17.8	12.7	100.0
	ESS	20.4	25.2	21.0	17.3	16.1	100.0
Denmark	EU-SILC	22.8	29.0	14.7	20.8	12.7	100.0
	ESS	20.2	24.1	17.8	21.1	16.8	100.0
Finland	EU-SILC	23.1	26.4	8.6	25.5	16.5	100.0
	ESS	23.1	22.8	7.2	27.0	19.9	100.0
France	EU-SILC	19.1	31.1	19.6	15.7	14.4	100.0
	ESS	17.1	25.3	20.8	19.4	17.4	100.0
Greece	EU-SILC	16.5	20.9	15.9	28.4	18.3	100.0
	ESS	13.4	15.3	16.5	31.6	23.2	100.0
Ireland	EU-SILC	27.6	17.4	19.3	15.9	19.8	100.0
	ESS	23.3	17.9	16.4	19.7	22.7	100.0
Italy	EU-SILC	11.4	28.9	17.3	25.7	16.8	100.0
	ESS	12.5	20.7	17.2	27.5	22.1	100.0
Luxembourg	EU-SILC	19.3	32.2	16.0	19.3	13.2	100.0
	ESS	18.5	27.4	20.5	18.6	15.0	100.0
Netherlands	EU-SILC	29.9	36.3	13.4	13.2	7.1	100.0
	ESS	27.9	31.4	16.1	14.7	9.9	100.0
Norway	EU-SILC	25.3	36.0	13.0	17.7	8.1	100.0
	ESS	21.9	29.4	16.9	19.7	12.1	100.0
Portugal	EU-SILC	13.9	22.6	16.1	29.8	17.6	100.0
	ESS	10.1	15.8	16.0	34.3	23.8	100.0
Spain	EU-SILC	10.9	22.8	15.8	29.3	21.2	100.0
	ESS	13.9	17.1	19.5	25.9	23.6	100.0
Sweden	EU-SILC	18.4	35.2	10.2	24.2	12.1	100.0
	ESS	21.4	26.9	12.8	23.0	15.9	100.0

## Notes

(a) Employed at least one month in past year

(b) Most recent employment

APPENDIX 6: Distributions by age group, education and controls in analytical samples <sup>(a)</sup>

	Age					Education				Industry						Demographic variables		
	21-34	35-44	45-54	55-64	Pooled sample	Primary and lower secondary	Upper secondary	Post-secondary & Tertiary	Extractive, manufacturing and construction	Trade and accommodation	Professional services	Public services	Other services	Marriage or cohabitation	At least one child	Foreign birth		
Austria	28.2	23.0	31.2	17.7	24.7	6.0	56.4	37.6	42.7	21.4	15.9	17.2	2.8	67.8	35.8	19.8		
Belgium	28.9	26.9	27.8	16.3	27.8	13.6	37.4	49.1	33.3	19.7	19.6	24.4	3.1	69.6	39.6	14.4		
Denmark	18.8	28.8	31.4	21.1	18.8	10.2	47.6	42.3	34.6	21.2	20.5	19.9	3.7	73.3	44.8	5.6		
Finland	26.1	28.1	26.4	19.3	26.1	10.1	48.0	41.9	39.8	22.1	21.8	13.3	3.1	76.7	40.8	3.4		
France	29.0	27.8	28.5	14.8	29.0	15.2	45.2	39.7	38.9	22.4	16.3	19.6	2.8	74.9	46.3	8.9		
Greece	20.7	35.0	28.9	14.5	20.7	13.1	36.4	50.4	22.5	30.9	15.2	28.7	2.8	69.6	45.0	9.8		
Ireland	26.9	29.5	28.5	15.2	26.9	12.7	22.7	64.6	28.8	26.2	25.0	17.4	2.6	75.5	49.2	23.0		
Italy	19.0	28.0	32.4	20.6	19.0	32.2	44.9	22.9	42.5	20.7	15.6	18.5	2.3	64.6	39.9	13.7		
Luxembourg	29.1	29.1	31.2	10.6	29.1	24.5	39.6	35.9	21.8	19.9	25.4	28.8	4.2	72.9	42.4	51.9		
Netherlands	21.9	25.3	30.5	22.3	21.9	12.2	37.4	50.4	26.7	20.4	28.6	22.1	2.2	78.1	40.4	8.1		
Norway	25.5	25.4	26.2	22.8	25.5	16.8	41.8	41.5	34.5	22.5	20.4	19.7	2.9	70.3	39.7	10.7		
Portugal	23.7	32.7	27.1	16.5	23.7	51.2	27.1	21.7	40.2	25.8	13.6	18.1	2.4	73.6	44.0	8.2		
Spain	19.8	33.3	31.1	15.9	19.8	32.0	25.2	42.8	35.4	24.6	16.6	20.1	3.4	70.6	41.7	12.8		
Sweden	27.0	24.2	28.7	20.1	27.0	11.8	45.5	42.7	31.6	21.2	25.2	19.1	2.9	71.2	41.9	16.8		

Note

(a) Men aged 21-64, employed at least one month in past year; ESECC Class 4 is excluded

APPENDIX 7: Effect of social class on log gross full-year equivalent annual earnings, for men aged 21-64 in full-time employment - median regression coefficients<sup>(a)(b)</sup>

	Class 1	Class 2	Class 3 & 5	Class 6	Class 7
Pooled sample <sup>(c)(d)</sup>	0.40 **	0.25 **	0.10 **	0.01	0.00
Austria	0.53 **	0.33 **	0.15 **	0.07	0.00
Belgium	0.26 **	0.18 **	0.05 *	0.01	0.00
Denmark	0.30 **	0.18 **	0.07	0.01	0.00
Finland	0.39 **	0.29 **	0.05	-0.02	0.00
France	0.57 **	0.30 **	0.09 **	0.01	0.00
Greece	0.22 **	0.16 **	0.10 **	-0.02	0.00
Ireland	0.47 **	0.37 **	0.13 **	0.04	0.00
Italy	0.35 **	0.21 **	0.13 **	0.04	0.00
Luxembourg	0.55 **	0.39 **	0.08 **	-0.12	0.00
Netherlands	0.31 **	0.20 **	0.04	-0.06	0.00
Norway	0.33 **	0.24 **	0.08 *	0.03	0.00
Portugal	0.49 **	0.34 **	0.13 **	0.04	0.00
Spain	0.35 **	0.30 **	0.15 **	0.00	0.00
Sweden	0.36 **	0.23 **	0.17 **	0.02	0.00

Notes

(a) Employed full-time at least one month in past year

(b) Other explanatory variables in the model: age group, education, industry, living in partnership, having a child aged 0-17 in household, foreign birth

(c) Pooled sample: weighted using average sample size (N=3123) per country

(d) Regression includes country fixed effects

\*\* p<0.01, \* p<0.05

APPENDIX 8: Effect of age group on log gross full-year  
equivalent annual earnings, for men aged 21-64 in full-time  
employment - median regression coefficients<sup>(a)(b)</sup>

	21-34	35-44	45-54	55-64
Pooled sample <sup>(c)(d)</sup>	0.00	0.17 **	0.28 **	0.30 **
Austria	0.00	0.19 **	0.32 **	0.34 **
Belgium	0.00	0.15 **	0.24 **	0.30 **
Denmark	0.00	0.19 **	0.24 **	0.19 **
Finland	0.00	0.13 **	0.24 **	0.22 **
France	0.00	0.13 **	0.25 **	0.30 **
Greece	0.00	0.14 **	0.24 **	0.30 **
Ireland	0.00	0.17 **	0.35 **	0.44 **
Italy	0.00	0.17 **	0.25 **	0.26 **
Luxembourg	0.00	0.17 **	0.33 **	0.35 **
Netherlands	0.00	0.29 **	0.43 **	0.42 **
Norway	0.00	0.15 **	0.26 **	0.24 **
Portugal	0.00	0.18 **	0.28 **	0.29 **
Spain	0.00	0.25 **	0.35 **	0.44 **
Sweden	0.00	0.14 **	0.24 **	0.25 **

Notes

(a) Employed full-time at least one month in past year

(b) Other explanatory variables in the model: social class, education, industry, living in partnership, having a child aged 0-17 in household, foreign birth

(c) Pooled sample: weighted using average sample size (N=3123) per country

(d) Regression includes country fixed effects

\*\* p<0.01, \* p<0.05

APPENDIX 9: Effects of education and controls on log gross full-year equivalent annual earnings, for men aged 21-64 in full-time employment - median regression coefficients <sup>(a)</sup>

	Education			Demographic variables				Industry				
	Tertiary	Upper secondary	Primary or lower sec.	Living in partnership	Having a child aged 0-17	Foreign birth	Extractive, manufacturing and construction	Trade, accommodation	Professional services	Public services	Other services	
Pooled sample <sup>(b)(c)</sup>	0.25 **	0.11 **	0.00	0.08 **	0.01 **	-0.13 **	0.00	-0.06 **	-0.03 *	-0.09 **	-0.17 **	
Austria	0.21 **	0.05	0.00	0.09 **	0.05 *	-0.19 **	0.00	-0.10 **	-0.03	-0.09 **	-0.35 **	
Belgium	0.26 **	0.09 **	0.00	0.07 **	0.02	-0.09 *	0.00	-0.08 **	-0.11 **	-0.11 **	-0.10	
Denmark	0.23 **	0.06 *	0.00	0.05 **	0.01	-0.12 *	0.00	0.01	0.01	-0.14 **	0.00	
Finland	0.08 **	0.06 **	0.00	0.08 **	0.03	-0.02	0.00	-0.05 *	-0.06 *	-0.06 *	-0.25 **	
France	0.19 **	0.02	0.00	0.04 *	0.05 **	-0.08 **	0.00	-0.03	-0.07 **	-0.13 **	-0.13 **	
Greece	0.22 **	0.12 **	0.00	0.12 **	0.02	-0.17 **	0.00	0.01	0.01	0.05 *	-0.18 **	
Ireland	0.28 **	0.14 **	0.00	0.09 *	0.06 *	-0.11 **	0.00	-0.16 **	0.07	-0.05	-0.38 **	
Italy	0.25 **	0.15 **	0.00	0.09 **	0.03	-0.18 **	0.00	-0.04 **	-0.01	0.01	-0.14 **	
Luxembourg	0.32 **	0.13 **	0.00	0.21 **	0.04	-0.22 **	0.00	-0.01	0.09 *	0.24 **	0.22 **	
Netherlands	0.27 **	0.09 **	0.00	0.13 **	0.02	-0.05	0.00	-0.03	0.02	-0.01	0.04	
Norway	0.30 **	0.17 **	0.00	0.03	0.02	-0.09 **	0.00	-0.11 **	-0.04	-0.19 **	-0.28 **	
Portugal	0.50 **	0.21 **	0.00	0.11 **	0.00	0.03	0.00	0.04 *	0.00	0.07 *	-0.21 **	
Spain	0.32 **	0.18 **	0.00	0.15 **	0.05	-0.25 **	0.00	-0.12 **	-0.07 *	0.03	-0.21 **	
Sweden	0.17 **	0.12 **	0.00	0.05 *	0.01	-0.06 *	0.00	-0.07 **	0.01	-0.18 **	-0.16 **	

Notes

(a) Employed full-time at least one month in past year

(b) Pooled sample: weighted using average sample size (N=3123) per country

(c) Regression includes country fixed effects

\*\* p&lt;0.01, \* p&lt;0.05