The Class Pay Gap in Britain's Higher Professional and Managerial Occupations

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Abstract

In this paper we demonstrate the way in which class origin shapes earnings in higher professional and managerial employment. Taking advantage of newly released class origin data in Britain's Labour Force Survey, we examine both the relative openness of different high-status occupations and the earnings of the upwardly mobile within them. In terms of access, we find a distinction between "traditional" professions, such as law, medicine and finance, which are dominated by the children of higher managers and professionals, and more technical occupations such as engineering and IT that recruit more widely. However, even when those who are not from professional or managerial backgrounds are successful in entering high-status occupations, they earn sixteen percent less, on average, than those from privileged backgrounds. This class-origin pay gap translates to up to £7,350 ($11,000) lower annual earnings. This difference is partly explained by the upwardly mobile being employed in smaller firms and working outside London, but it remains substantial even net of a variety of important predictors of earnings. These findings underline the value of investigating differences in mobility rates *between* individual occupations as well as illustrating how, beyond entry, the mobile often face an earnings "class ceiling" *within* high-status occupations.

Introduction

People in higher professional and managerial occupations tend to command large incomes, exercise substantial power in their workplaces, and pass significant advantages on to their children. In sociology, there is a rich history of research looking at social mobility into such high-status occupations (Lipset and Bendix 1991; Stanworth and Giddens 1974; Heath 1981; Hout 1984). However, in recent decades this line of enquiry has been largely abandoned as researchers have increasingly focused their attention on debates surrounding *generalised rates* of mobility and how best to interpret them (e.g. Bukodi et al. 2014). Moreover, when looking at these generalised rates, most sociologists have followed the lead of Goldthorpe and concentrated on examining mobility into "big classes" such as the EGP schema in the US or the National Statistics Socio-economic Classification (NS-SEC) in the UK. As Hout (2015) recently noted in an essay on the state of mobility research, this usually involves directing attention to standard mobility tables, comparing origin and destinations taken from two points in time, and measured with a single occupation-based variable. In many national contexts we therefore know a great deal about mobility between large categories of occupations but little about the potentially important differences that exist within these big classes.

We argue here that class analysis needs an approach which registers class destinations more effectively. An important move towards this has been put forth by Weeden and Grusky's "micro-class" concept (Weeden and Grusky 2005). Indeed, as we will show in this paper, one can only understand the full effects of class origin in Britain when destinations are broken down into specific "micro-class" occupational groups. This is because the effect of "big" class origins varies substantially between and within particular occupations, in ways which are obscured using standard mobility tables.

But this is only a first step. Nearly all sociological research—in the United States, Britain, and beyond—conceptualises social mobility as an issue of *occupational* access[1], whether at the "big class" (Goldthorpe) or "micro-class" (Weeden-Grusky) level. While occupation is clearly important, one problem with both these theoretical approaches is that they ignore the differences in resources people bring with them into occupations, as well as the different rewards they reap once there. Here we instead advocate an approach rooted in Bourdieusian theory (Bourdieu 1987), and recent Bourdieu-inspired research (Atkinson 2010; Savage et al. 2014;

[1] For a notable exception see Buhlmann (2010).

Flemmen 2012), which stresses that class position can only be fully understood as the sum total of resources at a person's disposal: most centrally earnings and education, as well other forms of economic, cultural, and social capital. While many of these are strongly associated with occupation, and occupational access may indeed be the best *single* proxy class analysis has at its disposal, it is important to recognise that it does not fully, or even adequately, capture the effects of social origin on a person's class destination. In fact, there is a wealth of research indicating that class origin matters well into the life course, and particularly in high-status occupations. This work stresses that even when individuals do experience occupational upward mobility they still face challenges stemming from their different social, economic, and cultural resources, class bias, or a sense of emotional dislocation (Lareau, 2015; Rivera 2015; Skeggs 1997; Friedman 2015; Ashley 2015).

Following in this vein, this paper advances a new way of conducting class analysis to make it better able to investigate specific forms of class-origin inequality within big-class and micro-class occupational groups. In developing this agenda, we borrow the concept of "glass ceiling" which has been used extensively by feminist scholars to examine the hidden barriers—in terms of earnings and occupational position—experienced by women and ethnic minorities (McGovern et al. 2007; Davies 2011; Babcock et al. 2003; Wilson, Sakura-Lemessy, and West 1999). We show here that there is also a "class ceiling" at play, which prevents upwardly mobile members of high-status occupations from enjoying equivalent earnings to those who come from intergenerationally stable backgrounds. This, we argue, not only points toward a previously undetected form of intra-occupational inequality, but also underlines the theoretical limitations of using occupation alone to understand class destination. Our results suggest, for example, that a Glasgow-based lawyer earning £50,000/year whose parents were factory workers is not meaningfully in the same class destination as a City of London lawyer earning £75,000, raised in a family of lawyers.

Our analysis capitalises on newly released UK Labour Force Survey Data to provide the first large-scale and representative study of social mobility *into* and *within* Britain's higher professional and managerial occupations[2]. The article investigates two key research questions. First, we examine whether upward mobility is more common into some NS-SEC 1 occupations than others. Second, we move beyond the issue of occupational "access" to examine how the

[2] The most relevant antecedent is Heath (1981).

upwardly mobile fare once they have entered NS-SEC 1 occupations. In particular, we ask, do the mobile attain the same levels of earnings as those from more privileged backgrounds? If not, can this be explained by differences in educational qualifications, human capital or work context between the two groups, or does a "class ceiling" persist when we compare otherwise-similar people from different class backgrounds?

Background and Theory

Mobility into Higher Professional and Managerial occupations

Over the last 20 years the goal of increasing social mobility has become a rare point of convergence among Britain's political parties (Milburn 2012). At the root of this is a widely-held anxiety that mobility is declining. This concern has been fuelled by economists who point toward a significant decrease in upward *income* mobility (Blanden et al. 2004; Blanden, Gregg, and Macmillan 2007). However, their findings have been disputed by sociologists (Erikson and Goldthorpe 2010; Goldthorpe 2013) who have stressed the importance of measuring mobility in terms of occupational class rather than income, and using this approach find that relative mobility rates have remained fairly constant.

This heated debate is important, but has detracted attention from a number of key issues of social reproduction and inequality that we take up in this article. In particular, the focus has remained fixated on *general aggregate* mobility rates (or inflow and outflow rates into seven big-class categories) rather than examining how rates of mobility vary among smaller groups, such as higher professional and managerial occupations. This more focused approach did historically play a central role in "status-attainment" approaches to class (Blau and Duncan 1967; Stanworth and Giddens 1974; Bielby 1981; Heath 1981). However, it was effectively critiqued by Goldthorpe et al (1980), who argued that status attainment approaches failed to place elite mobility within the context of broader shifts in the post-war class structure, particularly the "more room at the top" expansion of professional and managerial jobs.

Goldthorpe's critique was rightly influential, but it has also acted to stymie more minute and granular analyses of mobility into particular occupations, which is especially important for understanding dynamics at the higher levels of the social structure. Whilst it is

clearly inadequate to examine inflow into high-status occupations as if this is the only, or even main, task for social mobility research, we contend that it remains a pivotal question to explore empirically, particularly in a contemporary context where the power and resources of those at the top of the social hierarchy are becoming more entrenched (Gilens 2012; Dorling 2014; Piketty 2014).

There are also two important conceptual reasons for reviving this kind of analysis. First, in the process of aggregating all higher professional and managerial occupations into "big class" categories such as NS-SEC 1 or EGP 1[3], the specific dynamics of occupational contexts remain hidden. In particular, individual occupations with distinct histories, work and market situations, entry requirements and recruitment structures are problematically classified together (Weeden and Grusky 2005).

Second, and linked to this, examining mobility into aggregated "top-class" categories may mask important distinctions or fractures within these social groups. In class analysis, divisions of this kind have been the subject of longstanding debate, from Wrightian (Wright and Wright 1998) concerns about types of 'assets' to the Bourdeusian (1984) divide between "dominant" occupations situated at different ends of the 'capital composition' axis. In Britain these debates have focused largely on divisions between management and the professions. Although NS-SEC 1 does officially separate these sectors, distinguishing NS-SEC 1.1 ("large employers and higher managerial and administrative occupations") from NS-SEC 1.2 ("higher professional occupations"), these are almost never operationalised in contemporary mobility studies (for notable exemplars of this omission see Bukodi et al. 2014; Li and Devine 2011; Goldthorpe and Mills 2008). Yet these "situs" have distinct histories. Unlike many capitalist nations where a unified "service class" developed in the 19th century, in Britain only a state-sponsored professional class emerged at this time. When a managerial sector began to appear at the beginning of the 20th century, this assumed a "subordinate" position within the service class, lacking cultural capital and dependent on capitalist employers. This historical legacy continued to set these two sectors apart throughout the 20th century, with the professions enjoying greater job security and cultural capital (Savage et al. 1992; Butler and Savage 1995). There is therefore

[3] The NS-SEC was developed from a sociological classification known as the Goldthorpe Schema (Goldthorpe et al. 1980; Erikson and Goldthorpe 2010) and is now widely used in both official statistics and academic research in the UK.

good reason to explore, as we do here, whether these groups remain distinct in their ability to reproduce themselves.

The question of how to develop a more occupationally-specific analysis of social mobility *has* been advanced in the US, particularly by Grusky, Weeden and their various collaborators (e.g. Grusky and Sørensen 1998; Jonsson et al. 2009). These authors argue that it is at the localized level of disaggregated occupational groups that the key processes of class formation – social closure and reproduction, identification and awareness, collective mobilization and exploitation—can most clearly be seen to emerge. Drawing on US surveys with large sample sizes, these authors demonstrate that substantial differences in mobility exist *between* individual occupational groups, which they argue should subsequently be understood as "micro-classes."

One problem with the "micro-class" approach, however, is that like Goldthorpian "big-class" analysis, it tends to remain tied to mobility tables that track identical origins and destinations. This means that it frequently elides the question of how big-class origins may affect micro-class destinations. Thus while a micro-class perspective may effectively capture the specialised resources that a doctor may transmit to his/her children (that will advantage them in the field of medicine), it is still important to ask what kinds of resources come from parents' big-class position, and how this may also profoundly affect their children's occupational destination. Moreover, we contend that this is a particularly important issue for sociology to address as it allows us to identify the precise channels through which intergenerational class inequalities are reproduced or, put another way, the particular occupations where diffuse big class resources can be effectively "cashed in."

Until now the kind of large-scale representative data needed to conduct this kind of analysis (i.e containing large sample sizes and detailed social origin data) has simply not been available in the UK. In this way, the newly released LFS data we draw on here provides an unprecedented opportunity. In its July-September 2014 quarterly survey the LFS, the largest representative sample of employment in the UK (n=95,950), included for the first time detailed questions on parental occupation. Drawing on the addition of this social origin variable, we first examine mobility inflow rates among higher professional and managerial occupations in Britain, and ask whether mobility is more common into some sectors or occupations than others.

Class and the "Glass Ceiling"

Another by-product of the dominant focus on big-class mobility rates is that it reduces social mobility to a one-dimensional measure of occupational *entry.* More specifically, it simply compares two (or occasionally three) moments in a respondent's life—i.e. social origin, current job and occasionally also first job (Goldthorpe et al. 1980; Erikson and Goldthorpe 1992). This is problematic because it conflates occupational access with *class position*, and inadvertently suggests that all individuals enter occupations on an equal footing. Yet while those from working-class backgrounds may secure admission into elite occupations, they do not necessarily enter with the same resources as those from more privileged backgrounds, and therefore do not necessarily achieve the same levels of success.

The issue of relative success *within* occupations has been much more effectively explored in relation to the experiences of women and ethnic minorities. Here studies have consistently demonstrated the considerable hidden barriers, or "glass ceilings," that women and ethnic minorities face (Davies 2011; Cohen and Huffman 2007). Such barriers manifest in myriad forms. First, there is reliable evidence that a "gender pay gap" exists in most professional and managerial occupations, even when a wide array of variables are controlled for (e.g. Gorman and Kmec 2009; Petersen and Morgan 1995). The same is true for certain ethnic groups (Wilson, Sakura-Lemessy, and West 1999; Brynin and Güveli 2012). Other research points to the lack of women in senior positions in fields as diverse as law, culture and business (Hagan and Kay 1995; Cohen, Huffman, and Knauer 2009; Griffiths, Miles, and Savage 2008).

While questions of class origin are largely absent from work on "glass ceilings" or pay gaps, we believe these concepts may be usefully imported into the field of class analysis. In particular, there is already *some* evidence that origin has a persistent impact on labour market outcomes, particularly earnings. In Norway, for example, the work of Hanssen (2001a; 2001b) and Flemmen (2009) has shown how those originating in the highest social classes go on to obtain the highest level of economic rewards[4].

Until recently such illuminating work has not been matched in the UK. However, recent work (Authors, 2015) drawing on the Great British Class Survey (GBCS) found that

[4] A similar effect has been reported in the US (Torche, 2011: 796), although curiously is only mentioned in passing by the author.

even when those from routine/semi-routine backgrounds enter NS-SEC 1 occupations, they are less likely to accumulate the same economic, cultural and social capital as those from privileged backgrounds. While many such differences can be explained by the direct inheritance of wealth, social connections, legitimate tastes and educational opportunities, the authors also found that the mobile have considerably lower average incomes, pointing toward the kind of "glass ceiling" normally associated with women and ethnic minorities. Indeed, even when controlling for education, location, age, and cultural and social capital, the upwardly mobile had, on average, considerably lower annual incomes (£8-14k) than higher-origin colleagues.

While these results point toward lingering class disadvantage within NS-SEC 1, the GBCS data have three important limitations. First, the GBCS was a self-selecting web-based survey, and therefore the nature of the data means it is not possible to use it for statistical inference about the national population (Savage et al. 2014). Second, the income question in the GBCS was insufficiently precise: it asked about net annual household income in wide bands rather than having any measure of individual earnings. Third, the GBCS lacked detailed questions concerning respondents' employment situation, including measures of the types of mechanisms shown to affect earnings in other studies of wage gaps.

In contrast the LFS data we draw upon here corrects for each of these problems; it is a random sample, nationally representative survey; it contains detailed and accurate measures of individual earnings and employment context; and, perhaps most significantly, it includes variables that allow us to analyse three key areas widely thought to affect earnings. First, it includes measures of educational attainment, and specifically whether a respondent has attended university. This may be particularly telling in a British context, as the average wage return to a degree remains high in both absolute and comparative terms (Walker and Zhu 2010; Gregg et al. 2013; Jerrim 2012). Second, it is routinely hypothesised in some sections of sociology (Becker 1962; Coleman 1988; Groot and Oosterbeek 1994), and certainly within neo-classical economics (Piketty, 2014: 20-21), that inequalities in earnings can be explained largely in terms of human capital. Here we examine this thesis directly via both educational attainment and other key human capital measures such as job tenure, job training and health. Finally, the LFS also includes measures of an individual's work context that are known to be associated with distinct occupational advantages, such as working in London (Cunningham

and Savage 2015), in big firms (Ashley, 2015) and in the private versus public sector (ONS, 2014)[5].

The LFS data thus facilitates a much more in-depth investigation into whether, beyond entry, the mobile continue to face lingering disadvantage within Britain's higher professional and managerial occupations. Specifically, it allows us to examine not only the relationship between social origin and income, but also whether this relationship can be accounted for by other pertinent social differences between the mobile and the stable.

Data & Methods

We draw here on newly-released data from the UK Labour Force Survey that provides, for the first time, detailed information about parental occupation. Drawing on this social origin variable we begin by examining the parental occupations of respondents employed in Class 1 of the National Statistics Socio-economic Classification (NS-SEC) —denoting "Higher managerial, administrative and professional occupations."[6] Throughout the article our analysis examines divisions within NS-SEC 1 as a whole, its two constituent sectors—NS-SEC 1.1 and 1.2—and finally 63 individual occupational titles within NS-SEC 1[7] which we combine throughout into 15 larger occupational groups. Our goal in creating these was to account for occupational groupings with similar training, skills and work contexts (Hout 1984), while also having a sufficiently large n within each group to allow for meaningful inference. Drawing on the work of Weeden and Grusky (2005), eight of the groups can be conceptualised as micro-classes. Two of these are composed of one occupation each (medical practitioners and higher education teachers, both of which have their own SOC 2010 code), and six additional groups are made up of closely related occupations: law, engineering, scientists, accountants, IT professionals, and finance managers. The remaining seven occupational groups are necessarily more ad-hoc, but have been grouped so

[5] This is of course not a comprehensive account of everything that affects earnings. We do not have measures, for example, of respondents' social networks or social capital, cultural capital, or their parents' education or economic capital, all of which are likely to be important.

[6] This is essentially the same as Class I of the Goldthorpe-derived scheme also used in the US and international comparisons, also called Erikson-Goldthorpe-Portocarero or EGP based on their seminal article (1979).

[7] These are the 60 SOC 2010 codes assigned to NS-SEC 1 in the ONS's simplified analytic scheme, plus three additional occupations (taxation experts, information technology and telecommunications directors, and functional managers and directors n.e.c) with more than 35 LFS respondents assigned to NS-SEC 1 (NS-SEC assignment is not based solely on SOC code).

as to be as coherent as possible. The individual occupations and occupational groups are presented in Table 2 below.

It is important to explain how we operationalise social mobility. In order to measure respondent's social origin we refer to the LFS question asking respondents aged over 15 the occupation of the main earner parent when they were 14. We then group respondents' social origin into the eight NS-SEC classes. [8] In order to simplify our analyses, we consolidate these further at various points in the paper. Here we use a four-class scheme, comparing NS-SEC-1 origins (higher managers and professionals, the intergenerationally stable), to NS-SEC 2 (lower managers and professionals, short-range upwardly mobile), NS-SEC 3, 4 and 5, (intermediate and clerical occupations[9], mid-range mobile) and NS-SEC 6, 7 and 8 (routine and semi-routine occupations and those with no earning family member[10], long-range mobile). We also use respondents' parents' specific occupations to identify those who are in the same occupational group as their main income-earning parent. We code these respondents as "micro(class)-stable" and occasionally we refer to those who are stable in NS-SEC 1 occupations but not in the same group as their parents as the "macro(class)-stable."

We draw on a sample of 95,950 respondents from the July-September 2014 LFS Wave. We remove all those under 23[11] and/or in full-time education from the analyses. We also omit those over 69, as the LFS collects data on those over 69 differently, since most people in this age group have moved into retirement. This leaves 43,444 respondents between the ages of 23 and 69 who have sufficient origin information to assign to one of the above groups, and 6,104 in NS-SEC 1 occupations. The LFS uses a rolling longitudinal design, where respondents are surveyed in each of five consecutive quarters, with a fifth of the survey entering and another fifth leaving in each quarter. Not all questions are asked of each respondent in each quarter, however; most importantly for our purposes, respondents only answer earnings questions in their first and final

[8] We use Table 10 from http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html at ONS, the "simplified scheme" to match parents' 4-digit SOC2010 occupational codes to the analytic NS-SEC categorization.

[9] This includes occupations which are normally self-employed, and technically skilled and craft occupations.

[10] People who said there was no one earning in their household at age 14.

[11] Although it is standard in mobility table analyses to only look at those age 30 or 35 or over, we include the widest reasonable age range because we are interested in the composition of NS-SEC 1, not mobility chances by origin.

quarters in the survey. Thus, in order to access earnings data (as well as detailed information for respondents' social origins) we obtained a special license for this data. This allowed us to link records across four quarterly LFS questionnaires so that we had earnings data for as many people as possible who answered the social origin question. This resulted in a sample of 3510 NS-SEC 1 respondents who also have earnings information, and 3377 with data on all covariates used in regression models.

Our analysis proceeds in three steps: first, we describe the social origins of those in different NS-SEC 1 occupations. Second, we compare the earnings averages[12] of those in these occupations according to their social origin, then model the extent to which class origins predict earnings net of a host of controls, and decompose the earnings difference into portions that are "explained" and "unexplained" by our models. Third, we compare the class pay gap within NS-SEC 1 disaggregated by gender, ethnicity, age, and smaller occupational groups.

Origins and Destinations

We begin by providing the most up-to-date analysis of rates of social mobility into Britain's higher professional and managerial occupations. Table 1 demonstrates the distribution of social origins of respondents in NS-SEC 1 occupations as well as the sub-categories of NS-SEC 1.1 and 1.2.

[Table 1 about here]

Table 1[13] displays two key findings. First, it demonstrates that those in NS-SEC 1 occupations are *disproportionately* drawn from privileged occupational backgrounds. More

[12] The Labour Force Survey provides multiple measures of earnings. We take the natural log of weekly gross earnings, a constructed variable provided by LFS based on the respondent's earnings over their reported pay period. When presenting and discussing our results, we use the exponentiated values or coefficients; coefficients can be directly interpreted as percentages (e.g. a coefficient of .90 indicates a 10% decrease in predicted earnings for a move of one unit in that variable). . We also analysed hourly earnings and untransformed weekly income (analyses available upon request) and obtained substantively similar results.

[13] Tables 1 and 2 examine occupations at the time the origins question was asked—the July-September 2014 wave of the LFS; analyses in the remainder of the paper, which look at earnings, use the respondent's reported occupation at the time the earnings question was asked. For roughly two-fifths of respondents this was also July-September 2014; the other three fifths reported earnings 1 to 3 quarters earlier. See Data Note in Appendix for fuller explanation.

specifically, those from NS-SEC 1 backgrounds are nearly twice as common in NS-SEC 1 as in the general population (26.6% vs 14.1%), while the relationship for people with parents who worked in routine employment is reversed: they constitute 18.3% of the population but only 9.5% of NS-SEC 1. It is clear, then, that Goldthorpian "big class" origins are strongly associated with "big class" destinations.

Second, however, Table 1 also reveals substantial differences in the relationship between social origins and destinations between the managerial and professional sectors of NS-SEC 1. In particular, we find that the greater social exclusivity of the professions—originally highlighted by Savage et al (1992)—persists in contemporary Britain, with significantly higher inflow rates of recruitment into higher managerial occupations than into the higher professions. It is also worth noting here that higher managers in our sample earn on average 24% more than higher professionals (see Appendix Table A1). This is significant because it suggests that greater economic capital does not necessarily map onto greater social closure in a UK context.

One of the main advantages of the new LFS data is that it also allows us to move beyond big classes, or even class sectors, toward a more fine-grained analysis of mobility into *individual* high-status occupations. Table 2 (and Figure 1) display rates of recruitment and reproduction into the 63 occupational titles, and 15 occupational groups, that make up NS-SEC 1. Table 2 and Figure 1 are both sorted by the relative "openness" of these 15 occupational groups. The first column of Table 2 also reports rates of intergenerational "micro-class" reproduction for each of these occupational groups—that is where occupational group *destination* directly matches parental occupational group *origin* (e.g respondents in law whose main-earner parent was also in law); this group is a subset of the intergenerationally stable. Figure 1 illustrates the extent to which each origin group is over- or under-represented in each of the occupational destination groups as compared to their prevalence in the population (of 23 to 69 year olds) as a whole; that is, a value of 1 for long-range mobile would indicate that the same proportion of people from working-class backgrounds are in that occupational group as there are in our target population.

[Table 2 about here]

[Figure 1 about here]

Table 2 and Figure 1 demonstrate that NS-SEC 1 is by no means a coherent "class" in terms of the origins of its incumbents.[14] On the contrary, there is tremendous diversity in the exclusiveness of different high-status occupations in Britain[15]. First, it is possible to detect a pattern of distinct micro-class reproduction, where children with parents in medicine and law are 21 and 18 times (respectively) more common in these fields than in the population as a whole (see Appendix Figure A1). On the other hand, rates of micro-class reproduction are much lower in other occupational groups; children of people in accounting, for example, are only about 1.75 times as common in accounting occupations as elsewhere.

Second, Table 2 illustrates that the *broader* social origins of those in different elite occupations also vary considerably. For example, while 53% of doctors[16] are the children of higher managers and professionals, only 16% of senior public sector managers and professionals have similarly privileged roots. Echoing the recent results of Authors (2015), Figure 1 and Table 2 also suggest a telling distinction within these occupations between the traditional and the technical. For example, the traditional—or "gentlemanly" (Miles and Savage 2012)—professions of law, medicine, finance, life science, academia and science contain a particularly high concentration of those from NS-SEC 1 backgrounds, with the intergenerationally stable overrepresented by a factor of more than two in each case. Similarly, Table 2 also illustrates that these traditional professionals are among the most "closed" to those from relatively disadvantaged backgrounds: less than 7% of doctors, veterinarians, dentists or physical scientists, for example, are from routine or semi-routine working class or no-earner family origins.

In contrast, we can identify a set of technical professions in the form of engineering, IT and the built environment that contain a higher than average percentage (compared to NS-SEC 1 as a whole) of those who have been upwardly mobile. Furthermore, in certain public sector occupations, such as public sector managers and protective civil servants, the majority have *not* come from professional or managerial backgrounds[17].

[14] Appendix table A3 gives standard errors and confidence intervals for the percentage stable in each of our 15 occupational groups.
[15] The patterns reported are for all respondents in these occupations between the ages of 23 and 69; further analysis might examine differences by gender, ethnicity, or age group; our purpose here is to capture the overall composition of each occupation by social origin.
[16] This is very similar to the rates of reproduction identified by Miles (1999) for 1839-1914 data.
[17] The intergenerationally stable are still slightly overrepresented compared to the population as a whole.

These findings are significant in two main ways. First, they underline the limitations of using big-classes like NS-SEC 1 to understand the social composition of the top end of the occupational order. In Britain at least, this elides an important distinction between higher professionals and managers (Savage et al. 1992). While higher managers earn more, the higher professions remain significantly more *elitist* in terms of restricting access for those from working class backgrounds (Macmillan 2009). Second, our results indicate that the long-standing theoretical tendency to pitch big-class mobility analysis against micro-class approaches has acted to shut down important analytical avenues. In particular, both of these approaches proceed from the logic of the standard mobility table. Yet by looking *asymmetrically* at both macro and micro-class origins and destinations, our analysis underlines the importance of resources that stem from *both* big- and micro-level class origins. While microclass reproduction is especially strong in certain areas like law and medicine, it is really at the level of micro-class *destination* that, contra Goldthorpe, the effects of big-class origins are brought sharply into focus: we see the largest proportions of the intergenerationally stable within specific occupations such as veterinarians, dentists, airline pilots, and those working in finance, science and academia.

Introducing the Class Ceiling

While our analysis so far has demonstrated wide variations in the openness of different high-status occupations, it does not tell us how those from lower origins fare relative to others *within* NS-SEC 1 occupations. To tap this intra-occupational question, we analyse logged weekly gross earnings. While earnings do not necessarily provide a definitive measure of occupational position, or level of prestige, it is the best available proxy and also an important marker of success in its own right. Figure 2 therefore shows the average logged weekly gross earnings of respondents in NS-SEC 1 occupations, according to their social origins.

[Figure 2 about here]

Figure 2 demonstrates that there are substantial and significant earnings differences among those in NS-SEC 1 occupations, according to their social origin. Those whose parents were in higher managerial and professional occupations have (geometric) mean earnings of £844 a week, while those who have been upwardly mobile earn on average £56 to £173 less per week,

depending on the range of their mobility. Particularly striking here is the pay gap encountered by those from working-class (NS-SEC 6, 7 and 8) backgrounds, who as a group earn an average of only 83% as much as intergenerationally stable, which translates into £141 less per week, or an annual difference of about £7350 ($11,000)[18]. These differences are not only substantial but also statistically significant: the average logged earnings of each origin group are lower than the stable at $p<.05$, as is the difference between those from routine manual or non-earner households and the overall mean across all of NS-SEC 1.

Of course, a simple distribution of earnings averages cannot tell us whether the upwardly mobile face a "class ceiling" or pay discrimination, or whether they are simply different from the inter-generationally stable in other respects. In order to disentangle potential sources of class-origin income difference, in Table 3 we show a series of nested linear regressions that control for four sets of factors that we identified in our literature review as sources of income inequality. In the base model, we include controls for gender, ethnicity and age as well as for paid hours worked and the quarter in which the respondent gave earnings information[19]. In Model 2, we add measures of education: the highest degree or qualification the respondent has achieved, and their degree classification[20]. Model 3 adds additional measures of "human capital" – training, job tenure and current and past health[21]; Model 4 adds work context: the region of the UK in which the respondent worked, the industry her job was in, whether she worked in the public or private sector, the size of the firm at which she worked, and whether her occupation is classified as NS-SEC 1.1 or 1.2. Finally, in Model 5, we add dummy variables for each of the individual occupations in NS-SEC 1. Coefficients are exponentiated, and can therefore be understood as giving the predicted percentage change in earnings for a one-unit change in the independent variable (e.g. the coefficient of .792 for those with NS-SEC 7 parents in Model 1 indicates predicted earnings 79.2% those for NS-SEC 1-origin respondents).

[18] Because we are using logged income, these are geometric rather than arithmetic means. The percentage differences between categories using arithmetic means are roughly similar, but the figures in GBP are larger: the difference between the stable and the long-range mobile *arithmetic* mean weekly income is £165, which is £8614/year or nearly $13,000.

[19] See Appendix for sources and distributions of all variables used in regressions. Individual occupation coefficients not shown in Table 3.

[20] British undergraduate degrees are classified categorically on a 5-point scale – "first-class", "2:1", "2:2", "third" and "pass."

[21] Higher values on each of these health scales indicate greater levels of health problems, see Appendix for more detail.

[Table 3 about here]

Table 3 shows that even when we control for all of these variables, the class pay gap remains across NS-SEC 1. More specifically, in Model 5, with all the controls included, the pay gap remains statistically significant for all those from NS-SEC 3-8 social origins. Moreover, there is still a substantial difference in earnings by origin— 9-12 percent, which translates to £4342 ($6500) per year[22] lower earnings for those from NS-SEC 6-8 as compared with the mean for NS-SEC 1 origins—between respondents who are otherwise similar in every way we can measure. Significantly, this is very similar in size and persistence to the estimate of the gender wage gap, where we find women earning 88.2% of otherwise-similar men in NS-SEC 1. This is worth underlining. Even when the upwardly mobile are successful in entering Britain's higher professional and managerial occupations, our results make clear that they face a powerful "class ceiling" that persists even when we control for a range of factors believed to affect earnings.

Decomposing The Class Pay Gap

While Table 3 points to a previously undetected class pay gap, it also allows us – in conjunction with Table 4—to unravel some of the mechanisms responsible for driving this inequality. Although we cannot conduct a proper causal analysis here, in Table 4 we conduct a Blinder-Oaxaca decomposition (Blinder 1973; Jann 2008) to see how much the measured attributes of the upwardly mobile account for how much of the class pay gap[23]. This model uses the same variables as the full model in Column 5 of Table 3, but simply compares those who are mid- or long-range upwardly mobile to the intergenerationally stable[24]. Overall, measured

[22] Calculated based on a model which groups NS-SEC 6-8 origins together (predicted earnings for this group as a whole are 10.4% less than for the stable). The annual difference is larger—£5,500—when the dependent variable is untransformed weekly earnings.

[23] This is the standard approach for studies of gender and other earnings gaps (Weichselbaumer and Winter-Ebmer 2005); the procedure conducts separate regressions for each group, allowing each group's attributes/control variables to affect their predicted earnings differently. The observed gap in earnings can then be attributed to differences between the groups and other ("unexplained") differences.

[24] We exclude this group because they represent minimal upward mobility (many analyses in fact treat moves from NS-SEC 2 to 1 as stability), and because they do not have significantly lower earnings than the stable in most of our analyses.

differences between the stable and the upwardly mobile account for 46% of the class pay gap but 54% remains *unexplained*.

[Table 4 about here]

The percentages in the second column of Table 4 can be read as the amount that the pay gap would increase (negative) or decrease (positive) if the upwardly mobile had the same average values on those measures as the intergenerationally stable. For example, the negative 24% for age in Column 2, is due to people with intermediate- or working-class parents being older, on average, than those with parents who were in NS-SEC 1; if the average ages of the two groups were the same, the pay gap between them would be 24% larger. (These negative effects mean that other effects can and do account for more than the total percentage of explained difference.)

Table 4 demonstrates that differences in educational attainment account for 45% of the earnings gap. This is because those in NS-SEC 1 from working- or intermediate-class origins are less likely to have attained university or post-graduate degrees, and people with higher degrees tend to earn more; if the upwardly mobile had the same levels of qualifications as the stable, and none of their other attributes changed, the earnings gap would be (just under) half what it is. Conversely, differences in degree classification are not a strong contributor to the pay gap; all the explanatory work is done by qualifications.

It is important to note here, however, that the LFS lacks more fine-grained educational measures such as private schooling and elite university attendance, which are known to be strongly associated with both class origin and earnings in the UK (Macmillan, Tyler, and Vignoles 2014; Crawford and Vignoles 2014). Indeed, in previous work on the class ceiling within the Great British Class Survey (Authors, 2015), controls for whether or not respondents had attended private schools and/or elite universities contributed substantially to the class pay gap.

Model 3 shows earnings once "human capital" measures of job tenure, training and health are added. However, Table 4 makes clear that differences in human capital make little overall difference, and most of the difference is negative—if the upwardly mobile had the same job tenure as the stable, the pay gap would actually be larger. This, along with the education

controls, indicates that the dominant and individualising argument that inequalities in earnings can largely be explained in terms of individual knowledge, credentials and skill, appears fundamentally limited in a UK context.

Finally, Models 4 and 5 add measures of work context. Significantly, these appear to do the bulk of the work in accounting for the class pay gap. There are class-origin differences across all the variables included in this model, but the largest differences, and the largest effects on earnings, are for firm size, work region, and specific occupation. In terms of firms, people in companies with 500+ employees earn over 35% more than those in firms with 25 or fewer employees. Yet only 27% of people from working-class origins are in 500+ person firms, as compared with 37% of people from NS-SEC 1 origins; this difference accounts for nearly 10% of the class-origin pay gap. Of course it is impossible to say with these data precisely *why* those from lower class origins may not be entering the biggest and best paying firms, but recent work in the UK (Purcell, Elias, and Wilton 2004; Ashley 2015) has highlighted how "talent" is routinely evaluated by large graduate employers according to attributes rooted in middle-class socialisation. For example, recruiters routinely seek a "polished" appearance, strong debating skills, and a confident manner, traits these authors argue can be closely traced back to advantaged social backgrounds—what Bourdieu (1986) has termed middle-class "embodied cultural capital" (i.e. legitimate ways of speaking, dressing, being etc.). The work of Rivera (2012; 2015) has also highlighted the allied process of "cultural matching" in large elite firms, whereby those in senior positions, who are themselves disproportionately likely to be from stable backgrounds, misrecognise as merit social and cultural traits rooted in class backgrounds similar to their own.

There is also a huge gradient in pay by region, with those outside London earning between 13% and 23% less in England, and even less in Wales, Scotland, and Northern Ireland, than otherwise similar NS-SEC 1 respondents whose workplaces are inside the metropolis. Moreover, the inter-generationally stable are more than 1.5 times as likely to work in London as the long-range upwardly mobile (27% vs 16%, see Table A3). Again while it is beyond our scope to explain the reasons the upwardly mobile are less likely to work in London, a number of studies in the UK suggest that graduates from working-class backgrounds are both less willing and less financially able to capitalise on career opportunities in the capital. They often lack the familial economic resources required for geographical relocation, and are less able to negotiate

the high costs of housing and the precariousness of the early-career labour market once in London[25] (Furlong and Cartmel 2005; Pollard, Pearson, and Wilson 2004; Authors, 2015) Finally, as we saw in Table 2 above, there are substantial differences in the class-origin composition of different occupations within NS-SEC 1. These differences (and the differences in the average pay of these occupations; see Tables A2 and A7) explain 12.3% of the pay gap.

Taken together the variables in Model 5 account for almost half of the difference in earnings between the upwardly mobile and the intergenerationally stable. Yet, this leaves 54% of the difference "unexplained." The data at hand cannot account for this "unexplained" class pay gap. However, here we suggest two conceptual possibilities. First, it may be that the class pay gap can be explained by the behaviours, practices and resources of the upwardly mobile themselves. As previous work suggests, the mobile may specialise in less lucrative areas (Cook, Faulconbridge, and Muzio 2012; Ashley 2015), may be more reluctant to ask for pay raises, rely less on networks for work opportunities (Macmillan, Tyler, and Vignoles 2014), and in some cases even exclude themselves from seeking promotion because of anxieties about "fitting in" or abandoning class-cultural origins (Author2 2015).

Second, it may be that the upwardly mobile are the victims of class discrimination: that they are either consciously or unconsciously given fewer rewards in the workplace than those from more advantaged backgrounds. This may manifest as outright discrimination or snobbery (Author2 2015), or it may have to do with more tacit processes of homophily in contexts such as interviews or performance appraisals (Rivera 2012; Ashley 2015). That is, we believe many of the same well-documented processes that disadvantage women and ethnic minorities in the labor market and workplace may also affect the upwardly mobile.

Disaggregating the Class Pay Gap

While Tables 3 and 4 illustrate that the upwardly mobile face a significant pay penalty in higher professional and managerial occupations, it is important to deepen this analysis by asking whether or not this disadvantage looks the same across all of NS-SEC 1. In Figures 3-7 we therefore look at origin-income differences for men and women, whites and non-whites, NS-SEC 1.1 and 1.2, and finally for each of our fifteen occupational sub-groups. For simplicity of

[25] Based on geographic distribution of industries in the UK, it is also likely that more people with working class origins grew up outside London.

presentation and interpretation, in the two-way comparisons we collapse some of the categorical variables into fewer categories[26]; aside from these changes, all coefficients shown in Figures 3-7 are from models that are otherwise identical to those reported in Table 3, columns 1 and 5[27]. These figures were produced using *coefplot* in Stata (Jann 2014), and display the exponentiated point estimates of coefficients for origins, as well as the 90 (thicker lines) and 95 percent confidence intervals (thinner lines).

In terms of gender, Figure 3—combined with the predicted earnings deficit of about 12% for women reported in Table 3—illustrates that upwardly mobile women face a significant "double disadvantage" based on both class origin *and* gender. Long range upwardly mobile women have predicted earnings of about 25% less than otherwise-similar intergenerationally stable men.[28] Figure 4 shows the results for separate regressions for ethnic minorities and whites, and Figure 5 for five different age groups. The overall patterns for all these groups are similar: the most disadvantage for the long-range upwardly mobile, and less disadvantage the closer one's origins are to NS-SEC 1. There are not enough ethnic minorities in NS-SEC 1 occupations (only 300 with earnings data), however, for much statistical power: only the coefficient for long-range upwardly mobile ethnic minorities is statistically significant. In terms of age, pay penalties also tend to be larger for older age groups, and do not reach significance for the 30-39 age group. This suggests two possible explanations: first, it could be that the class ceiling is declining across cohorts, although the strikingly negative coefficient for the youngest long-range mobile group challenges this story. Perhaps more plausibly, and in keeping with existing research, the greater penalties experienced by those in their 50s could be the result of a cumulative effect over the course of their career (Hansen 2001b; Abramson 2015). We do not have the data to adjudicate between these accounts here, but whatever the cause we can see a pattern of greater pay disadvantage among older mobile respondents.

[Figures 3, 4 and 5 about here]

Beyond demographic differences, it is also important to examine whether the class ceiling is a uniform phenomenon across all high-status occupations, or whether it is the result of

[26] We use the four-category origin variable described in the data and methodology section, and we collapse the categories for educational qualifications, degree classification, wave, firm size, and birth country.
[27] Full results in Appendix.
[28] We use a model with an interaction term for origin*female to generate this estimate.

a marked pay gap in certain occupations. We look at this in two different ways. First, Figure 6 shows that the pattern of class-origin disadvantage is broadly similar across the subdivision of NS-SEC 1 into managers and professionals: those who have been upwardly mobile into either part of NS-SEC 1 from NS-SEC 3-5 or 6-8 origins face significant earnings gaps, while those from NS-SEC 2 origins do not[29].

[Figures 6, 7a and 7b about here]

Next, we look at our 15 occupational groups. For these last analyses, we collapse origins into a binary variable as we did in the decomposition shown in Table 4, comparing those from NS-SEC 3-8 origins with those from NS-SEC 1 origins, excluding NS-SEC 2 origin respondents from the models. We show the coefficients from the simplified version of the "base" model in the first column of Table 3 (with controls only for age, gender, ethnicity, birth country, and wave of response) in figure 7a, and the coefficients from the simplified version of Table 3's "full" model (column 5) in figure 7b. Taken together, these figures illustrate that there are striking levels of variation between the occupational groups in terms of the class pay gap. At one end of the scale, science, academia and work on built environment all have pay gaps estimated to be close to zero in both models. In contrast, the results reveal the scale of disadvantage experienced by the children of the working classes in the traditional professions of law, accountancy and finance. Not only are these occupations comparatively exclusive in terms of membership (see Table 2), but the socially mobile have predicted earnings around 20% less than their more socially privileged colleagues in Figure 7a. There are also substantial disadvantages for the upwardly mobile in comparatively more accessible occupational groups, such as IT, and among a number of public sector professions such as medicine where salaries are widely thought to be tightly regulated by the British government.

Even after the full battery of controls, earnings differences are substantial and significant in six of our groups: finance, accounting, public sector professions, protective civil servants, IT professionals, and business professionals, and near significant in a number of others, including

[29] We also examined whether there were differences between those with NS-SEC 1.1 and 1.2 *origins*; we found evidence for an earnings advantage for the children of higher managers, as compared with those of higher professionals, who were themselves in NS-SEC 1.1 occupations, and no evidence of advantage for either group in NS-SEC 1.2 or NS-SEC 1 as a whole. See Table A6.

medicine[30]. In finance, for example, the upwardly mobile have average predicted earnings less than 75% of the intergenerationally stable. Compared with the geometric average earnings for finance (see Table A2), this translates to an estimated annual pay gap of over £11,100 or about $16,700.[31]. This echoes similar results from previous work (Authors, 2015).

Finally, it is important to acknowledge the limitations of our analysis. While the LFS certainly provides the most detailed understanding of mobility into NS-SEC 1 to-date, the sample size for many individual occupations is small. Moreover, our results can only provide a snapshot of social mobility. For example, it is worth reiterating that the size and composition of many of these occupations in Britain has changed, and continues to change, considerably. This has an important bearing on our results. In 1972 when our oldest respondents were entering the workforce, for example, "higher salariat" occupations in Britain made up 13.6% of the (20 to 64 year old) male workforce (Goldthorpe, 1980 table 2.2); in the 2014 LFS data, the comparable figure has risen to 17.2% (our analysis). Similarly, the size of individual occupations has altered significantly. While occupations such as IT and higher education have grown rapidly in absolute terms since the 1970s, other elite occupations have remained relatively stable as a proportion of the workforce. All of these changes have important implications for understanding our findings. In particular, the relative disadvantage faced by the upwardly mobile is likely to vary significantly according to the size and composition of their occupation when they entered, and the particular, occupationally-specific, cohort they were part of. Further research might examine these cohort and compositional effects in more detail, or compare relative and absolute rates of mobility into NS-SEC 1 occupations.

Conclusion

This article provides the most fine-grained analysis to date of social mobility into and within Britain's higher professional and managerial occupations. The analysis contains two key

[30] Table A2 shows that these results are quite robust, whether the dependent variable is logged earnings, untransformed earnings, or earning percentile within each microclass. It further shows that while the controls explain the gap between the stable and the upwardly mobile as a group in law, there are significant differences between micro-class stable lawyers (the children of lawyers) and those from NS-SEC 1 origins with parents not in law, as well as between the long-range upwardly mobile and the stable.

[31] This may in fact be an under-estimate given the prevalence and size of annual pay bonuses in banking and finance, however the data on bonuses available in the LFS are too sparse for any further conclusions on this issue.

findings. First, we uncover meaningful variation in the social composition of different higher managerial and professional occupations; while "traditional" professions, such as medicine, law and finance, remain dominated by the children of managers and professionals, more technical occupations such as engineering and IT appear to recruit more widely. Second, we demonstrate that even when those from non-professional and managerial backgrounds are successful in entering many of Britain's most prestigious occupations, they face a powerful "class ceiling" in terms of earnings. This pay gap persists even after controlling for important factors such as age, gender, ethnic origin, education, human capital and various aspects of work context. This, we believe, points toward worrying and previously unobserved[32] disadvantage within some of Britain's most prestigious and highly-paid occupations – particularly in finance and accountancy.

A number of mechanisms that may be at work in producing this class pay gap. In particular, we find that the most prominent drivers (accounting for over 30%) are aspects of work context – specifically which particular occupations individuals enter, the greater likelihood that those from privileged backgrounds will enter bigger firms, and that their employment will be in London. In other words, a good portion of the gap is accounted for by what could be termed *sorting* mechanisms: although all respondents are employed in NS-SEC 1 they work in different places and different contexts, which in turn has a large effect on their earnings.

It is important to reiterate that this still leaves over 50% of the class pay gap "unexplained." Clearly, follow-up work is needed to interrogate this unaccounted difference. We would stress, however, that any such future work should focus on the numerous resources associated with class origin that we *cannot* measure here, such as parental income and wealth, powerful social networks, elite private school or university attendance, and cultural tastes or practices with widely shared legitimacy.

We also believe our approach and findings have two important implications for class analysis. First, we show that existing social mobility research fails to effectively capture the persistent impact of class origin in shaping people's lives. Both big-class and micro-class approaches proceed from the logic of the standard mobility table which compares identically measured social origins and destinations at usually two points in time. However, we believe this

[32] It is important to stress that we are not suggesting that the class pay gap is necessarily new, however.

fundamentally elides the "stickiness" of class origin. In particular, it fails to capture how the resources that flow from class origin often shape individual lifecourses well beyond occupational entry. To some researchers of class, this may seem a somewhat banal observation. After all a wealth of qualitative research indicates that class identities tend to always carry – at least in some form—the symbolic baggage of the past, and this historical imprint often has important consequences for how people act in the present (Skeggs 1997; Lareau 2015). However, in the dominant quantitative arena of class analysis, sensitivity to the linger of class origin is often absent. In this regard, we believe our introduction of the feminist concept of a "glass ceiling" may act as a vital means of sharpening the tools of class analysis. In particular, it provides an analytic strategy with which researchers can begin, as we have done here, to interrogate the hidden barriers that those from low class origins may face *within* elite or prestigious occupations.

Second and very much relatedly, we believe these analyses demonstrate that a person's class *destination* is never fully captured by big-class *or* micro-class occupational variables. Big-classes simply hide too much pertinent information. Occupations within NS-SEC1, for example, are characterised by huge variation in rates of mobility, differences that surely shed important light on the precise channels through which intergenerational class inequality is reproduced. Yet meso- and micro- classes are also not sufficient for understanding destination. While these groupings certainly provide a more accurate *indication*—their members are clearly closer in earnings and other resources than those in their wider macro-class—even they lack information about intra-occupational position and earnings, and how these vary according to class origin. Indeed, following Bourdieu (1987) and more recently even Goldthorpe[33], we argue here that a full understanding of class destination must take into account multiple indicators of social position or resources. Examining income and occupation in tandem, as we do here, represents one such way forward.

Yet there is much more to do if we are to better understand the "long shadow" that class origins[34] cast on life outcomes (Lareau, 2015). In particular we stress the need for more longitudinal research that can go beyond static measures of earnings and occupation to better

[33] In his keynote address to the 2014 Spring RC 28 Meeting in Budapest.
[34] Here, we are clearly focusing on class destination, but we would also stress the need for more differentiated understandings of class origin, such as including measures of parental income and education (not available in the LFS) or examining differences between specific parental occupations.

elucidate intra-occupational *trajectories* and their relationship to class origin. This can be achieved by making further use of panel data sources, as demonstrated by (Bühlmann 2010), but also by using qualitative tools such as lifecourse interviews (Author2 2015) or longitudinal tracking of matched cohorts of employees (Bathmaker, Ingram, and Waller 2013). We also encourage researchers to broaden methodological repertoires away from the standard mobility table. In the past one of the key obstacles in operationalising more innovative and fine-grained approaches to social mobility has been the lack of large-scale representative data. However, increasingly, new sources such as tax data in the U.S (Mitnik et al. 2015) or census material in Norway (Flemmen 2012) are emerging to allow us to bridge this gap. Taking advantage of these new empirical materials, or innovations in existing data sets as we do here, is likely to continue to reveal previously unrecognised inequalities—such as the class ceiling—that are profoundly important in reproducing class disadvantage.

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Table 1: Class Origins and Destinations, all NS-SEC categories

	Respondent's NS-SEC Group/Destinations					
	1	**1.1**	**1.2**	**2**	**3 to 8**	***All***
	NS-SEC 1 All	*Higher Managers*	*Higher Prof-essionals*	*Lower Managers & Prof-essionals*	*All Others*	*Total*
Parent's NS-SEC Group/Origins						
1 Higher managerial and professional	26.6%	23.1%	27.7%	18.5%	9.3%	*14.1%*
2 Lower managerial and professional	20.6%	17.6%	21.5%	20.4%	11.5%	*15.0%*
3 Intermediate occupations	12.2%	12.0%	12.3%	11.5%	9.1%	*10.1%*
4 Small employers & own account workers	11.2%	13.6%	10.4%	12.9%	15.8%	*14.4%*
5 Lower supervisory and technical	10.5%	12.5%	9.9%	11.2%	12.2%	*11.7%*
6 Semi-routine occupations	7.1%	8.0%	6.8%	10.1%	13.9%	*12.0%*
7 Routine occupations	9.5%	11.0%	9.1%	12.9%	22.6%	*18.3%*
8 No earner in household	2.3%	2.3%	2.3%	2.6%	5.6%	*4.4%*
total	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*
percent of population	*14.2%*	*3.3%*	*10.8%*	*25.1%*	*60.8%*	*100.0%*
N	*6,418*	*1,499*	*4,919*	*11,362*	*27,572*	*45,356*

Note: Total n=45,356. Ages 23-69, not in full time education, with origin and destination data. Percentages above the *total* row are column percentages: they give the percent of respondents *from* each origin *in* each NS-SEC Class or grouping, i.e. the 26.6% in the upper left indicates that 26.6% of respondents in NS-SEC 1 occupations have NS-SEC 1 origins. Percentages calculated using survey weights; ns are actual, unweighted number of respondents in each category.

Table 2: Social Origins of Adults (23-69) in Higher Managerial and Professional Occupations

	MICRO-STABLE	NS-SEC 1	NS-SEC 2	NS-SEC 3 TO 5	NS-SEC 6 TO 8	*N*
Medical practitioners	**17.2%**	**52.3%**	**22.4%**	**20.6%**	**4.5%**	***260***
Law	**8.1%**	**40.9%**	**18.9%**	**23.8%**	**16.6%**	***219***
Barristers and judges		46.6%	20.5%	13.7%	17.8%	*35*
Legal professionals n.e.c.		40.4%	16.5%	21.1%	22.0%	*55*
Solicitors		39.0%	19.1%	27.6%	13.8%	*129*
Other Life Science Professionals	**3.0%**	**37.2%**	**19.9%**	**31.8%**	**11.3%**	***183***
Speech and language therapists		46.7%	36.7%	19.3%	0.0%	*17*
Veterinarians		45.7%	23.9%	26.1%	5.0%	*26*
Dental practitioners		43.0%	19.8%	31.4%	5.8%	*46*
Psychologists		36.6%	25.4%	32.4%	5.2%	*41*
Pharmacists		26.2%	9.7%	37.9%	26.2%	*53*
Other Professionals	**6.2%**	**33.5%**	**23.0%**	**25.7%**	**17.9%**	***148***
Aircraft pilots and flight engineers		44.6%	21.4%	17.5%	16.8%	*31*
Clergy		34.4%	17.7%	30.2%	17.7%	*58*
Environment professionals		33.8%	17.6%	29.7%	17.6%	*40*
Environmental health professionals		10.3%	54.8%	14.8%	19.7%	*19*
Finance	**4.6%**	**30.3%**	**16.0%**	**38.3%**	**15.6%**	***253***
Brokers		35.8%	15.8%	32.6%	15.8%	*42*
Financial mngrs and directors		29.1%	16.1%	39.3%	15.6%	*210*
Finance and investment analysts and advisers		0.0%	0.0%	100.0%	0.0%	*1*
Scientists	**2.2%**	**29.0%**	**23.9%**	**31.7%**	**15.3%**	***256***
Biological scientists and biochemists		31.7%	15.9%	33.7%	18.7%	*140*
Physical scientists		33.3%	37.9%	25.8%	4.7%	*33*
Social and humanities scientists		30.0%	17.8%	50.0%	0.0%	*16*
Natural and social science professionals n.e.c.		22.2%	42.9%	14.8%	19.0%	*31*
Chemical scientists		20.3%	25.0%	37.5%	15.6%	*36*
Higher education teaching professionals	**3.9%**	**29.0%**	**26.1%**	**30.3%**	**15.0%**	***170***
Business Professionals	**2.2%**	**27.0%**	**21.7%**	**31.3%**	**20.0%**	***977***
Business and related research professionals		31.6%	29.5%	22.1%	16.8%	*45*
Management consultants and business analysts		28.2%	26.9%	30.9%	14.4%	*201*
Business and finan. Proj. mngmnt professionals		27.7%	22.3%	33.0%	17.0%	*231*
Sales accounts and business development mngrs		25.8%	18.8%	30.8%	24.7%	*458*
Research and development mngrs		26.3%	16.3%	41.3%	16.3%	*42*

Table 2, Continued

	Micro-Stable	NS-SEC 1	NS-SEC 2	NS-SEC 3 to 5	NS-SEC 6 to 8	*N*
Accountants	**4.6%**	**25.6%**	**18.8%**	**40.3%**	**15.7%**	***330***
Taxation experts		29.2%	12.2%	29.2%	30.6%	*39*
Chartered and certified accountants		27.8%	17.5%	38.8%	16.0%	*223*
Insurance underwriters		16.2%	18.9%	40.5%	24.3%	*36*
Actuaries, economists and statisticians		16.1%	17.7%	32.3%	33.9%	*32*
Built Environment Professionals	**1.5%**	**25.5%**	**17.1%**	**37.2%**	**20.3%**	***151***
Architects		28.8%	17.8%	43.2%	10.2%	*62*
Chartered surveyors		23.4%	17.1%	39.6%	18.9%	*58*
Town planning officers		21.5%	21.5%	35.4%	20.0%	*31*
Managers and Directors in Business	**7.3%**	**24.4%**	**17.7%**	**36.7%**	**21.2%**	***788***
Advertising and public relations directors		47.1%	28.2%	14.1%	9.7%	*17*
Purchasing mngrs and directors		39.3%	7.3%	46.4%	8.3%	*48*
Functional mngrs and directors n.e.c.		34.2%	17.1%	25.6%	23.1%	*66*
Chief executives and Snr officials		30.2%	17.0%	41.5%	10.4%	*56*
Marketing and sales directors		29.4%	21.7%	34.4%	14.4%	*88*
Human resource mngrs and directors		27.1%	15.6%	38.7%	18.6%	*112*
Production mngrs and dirs in mining and energy		20.9%	0.0%	65.5%	15.5%	*7*
Production mngrs and dirs in manufacturing		17.4%	18.4%	35.7%	28.4%	*332*
Property, housing and estate mngrs		14.4%	18.9%	45.9%	20.7%	*62*
Protective Civil Service	**8.2%**	**24.2%**	**11.8%**	**35.9%**	**28.1%**	***83***
Officers in armed forces		37.3%	3.1%	41.2%	18.8%	*27*
Snr offcrs in fire, amblnc, prison and rel. srvcs		23.0%	10.5%	25.6%	41.9%	*24*
Snr police officers		21.5%	6.1%	48.5%	22.1%	*18*
Probation officers		5.6%	36.3%	28.1%	29.3%	*14*
Information Technology	**1.9%**	**23.9%**	**24.3%**	**33.0%**	**18.9%**	***752***
IT and telecommunications directors		31.0%	13.4%	42.3%	13.5%	*38*
IT project and programme mngrs		25.7%	30.9%	29.3%	14.7%	*97*
IT specialist mngrs		24.8%	21.9%	32.6%	20.7%	*227*
Programmers and software development profs		23.1%	25.2%	33.7%	17.7%	*277*
IT business analysts, archtcts & systms designers		20.9%	23.7%	31.3%	24.2%	*113*
Engineers	**8.6%**	**21.1%**	**21.2%**	**36.9%**	**20.7%**	***462***
Mechanical engineers		30.8%	18.9%	31.4%	19.5%	*89*
Civil engineers		24.9%	18.1%	36.2%	20.3%	*92*
Engineering professionals n.e.c.		19.0%	15.5%	38.9%	26.5%	*120*
Electronics engineers		16.1%	22.6%	38.7%	22.6%	*35*
Design and development engineers		15.9%	25.6%	42.7%	15.9%	*88*
Electrical engineers		12.1%	39.5%	31.6%	17.1%	*38*

Table 2, Continued

	Micro-Stable	NS-SEC 1	NS-SEC 2	NS-SEC 3 to 5	NS-SEC 6 to 8	*N*
Public Sector Managers & Professionals	**1.1%**	**16.2%**	**23.7%**	**41.1%**	**19.0%**	***303***
Education advisers and school inspectors		22.7%	22.7%	30.3%	24.2%	*39*
Snr professionals of educational establishments		18.0%	24.9%	39.2%	18.0%	*126*
Health servcs and public health mngrs and dirs		16.4%	14.8%	45.9%	23.0%	*69*
Social servcs mngrs and directors		10.1%	28.4%	43.1%	17.4%	*60*
Elected officers and representatives		0.0%	43.5%	54.7%	0.0%	*9*
Total	***4.8%***	***27.6%***	***20.9%***	***33.4%***	***18.2%***	***5335***

Note: Percentages for stable include the micro-stable. All percentages calculated using recommended survey weights, n=5335 (some respondents who can be classed as NS-SEC 1 do not have 4-digit SOC 2010 codes and cannot be included here). Appendix Table A7 gives Soc 2010 codes for each individual occupation, and standard errors for proportions from each social origin group.

Table 3: Models of Earnings Gaps

	Model I	Model II	Model III	Model IV	Model V
	Only Demo-graphic Controls	Adding Education	Adding Human Capital	Adding Work Context	Adding Specific Occu-pations
Origins (vs NS-SEC 1 Parents)					
NS-SEC 2 (Lower Mgrs & Profs)	0.929**	0.946*	0.947*	0.955*	0.974
NS-SEC 3 (Intermediate Occs)	0.880***	0.916**	0.913***	0.932**	0.947*
NS-SEC 4 (Self-employed)	0.833***	0.872***	0.870***	0.899***	0.917**
NS-SEC 5 (Lower Supervisory & Tech)	0.872***	0.911**	0.907**	0.916**	0.937*
NS-SEC 6 (Semi-Routine Occs)	0.818***	0.878***	0.874***	0.891***	0.911**
NS-SEC 7 (Routine Occs)	0.792***	0.848***	0.845***	0.867***	0.883***
NS-SEC 8 (No Earner in Household)	0.834***	0.886*	0.889*	0.881**	0.897*
Age (in years)	1.091***	1.095***	1.090***	1.085***	1.080***
Age squared	0.999***	0.999***	0.999***	0.999***	0.999***
Female	0.862***	0.855***	0.853***	0.887***	0.882***
Not White	1.051	1.024	1.024	1.004	0.983
Country of Birth (vs England)					
Outside the UK	1.023	0.997	1.003	0.954	0.954
Northern Ireland	0.919	0.92	0.907	1.066	1.039
Scotland	1.002	0.98	0.976	1	1.007
Wales	0.975	0.955	0.948	1.021	1.01
Paid Hours Worked in Week	1.021***	1.022***	1.022***	1.021***	1.021***
Educational Qualifications (vs Uni Degree)					
PhD		1.01	1.011	1.065*	1.139***
MA		1.047	1.049	1.038	1.059*
Post-Grad Ed Cert		0.968	0.972	1.039	1.065
Other Post-Grad		0.994	0.995	1.065	1.014
Higher Ed		0.810***	0.808***	0.827***	0.837***
A-Levels		0.819***	0.817***	0.815***	0.818***
GCSEs		0.764***	0.763***	0.756***	0.751***
Other Qualifications		0.790**	0.796**	0.755***	0.784***
No Qualifications		0.619***	0.627***	0.622***	0.626***

Table 3 Continued

	Model I Only Demographic Controls	Model II Adding Education	Model III Adding Human Capital	Model IV Adding Work Context	Model V Adding Specific Occupations
Degree Class (vs 2:2/Lower 2nd Class)					
N/A (e.g. no degree, foreign degree)		1.079*	1.074*	1.088**	1.075*
Pass		1.044	1.035	1.156*	1.047
Third Class		1.144*	1.137*	1.114*	1.089*
2:1/Higher Second Class		1.118***	1.118***	1.121***	1.105***
1st Class		1.116**	1.116**	1.110**	1.081*
Current Health Problems Scale			0.972*	0.975*	0.974**
Past Health Problems Scale			0.965	0.959	0.968
Job Tenure in Years			1.005***	1.004***	1.004***
Job-Related training last 3 months			1.027	1.032*	1.024
Region of Work (vs London)					
North East				0.762***	0.776***
North West				0.794***	0.815***
Yorkshire & Humberside				0.800***	0.816***
East Midlands				0.790***	0.803***
West Midlands				0.787***	0.804***
Eastern				0.813***	0.827***
South East				0.866***	0.874***
South West				0.799***	0.809***
Wales				0.736***	0.778***
Scotland				0.819***	0.843***
North Ireland				0.638***	0.685***
Industry (vs Public Admin, Educ & Health)					
Agriculture, forestry and fishing				0.85	0.868
Energy and water				1.055	1.099
Manufacturing				1.043	1.108**
Construction				0.946	1.004
Distribution, hotels and restaurant				1.022	1.063
Transport and communication				1.163***	1.162***
Banking and finance				1.072*	1.102***
Other services				0.792***	0.94

Table 3 Continued

	Model I Only Demographic Controls	Model II Adding Education	Model III Adding Human Capital	Model IV Adding Work Context	Model V Adding Specific Occupations
Public Sector (vs Private)				0.877***	0.909***
Firm Size (vs less than 25 employees)					
25 to 49				1.257***	1.219***
50 to 499				1.251***	1.219***
500 or more				1.356***	1.315***
Professionals (vs Managers)				0.906***	
Constant	56.76***	47.51***	52.12***	55.20***	78.35***
N	*3377*	*3377*	*3377*	*3377*	*3377*
r2	*0.222*	*0.268*	*0.275*	*0.386*	*0.433*

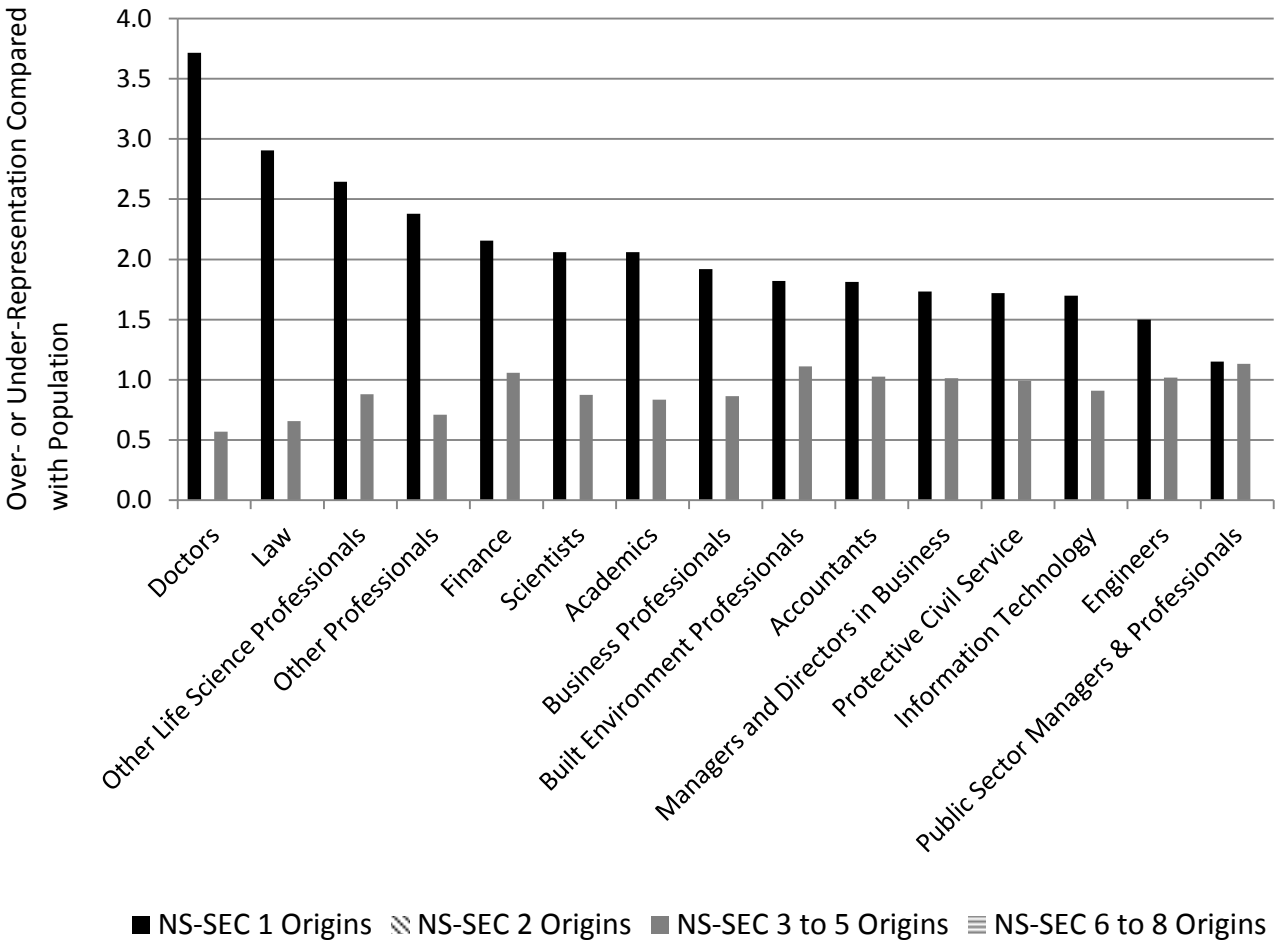
Note: * p<.05 **p<.01 ***p<.001. Coefficients are exponentiated and can be read as predicted percent changes. Cases missing data on any variable deleted from all models. Survey weights used. Models also include dummy variables for all individual occupations included in models, and for the wave in which the respondent reported income. Average values for each variable for each origin group given in Appendix Table A3.

Table 4: Oaxaca Blinder Decomposition

OVERALL	LOGGED VALUES	EXPONENTIATED VALUES	P>T
NS-SEC 1 origins	6.729	£ 836.4	0.00
NS-SEC 3 to 8 origins	6.582	£ 721.8	0.00
difference	0.147	115.9%	0.00
explained	0.068	107.0%	0.00
unexplained	0.080	108.3%	0.00
EXPLAINED	CONTRIBUTION TO THE PAY GAP	PERCENT OF DIFFERENCE EXPLAINED	P>T
Base Model Controls		*-25.0%*	
Age & Age Squared	-0.0351	-23.8%	0.00
Female	-0.0049	-3.4%	0.07
Not White	0.0002	0.2%	0.70
Country of Birth	-0.0012	-0.8%	0.59
Quarter Responded to Survey	0.0010	0.7%	0.36
Paid Hours Worked	0.0032	2.2%	0.64
Education		*45.0%*	
Educational Qualifications	0.0698	47.4%	0.00
Degree Classification	-0.0036	-2.4%	0.32
Human Capital		*-5.3%*	
Current Health Problems Scale	0.0011	0.7%	0.26
Past Health Problems Scale	-0.0001	-0.1%	0.81
Job Tenure in Years	-0.0087	-5.9%	0.00
Job-Related training last 3 months	0.0019	1.3%	0.16
Work Context		*31.2%*	
Region of Work	0.0222	15.1%	0.00
Industry	-0.0039	-2.7%	0.23
Public Sector	-0.0065	-4.4%	0.03
Firm Size	0.0142	9.6%	0.00
Specific Occupation	0.0182	12.3%	0.02
sum	*0.0677*	*46.0%*	

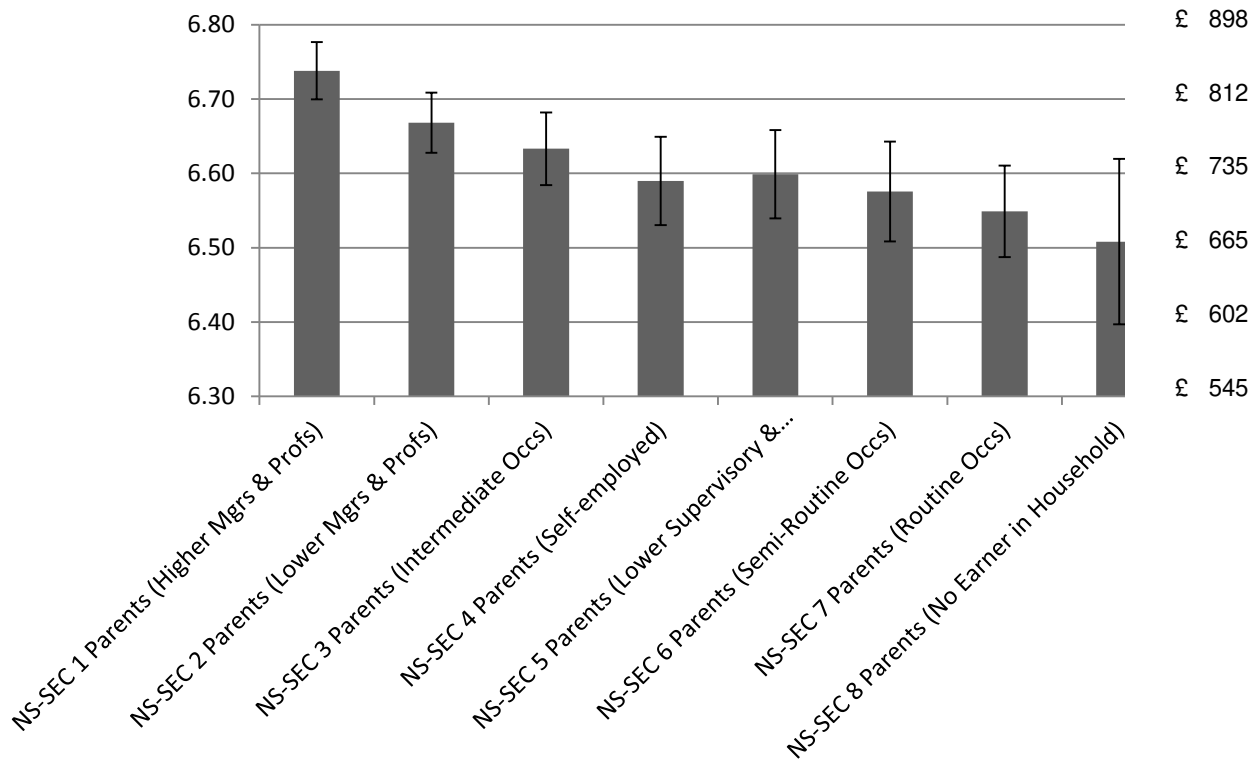
Note: models identical to those in Column 5 of Table 3, except that only NS-SEC 3 to 8 origin respondents (n=1758) were compared to NS-SEC 1 origin respondents (n=887). Variables are grouped into the same categories as in the 5 nested models in Table 3, and the effects for each group and sub-group of variables are shown, rather than individual categories for each variable. We used the "pooled" model, where the decomposition is based on comparing the models for each group to a pooled model containing a dummy variable for the groups, and included a term to make the choice of reference category for sets of dummy variables in the models irrelevant to the estimation of the effects of that categorical variable. Results obtained using the *oaxaca* command in Stata 13 (Jann 2008).

Figure 1: Over- and Under-Representation of Social Origins in Higher Managerial and Professional Occupations



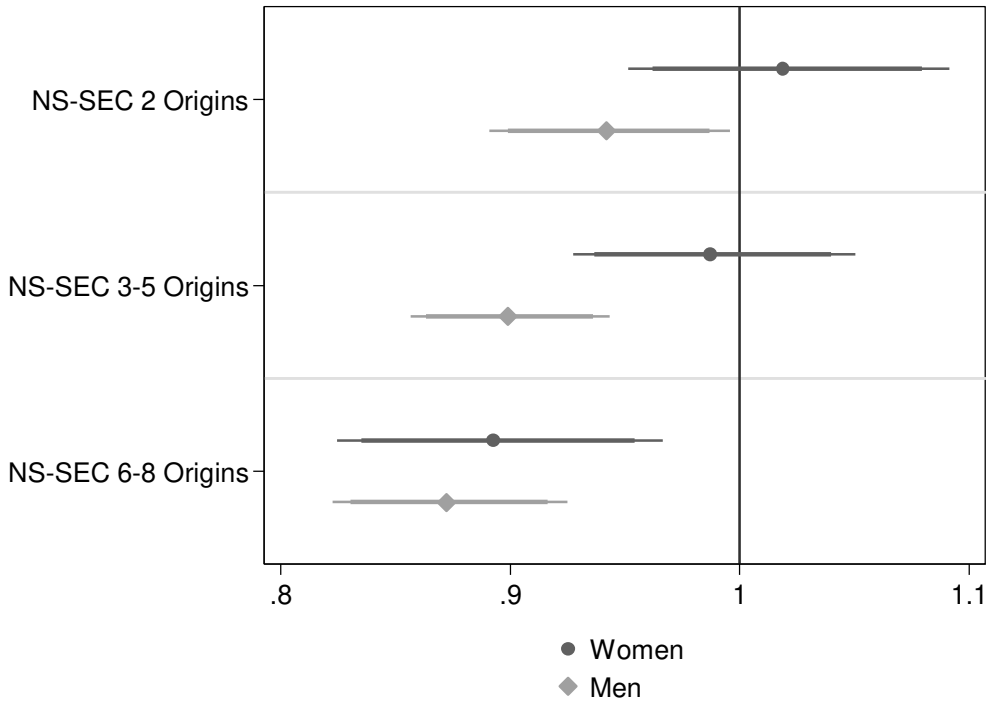
Note: All respondents age 23-69 with origin & destination information in higher managerial and professional occupations, not in full time education. N==5,327. Height of bars gives the over- or under-representation of each origin group in each occupational group. This is generated by dividing the percentage of people from an origin group in each occupation by the percentage of people in our target population as a whole from that origin; values over 1 indicate over-representation, and a value of exactly 1 would mean people from a given social origin are no more or less likely to be found in that occupational group than in the rest of the population; for example, it can be seen that people with NS-SEC 1 origins are over 3.5 times over-represented in medicine, and only about 1.15 times as likely to be found among public sector managers as anywhere else. Appendix Table A7 gives standard errors for proportion stable in each individual occupation.

Figure 2: Mean Logged Weekly Earnings by Origin for those in NS-SEC 1



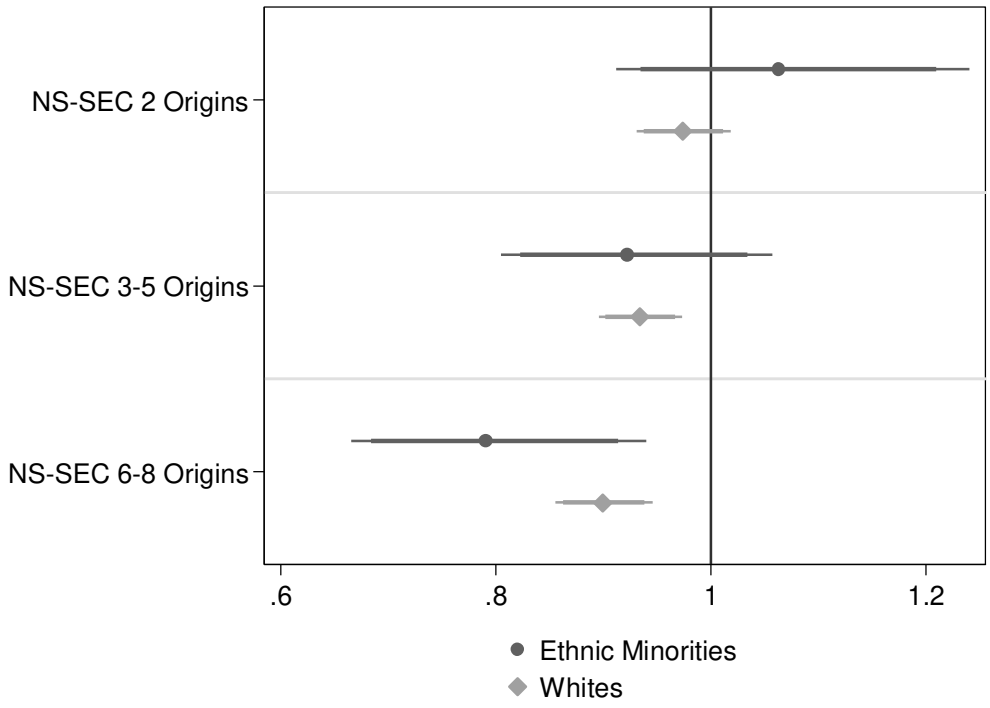
Note: Mean natural log of weekly earnings for all those aged 23-69, in NS-SEC 1 occupations, not in full time education, with origin, destination, and earnings data, n=3510. Mean logged earnings given on left axis, exponentiated value on right axis. 95% confidence margins shown.

Figure 3: Class-Origin Earnings Gaps by Gender



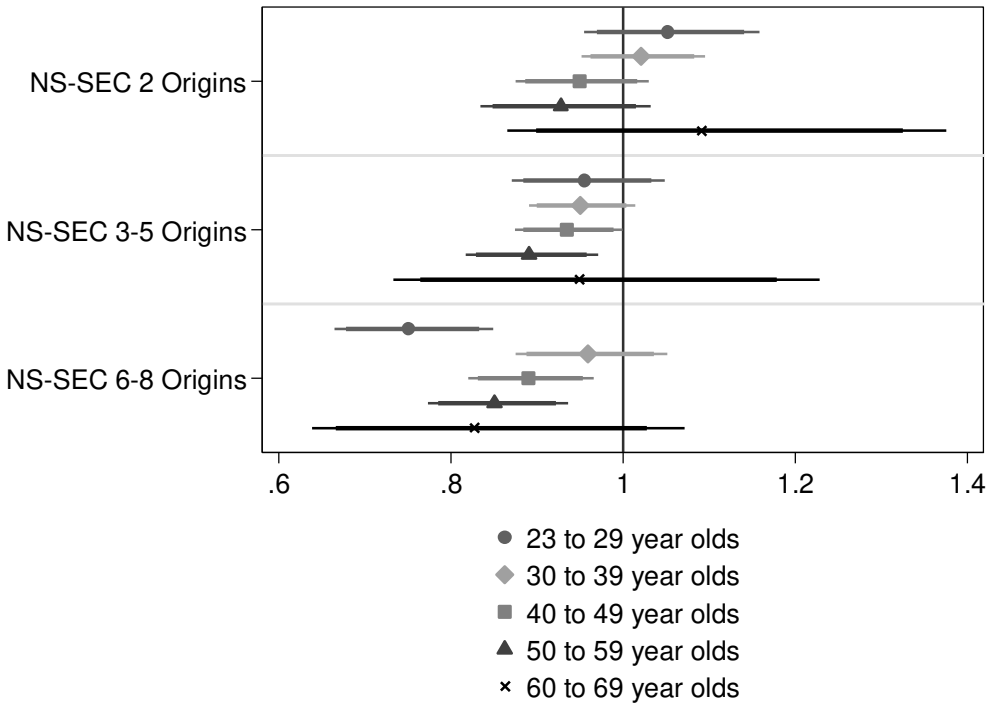
Note: Coefficients for upwardly mobile origins (compared to inter-generationally stable) from models of logged gross weekly earnings for men only (n=2097) and women only (n=1216) with full controls, i.e. same covariates (with some categories collapsed) as those in Column 5 of Table 3. The marker is the point estimate for each coefficient, the thinner region of each bar is the 95% confidence interval, and the thicker region is the 90% confidence interval; bars that do not cross the vertical line at 1 are statistically significant at p<.05. Created in Stata 13 using the *coefplot* command (Jann 2014).

Figure 4: Class-Origin Earnings Gaps by Ethnicity



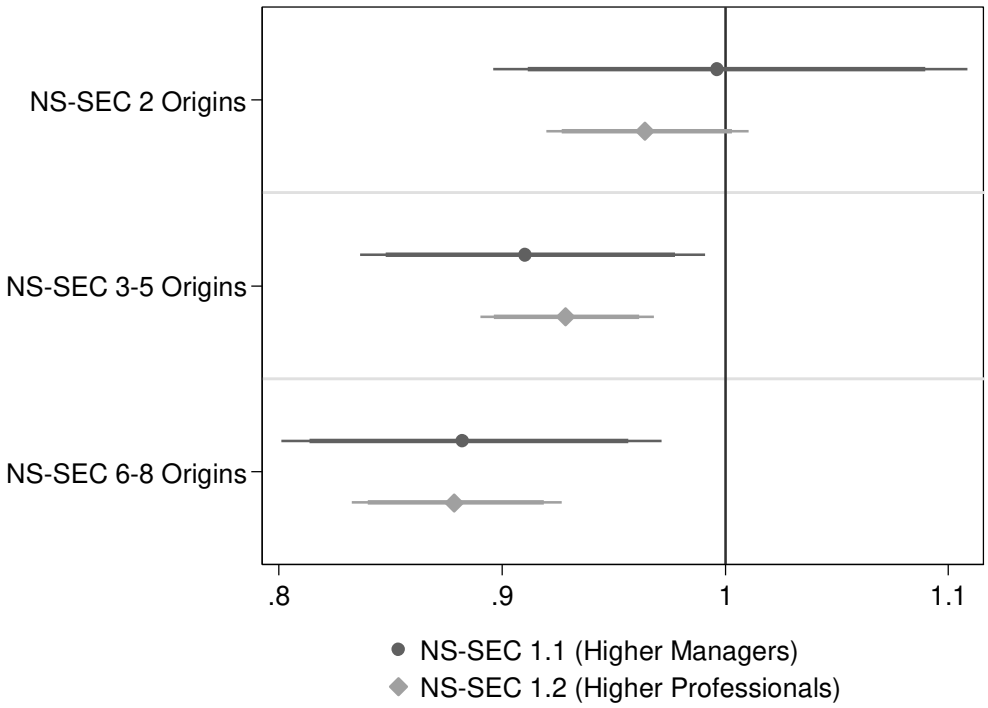
Note: Coefficients for upwardly mobile origins (compared to inter-generationally stable) from models of logged gross weekly earnings for ethnic minorities only (n=300) and whites only (n=3013) with full controls, i.e. same covariates (with some categories collapsed) as those in Column 5 of Table 3. The marker is the point estimate for each coefficient, the thinner region of each bar is the 95% confidence interval, and the thicker region is the 90% confidence interval; bars that do not cross the vertical line at 1 are statistically significant at $p<.05$. Created in Stata 13 using the *coefplot* command (Jann 2014).

Figure 5: Class-Origin Earnings Gaps by Age Group



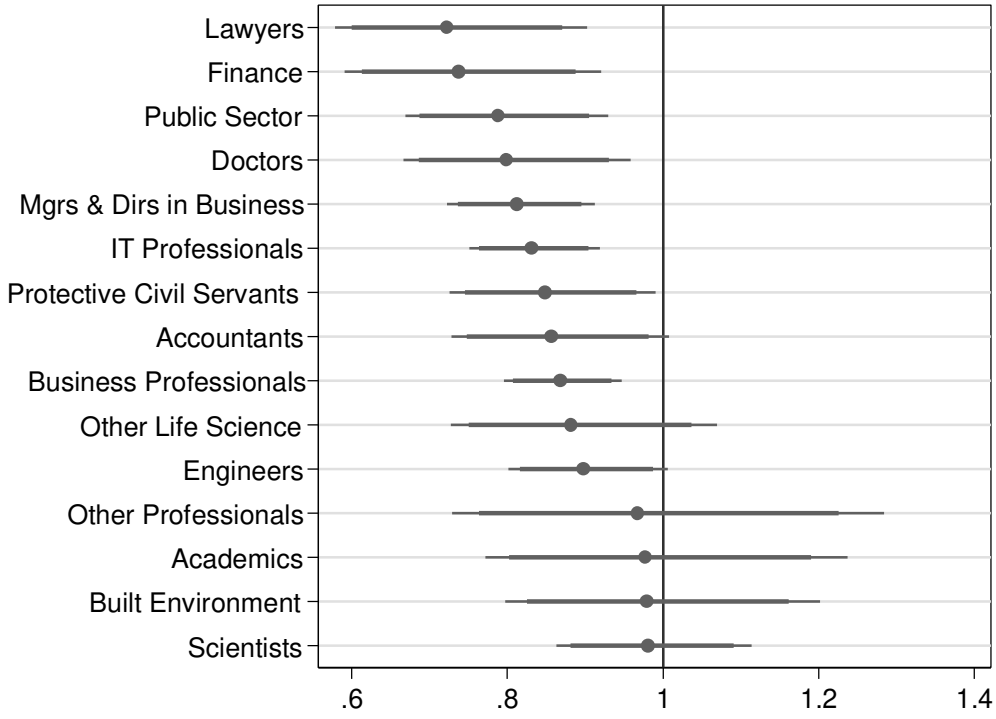
Note: Coefficients for upwardly mobile origins (compared to inter-generationally stable) from models of logged gross weekly earnings for each age group (n=265 for 23 -29 group, n=952 for 30-39 group, n=1055 for 40-49 group, n=786 for 50-59 group, and n=250 for 60-69 group) with full controls, i.e. same covariates (with some categories collapsed) as those in Column 5 of Table 3. The marker is the point estimate for each coefficient, the thinner region of each bar is the 95% confidence interval, and the thicker region is the 90% confidence interval; bars that do not cross the vertical line at 1 are statistically significant at p<.05. Created in Stata 13 using the *coefplot* command (Jann 2014).

Figure 6: Class-Origin Earnings Gaps in NS-SEC 1.1 vs 1.2



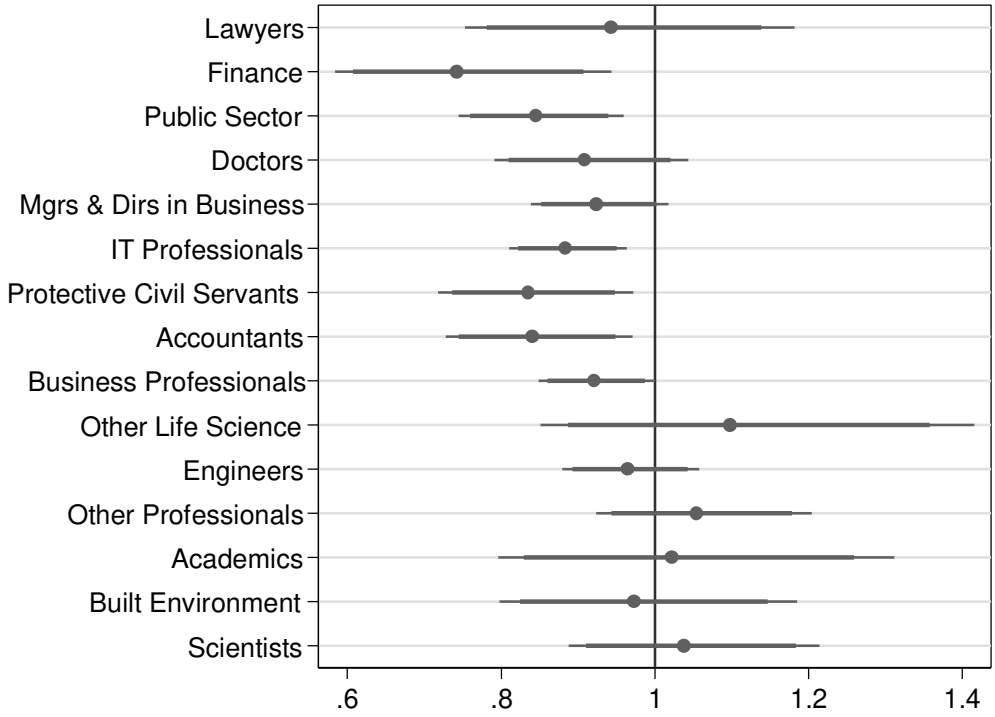
Note: Coefficients for upwardly mobile origins (compared to inter-generationally stable) from models of logged gross weekly earnings for higher managers only (n=815) and higher professionals only (n=2498) with full controls, i.e. same covariates (with some categories collapsed) as those in Column 5 of Table 3. The marker is the point estimate for each coefficient, the thinner region of each bar is the 95% confidence interval, and the thicker region is the 90% confidence interval; bars that do not cross the vertical line at 1 are statistically significant at p<.05. Created in Stata 13 using the *coefplot* command (Jann 2014).

Figure 7a: Class-Origin Earnings Gaps within Microclasses, Base Model



Note: Coefficients for upwardly mobile origins (those from NS-SEC 3 to 7 origins, compared to inter-generationally stable) from models of logged gross weekly earnings for each "microclass" group (n=76 for Lawyers, n=129 for Finance Managers, n=164 for Public Sector Managers & Professionals, n=108 for Doctors, n=421 for Managers & Directors Business, n=377 for IT Professionals, n=47 for Protective Civil Servants, n=161 for Accountants & Related, n=501 for Business Professionals, n=74 for Other Life Science Professionals, n=221 for Engineers, n=76 for Other Professionals, n=92 for Academics, n=60 for Built Environment Professionals, n=138 for Scientists) with only base controls , i.e. the same covariates (with some categories collapsed) as those in Column 1 of Table 3. The marker is the point estimate for each coefficient, the thinner region of each bar is the 95% confidence interval, and the thicker region is the 90% confidence interval; bars that do not cross the vertical line at 1 are statistically significant at $p<.05$. Created in Stata 13 using the *coefplot* command (Jann 2014).

Figure 7b: Class-Origin Earnings Gaps within Microclasses, Full Model



Note: Coefficients for upwardly mobile origins (those from NS-SEC 3 to 7 origins, compared to inter-generationally stable) from models of logged gross weekly earnings for each "microclass" group (n=76 for Lawyers, n=129 for Finance Managers, n=164 for Public Sector Managers & Professionals, n=108 for Doctors, n=421 for Managers & Directors Business, n=377 for IT Professionals, n=47 for Protective Civil Servants, n=161 for Accountants & Related, n=501 for Business Professionals, n=74 for Other Life Science Professionals, n=221 for Engineers, n=76 for Other Professionals, n=92 for Academics, n=60 for Built Environment Professionals, n=138 for Scientists) with all controls , i.e. the same covariates (with some categories collapsed) as those in Column 5 of Table 3. The marker is the point estimate for each coefficient, the thinner region of each bar is the 95% confidence interval, and the thicker region is the 90% confidence interval; bars that do not cross the vertical line at 1 are statistically significant at $p<.05$. Created in Stata 13 using the *coefplot* command (Jann 2014).

Data and Methodology Appendix

Data note

The UK Labour Force Survey has a uses a rolling panel survey design, with each respondent contacted in five consecutive quarters, but earnings only reported by each respondent in their 1st and 5th quarters of participation. Thus, the July-September LFS Quarterly survey data only contain earnings information for two-fifths of respondents willing to give earnings data (those who were in their first or fifth survey-wave); in order to obtain a larger sample size for these analyses, data were obtained with a special user license from the UK Data Archive at Essex University, with permission from the Office of National Statistics. These records contained individual-level identifiers allowing us to link respondents for whom July-September 2014 was their 2nd, 3rd, or 4th wave to their first wave in the survey, and thereby obtain a 4-quarter pooled dataset with earnings data for all eligible respondents. Earnings compared in these models are thus from four different consecutive quarters in 2013-14, however results for models run on each wave separately return substantively identical results to those reported in Table 3, and we include a dummy variable for survey wave/income-reporting quarter in all regressions we report. Occupations used in models of origin-destination association (Tables 1 and 2 and Figure 1) are occupation at the time the origin question was asked, July-September 2014. In models of earnings (Tables 3 and 4, Figures 2-7b), we use occupations and other variables values from the same wave as the earnings data was given; that is, for example, job-related-training in the last 3 months refers to three months immediately before earnings data.

Weighting: the Labour Force Survey provides two weights with each survey: one for making inferences *about earnings* to the population of employed persons, and another for inference about anything other than income. However, the earnings weight provided was calculated based only on each quarter's respondents, and is inappropriate for use with the pooled data; instead, we use the person weight (*pwt14*) given for each respondent in the July-September 2014 quarter, which accounts for attrition in responses over the five waves of the survey and other aspects of survey design. On comparing these results to those with the earnings weight (*piwt14*) and without weights, we found there to be no meaningful differences.

Variable definitions and notes

Exact question wordings available from the Office of National Statistics at *http://www.ons.gov.uk/ons/guide-method/method-quality/specific/labour-market/labour-market-statistics/volume-2---2014.pdf*.

NS-SEC categories and Professional vs Managerial: from *nsecm10* and *nsecmj10*

Origin: from *smsoc10*, using Office of National Statistics Table 10 (http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html) to assign parents' 4-digit occupations to NS-SEC classes; for the 325 cases with only 3-digit soc10 origin codes, matched them to the NS-SEC class for the largest number of

4-digit codes within that 3-digit code. The 1057 respondents with only 2-digit or 1-digit origin codes were not included in these analyses.

NS-SEC Classes (including higher professional vs higher managerial distinction): from *nsecm10* and *nsecmj10.*

Occupations and Occupational Groups: from *soc10m*, for respondents with 4-digit occupational codes, grouped all those categorized as NS-SEC 1 into 15 groups.

Micro-class origin: coded parents with 4-digit occupational codes into the same groups as used in our occupational groups; respondents coded as "micro-class stable" if parent was in same occupational group as respondent.

Earnings: from *grsswk* for weekly gross earnings, from *hourpay* for hourly gross earnings, natural log of *grsswk* is the dependent variable in earnings analyses.

Age, **Age squared** from *age* in years.

Female: *sex.*

Not White: from *ethukeul.*

Country of Birth: from *cry12.*

Paid hours: *paidhru.*

Educational Qualifications: from *hiqul11d* and *higho*.

Degree Classification: from *degcls7.*

Current Health Problems Scale: ranges from 0 to 4; 0 if no current health problems reported. Sum of *lnglst* (recoded to 1 if health problem lasting more than 1 year, .5 if not sure, 0 otherwise), *limact* (recoded to 2 if health problem limits activity a lot, 1 if a little, 0 if not at all), and *limita* (1 if health problems affect work, 0 otherwise).

Past Health Problems Scale: ranges from 0 to 2; 0 if no past health problems, 1 if any health problems lasting longer than one year (*healyr*) 2 if those also limited activity (*healyl*).

Job-Related Training: from *ed13wk.*

Job Tenure: from *emplen*, recoded into years by taking the mid-point of each category (e.g. 3 months but less than 6 months recoded to 0.375).

Region of Work: *gorwkr*

Industry: 1-digit industry codes, *inde07m*

Public or Private Sector: from *publicr*

Firm size: recode of *mpnr02*

Weighting: While the LFS has separate weights for inferences about income and for other inferential analyses, the income weights provided are inappropriate because they do not correct for attrition from the survey, while the person-weights provided for respondents in the quarter in which they answered the origin variable do take this into account. In these analyses, therefore, we use the person-weights, but results are substantively similar without weighting and with the income-specific weighting.

Table A1: Average Earnings by NS-SEC Group

	Mean Weekly Gross Earnings	Standard Error	95% Confidence Interval	
Higher Managers	£ 1,053	£ 35.9	£ 983	£ 1,124
Higher Professionals	£ 846	£ 8.8	£ 829	£ 863
Lower Managers and Professionals	£ 589	£ 4.8	£ 580	£ 598
NS-SEC 3-7	£ 346	£ 4.0	£ 338	£ 354

Note: Total n = 17,877. Ages 23-69, not in full time education. Respondents missing origin or NS-SEC categorisation are excluded from the analysis. Percentages calculated using survey weights.

Table A2: Percent Stable and Average Earnings by Occupational Group

	ARITHMETIC MEAN INCOME	GEOMETRIC MEAN INCOME	MEAN LOGGED INCOME	STANDARD DEVIATION LOGGED INCOME	SIGNIFICANT PAY GAP BETWEEN NS-SEC 3-8 & NS-SEC 1 ORIGINS, FULL MODEL, WITH EACH DEPENDENT VARIABLE			SIGNIFICANT PAY ADVANTAGE FOR *MICRO-STABLE* VS STABLE	SIGNIFICANT PAY GAP FOR PARTICULAR NS-SEC ORIGINS
					LOGGED WEEKLY INCOME	UNTRANS-FORMED WEEKLY INCOME	INCOME PERCENTILE *WITHIN* MICRO-CLASS		
Built Envir. Professionals	£736	£677	6.420	0.427					
Academics	£838	£729	6.486	0.606					
Scientists	£664	£606	6.341	0.467					
Engineers	£790	£716	6.512	0.485					
Doctors	£1069	£948	6.767	0.527		*	**		4**, 6*
Other Life Science Profs	£642	£564	6.214	0.592					
Lawyers	£936	£817	6.584	0.526				*	6*, 7**
Protective Civil Servants	£899	£835	6.622	0.391	*	*	*		2^
Accountants & Related	£833	£733	6.522	0.526	*	^	*		6^, 7**
IT Professionals	£920	£832	6.679	0.455	**	**	*		3**, 7**, 8**
Other Professionals	£740	£637	6.346	0.567					7^
Public Sector Mgrs & Profs	£769	£667	6.426	0.593	**	**	*		4*, 6*
Finance Managers	£1015	£824	6.600	0.729	*	**	*		5*, 6*
Managers & Dirs Business	£1002	£859	6.705	0.591		^	*	**	4*, 7^, 8**
Business Professionals	£858	£764	6.599	0.499	*	**	*		4^, 6*, 7^, 8*

Note: Ages 23-69, not in full time education. Respondents missing any variable used in full models (see Table 3) are excluded. Coefficients from models identical to Column 5 of Table 3, except as noted above.

Table A3: Variable Distributions by Origin

	MICRO-STABLE	STABLE (ALL)	SHORT-RANGE	MID-RANGE	LONG-RANGE	TOTAL/AVG ACROSS NS-SEC 1
n in NS-SEC 1	240	1,599	1,275	2,140	1,225	*6,239*
n in analyses of earnings	185	887	732	1,138	620	*3,377*
			Earnings measures			
weekly gross earnings	£ 1,062	£ 960	£ 892	£ 826	£ 800	*£ 873*
hourly gross earnings	£ 26.60	£ 25.38	£ 23.56	£ 22.20	£ 20.86	*£ 23.12*
logged weekly earnings	6.83	6.73	6.66	6.60	6.56	*6.64*
			Demographics/Base Controls			
Paid hours	40.6	38.4	38.2	38.1	38.6	*38.3*
Age (in years)	40.9	41.2	41.9	43.7	45.2	*42.9*
Female	34.1%	37.7%	34.7%	34.5%	32.5%	*35.1%*
Not White	8.3%	9.9%	8.5%	11.4%	8.7%	*9.9%*
Birth Country						
England or UK DK	68.6%	67.2%	71.8%	72.0%	76.5%	71.4%
outside UK	24.4%	20.7%	16.1%	14.3%	11.0%	15.9%
Northern Ireland	0.0%	1.3%	1.6%	2.9%	2.1%	2.0%
Scotland	4.9%	7.1%	6.1%	6.9%	8.2%	7.0%
Wales	2.0%	3.7%	4.4%	3.9%	2.1%	3.7%
			Education			
Educational Qualifications						
Less than University Degree	15.8%	19.3%	28.6%	39.0%	49.1%	*33.2%*
University Degree	51.5%	52.3%	49.0%	42.6%	39.1%	*46.0%*
Post-Graduate education	32.7%	28.4%	22.4%	18.4%	11.7%	*20.8%*
Degree Classification						
pass	8.5%	7.3%	5.5%	5.2%	7.3%	*6.3%*
third	4.7%	4.6%	4.8%	4.1%	6.0%	*4.7%*
2:2	19.2%	26.0%	24.2%	24.9%	26.1%	*25.2%*
2:1	57.1%	48.1%	52.1%	49.2%	47.6%	*49.3%*
first	10.6%	14.1%	13.4%	16.6%	13.0%	*14.5%*
N/A (no degree, foreign degree, degree w/out classes)	50.9%	48.5%	51.9%	60.7%	66.4%	*56.5%*
			Other Human Capital			
Current Health Problems Scale	0.408	0.345	0.389	0.392	0.393	*0.379*
Past Health Problems Scale	0.107	0.064	0.063	0.054	0.036	*0.056*
Job-Related Training last 3 months	46.7%	39.7%	35.5%	33.8%	30.1%	*35.1%*
Job Tenure in Years	9.3	8.9	9.4	10.9	11.6	*10.2*

Table A3 Continued

	MICRO-	STABLE (ALL)	SHORT-	MID-RANGE	LONG-	TOTAL/AVG

	STABLE		RANGE		RANGE	ACROSS NS-SEC 1
		Work Context				
Professionals (vs Managers)	72.9%	78.8%	80.6%	73.7%	72.1%	*76.3%*
Public sector (vs Private)	39.8%	34.2%	31.3%	30.4%	26.2%	*30.9%*
Industry						
Agriculture, forestry and fishing	0.0%	0.2%	0.2%	0.4%	0.3%	*0.3%*
Energy and water	1.3%	2.6%	2.0%	2.2%	3.7%	*2.5%*
Manufacturing	14.8%	11.7%	14.9%	15.4%	18.2%	*14.8%*
Construction	2.6%	3.1%	3.1%	4.2%	4.5%	*3.7%*
Distribution, hotels and restaurant	3.6%	4.5%	4.5%	6.2%	6.8%	*5.5%*
Transport and communication	7.1%	10.6%	14.7%	12.6%	11.9%	*12.4%*
Banking and finance	29.1%	28.4%	24.5%	25.2%	22.2%	*25.4%*
Public admin, education and health	37.3%	35.5%	33.6%	31.0%	28.9%	*32.4%*
Other services	4.1%	3.5%	2.4%	2.8%	3.5%	*3.0%*
Firm Size						
less than 25	16.1%	17.6%	18.9%	21.4%	21.9%	*19.9%*
25 to 49	12.0%	9.9%	10.2%	11.1%	11.0%	*10.6%*
50 to 499	30.7%	32.7%	34.5%	34.5%	36.0%	*34.3%*
500 or more	41.1%	39.8%	36.4%	33.0%	31.1%	*35.3%*
Work Region						
North East	2.1%	1.9%	2.4%	2.4%	4.4%	*2.7%*
North West (inc Merseyside)	5.9%	7.4%	9.8%	10.1%	9.4%	*9.2%*
Yorkshire and Humberside	5.1%	6.2%	5.9%	7.4%	9.1%	*7.0%*
East Midlands	8.2%	6.7%	7.7%	7.1%	7.2%	*7.1%*
West Midlands	4.7%	5.4%	7.0%	8.9%	8.9%	*7.5%*
Eastern	7.6%	9.1%	6.6%	9.3%	8.5%	*8.5%*
London	32.8%	26.7%	22.3%	18.4%	16.0%	*21.1%*
South East	13.7%	16.6%	17.3%	14.9%	15.9%	*16.0%*
South West	7.8%	9.5%	9.4%	9.7%	8.3%	*9.3%*
Wales	3.1%	3.4%	3.8%	3.7%	2.8%	*3.5%*
Scotland	9.0%	7.0%	7.1%	6.2%	8.5%	*7.0%*
Northern Ireland	0.0%	0.2%	0.9%	1.9%	1.0%	*1.1%*

(see Table 2 for origins in each specific occupation).

Table A4: Separate Regressions for Men, Women, Whites, and Ethnic Minorities (Figures 3 & 4)

	WHITES	NON-WHITES	WOMEN	MEN
Origins (vs NS-SEC 1 Parents)				
NS-SEC 2 (Lower Mgrs & Profs)	0.974	1.063	1.019	0.942*
NS-SEC 3-5 (Intermediate Occs)	0.934**	0.922	0.987	0.899***
NS-SEC 6-8 (Semi-Routine & Occs, no earner)	0.899***	0.791**	0.893**	0.872***
Age (in years)	1.077***	1.041	1.079***	1.089***
Age squared	0.999***	1	0.999***	0.999***
Female	0.861***	1.02		
Not White			1.015	0.941
Country of Birth (vs England)				
outside UK	0.943*	1.024	0.933	0.996
UK outside England	0.997	0.878	0.974	1.001
Paid Hours Worked in Week	1.021***	1.029***	1.029***	1.014***
Educational Qualifications (vs University Degree)				
Less than degree	0.800***	0.732**	0.777***	0.817***
Postgrad	1.089***	0.961	1.083*	1.060*
Degree Class (vs N/A)				
pass or third	0.987	1.075	1.054	0.943
2:2	0.924*	0.982	0.907*	0.934
first or 2:1	1.025	1.089	1.011	1.033
Current Health Problems Scale	0.977*	0.976	0.961*	0.98
Past Health Problems Scale	0.963	1.015	0.942	0.982
Job Tenure in Years	1.005***	0.992	1.005**	1.004**
Job-Related training last 3 months	1.022	1.037	1.066*	1.004
Region of Work: London (vs anywhere else)	1.218***	1.245***	1.216***	1.198***
Industry (vs Public Administration, Educ & Health)				
Agriculture, forestry and fishing	0.837	1.288	0.644	0.957
Energy and water	1.096	1.075	1.279*	1.054
Manufacturing	1.080*	1.173	1.071	1.090*
Construction	1.002	1.346	0.889	1.015
Distribution, hotels and restaurant	1.066	0.951	1.087	1.052
Transport and communication	1.130**	1.312*	1.102	1.177***
Banking and finance	1.094**	1.289*	1.101*	1.103*
Other services	0.915	0.922	0.929	0.926
Public Sector (vs Private)	0.900***	0.851	0.94	0.863***

Table A4 *Continued*

Firm Size (vs less than 25 employees)				
25 to 499	1.227***	1.269**	1.207***	1.219***
500 or more	1.317***	1.487***	1.310***	1.316***
Constant	74.142***	64.999***	37.784***	80.269***
N	3013	300	1216	2097
r2	0.421	0.552	0.487	0.386

Note: * p<.05 **p<.01 ***p<.001. Cases missing data on any variable deleted from all models. Survey weights used. Models also include dummy variables for all individual occupations included in models. Average values for each variable for each origin group given in Appendix Table A3.

Table A5: Separate Regressions by Age Group (Coefficients for Figure 5)

	23-29 YRS	30-39 YRS	40-49 YRS	50-59 YRS	60-69YRS
Origins (vs NS-SEC 1 Parents)					
NS-SEC 2 (Lower Mgrs & Profs)	1.052	1.021	0.949	0.928	1.091
NS-SEC 3-5 (Intermediate Occs)	0.955	0.95	0.935*	0.891**	0.949
NS-SEC 6-8 (Semi-Routine & Occs, no earner)	0.751***	0.959	0.890**	0.850***	0.827
Age (in years)	0.897	1.189	1.006	1.235	1.254
Age squared	1.003	0.998	1	0.998	0.998
Female	0.984	0.885***	0.862***	0.832***	0.849
Not White	1.084	0.986	0.928	0.97	1.159
Country of Birth (vs England)					
outside UK	1.004	1.012	0.92	0.907	1.072
UK outside England	1.069	1.026	0.974	0.917*	1.131
Paid Hours Worked in Week	1.028***	1.021***	1.018***	1.017***	1.029***
Educational Qualifications (vs University Degree)					
Less than degree	0.806***	0.794***	0.761***	0.833***	0.975
Postgrad	0.876*	1.052	1.067	1.173***	1.082
Degree Class (vs N/A)					
pass or third	0.814	0.989	0.93	1.143	0.851
2:2	0.813*	0.957	0.893*	0.932	0.887
first or 2:1	0.951	1.04	1.027	1.034	0.964
Current Health Problems Scale	0.99	0.976	0.961*	0.957*	0.972
Past Health Problems Scale	0.918	0.987	0.901**	1.076*	0.955
Job Tenure in Years	0.999	0.999	1.004*	1.006**	1.008*
Job-Related training last 3 months	1.002	1.023	1.036	1.047	1.036
Region of Work: London (vs anywhere else)	1.244***	1.171***	1.273***	1.204***	1.352**

Table A5 Continued

Industry (vs Public Admin, Educ& Health)					
Agriculture, forestry and fishing		1.154	0.577	0.971	0.577
Energy and water	1.285*	1.204*	0.951	1.22	0.404
Manufacturing	1.034	1.190**	1.036	0.929	1.573*
Construction	0.857	1.105	0.893	0.923	1.740*
Distribution, hotels and restaurant	1.128	1.205*	1.014	0.847	1.424
Transport and communication	1.098	1.245***	1.081	1.069	1.595**
Banking and finance	1.023	1.233***	1.019	0.974	1.751**
Other services	1.135	1.088	1.072	0.753**	0.833
Public Sector (vs Private)	1.041	0.933	0.843***	0.870**	0.942
Firm Size (vs less than 25 employees)					
25 to 499	1.045	1.229***	1.336***	1.213***	1.282**
500 or more	1.217***	1.326***	1.454***	1.305***	1.429***
Constant	285.593	10.565	374.645	2.407	0.274
N	265	952	1055	786	250
r2	0.598	0.451	0.425	0.456	0.615

Note: * p<.05 **p<.01 ***p<.001. Cases missing data on any variable deleted from all models. Survey weights used. Models also include dummy variables for all individual occupations included in models. Average values for each variable for each origin group given in Appendix Table A3.

Table A6: Separate regressions by NS-SEC 1.1 vs 1.2, with NS-SEC 1.1 vs 1.2 for Origins

	NS-SEC 1 All	NS-SEC 1.1	NS-SEC 1.2
Origins (reference category varies by model)			
NS-SEC 1.1 Parents (Higher Managers)	(reference)	(reference)	1.007
NS-SEC 1.2 Parents (Higher Professionals)	0.965	0.871*	(reference)
NS-SEC 2 Parents (Lower Mgrs & Profs)	0.949	0.929	0.97
NS-SEC 3 Parents (Intermediate Occs)	0.923*	0.891	0.939*
NS-SEC 4 Parents (Self-employed)	0.893**	0.832**	0.928*
NS-SEC 5 Parents (Lower Supervisory & Tech)	0.913*	0.841*	0.951
NS-SEC 6 Parents (Semi-Routine Occs)	0.888**	0.855*	0.907**
NS-SEC 7 Parents (Routine Occs)	0.861***	0.829**	0.873***
NS-SEC 8 Parents (No Earner in Household)	0.875**	0.783*	0.909*
Age (in years)	1.080***	1.083***	1.079***
Age squared	0.999***	0.999***	0.999***
Female	0.882***	0.862***	0.893***
Not White	0.983	0.979	0.984
Country of Birth (vs England)			
Outside the UK	0.954	0.918	0.962
Northern Ireland	1.04	1.038	1.036
Scotland	1.008	1.053	0.994
Wales	1.012	0.88	1.05
Paid Hours Worked in Week	1.021***	1.015***	1.023***
Educational Qualifications (vs University Degree)			
PhD	1.140***	1.168	1.130***
MA	1.060*	1.07	1.044
Post-Grad Ed Cert	1.065	1.059	1.058
Other Post-Grad	1.015	0.996	1.014
Higher Ed	0.836***	0.826**	0.840***
A-Levels	0.817***	0.831**	0.814***
GCSEs	0.751***	0.707***	0.774***
Other Qualifications	0.784***	0.837	0.754**
No Qualifications	0.625***	0.514***	0.716***
Degree Class (vs 2:2/Lower 2nd Class)			
Not Applicable (including no degree, foreign degree)	1.075*	1.119	1.065
Pass	1.048	0.708	1.089

Table A6, Continued

(Degree Class continued) Third Class	1.089*	1.189	1.059
2:1/Higher Second Class	1.105***	1.166*	1.087**
1st Class	1.083*	1.218*	1.065
Current Health Problems Scale	0.974**	1.001	0.968**
Past Health Problems Scale	0.968	0.966	0.966
Job Tenure in Years	1.004***	1.006**	1.004**
Job-Related training last 3 months	1.025	1.01	1.031
Region of Work (vs London)			
North East	0.775***	0.781**	0.770***
North West	0.814***	0.823***	0.812***
Yorkshire & Humberside	0.816***	0.742***	0.836***
East Midlands	0.803***	0.737***	0.817***
West Midlands	0.803***	0.808**	0.800***
Eastern	0.827***	0.803**	0.840***
South East	0.873***	0.856**	0.876***
South West	0.809***	0.801***	0.812***
Wales	0.778***	0.818	0.770***
Scotland	0.843***	0.769*	0.872***
North Ireland	0.684***	0.721*	0.666***
Industry (vs Public Administration, Educ & Health)			
Agriculture, forestry and fishing	0.869	0.762	0.943
Energy and water	1.098	1.133	1.094
Manufacturing	1.107**	1.077	1.117**
Construction	1.002	0.97	1.016
Distribution, hotels and restaurant	1.062	1.199	1.017
Transport and communication	1.162***	1.073	1.171***
Banking and finance	1.101***	1.143*	1.085*
Other services	0.941	0.961	0.924
Public Sector (vs Private)	0.908***	0.884*	0.914**
Firm Size (vs less than 25 employees)			
25 to 49	1.220***	1.447***	1.164***
50 to 499	1.220***	1.434***	1.172***
500 or more	1.317***	1.642***	1.242***
Constant	80.052***	89.353***	53.289***
N	3377	827	2550
r2	0.433	0.463	0.439

Table A7

	SOC 2010 Code	Occupation Title	Per-cent Stable	*SE*	95% Confidence Interval		Mean Weekly Gross Earnings	*SE*	95% Confidence Interval		N
Built Environment	2431	Architects	29.0%	*6.0%*	17.3%	40.7%	£ 780.22	*£ 71.06*	£ 640.90	£ 919.54	29
	2432	Town planning officers	22.3%	*7.8%*	7.0%	37.6%	£ 696.93	*£ 49.71*	£ 599.46	£ 794.40	22
	2434	Chartered surveyors	24.1%	*5.8%*	12.8%	35.4%	£ 742.34	*£ 57.76*	£ 629.10	£ 855.58	30
Acad. Scientists	2311	Higher education teaching profs	29.8%	*3.7%*	22.6%	37.0%	£ 850.34	*£ 32.77*	£ 786.09	£ 914.60	131
	2111	Chemical scientists	20.8%	*6.8%*	7.6%	34.1%	£ 589.09	*£ 47.50*	£ 495.97	£ 682.22	29
	2112	Biological scientists and biochemists	32.9%	*4.2%*	24.6%	41.2%	£ 701.16	*£ 30.71*	£ 640.94	£ 761.37	95
	2113	Physical scientists	32.6%	*8.3%*	16.3%	48.9%	£ 708.71	*£ 43.58*	£ 623.26	£ 794.16	27
	2114	Social and humanities scientists	30.4%	*11.5%*	7.8%	53.0%	£ 554.93	*£ 59.70*	£ 437.88	£ 671.99	9
	2119	Natural and social science profs n.e.c.	25.7%	*8.5%*	9.0%	42.4%	£ 561.55	*£ 37.81*	£ 487.42	£ 635.67	22
Engineers	2121	Civil engineers	26.5%	*4.9%*	17.0%	36.1%	£ 808.41	*£ 46.66*	£ 716.92	£ 899.90	55
	2122	Mechanical engineers	31.5%	*5.1%*	21.6%	41.4%	£ 858.18	*£ 52.93*	£ 754.41	£ 961.96	54
	2123	Electrical engineers	12.4%	*5.4%*	1.9%	22.9%	£ 693.81	*£ 59.90*	£ 576.37	£ 811.25	30
	2124	Electronics engineers	18.3%	*6.9%*	4.9%	31.8%	£ 812.13	*£ 99.80*	£ 616.46	£1,007.8	15
	2126	Design and development engineers	16.0%	*4.1%*	8.0%	24.0%	£ 789.14	*£ 45.09*	£ 700.73	£ 877.55	58
	2129	Engineering professionals n.e.c.	19.2%	*4.0%*	11.5%	27.0%	£ 753.73	*£ 42.88*	£ 669.66	£ 837.81	74
Doctors	2211	Medical practitioners	52.6%	*3.3%*	46.1%	59.0%	£1,066.9	*£ 41.76*	£ 985.01	£1,148.8	151
Other Life Sciences	2212	Psychologists	36.4%	*7.7%*	21.4%	51.4%	£ 641.15	*£ 55.36*	£ 532.61	£ 749.69	30
	2213	Pharmacists	27.0%	*6.7%*	13.8%	40.2%	£ 603.65	*£ 46.71*	£ 512.07	£ 695.22	32
	2215	Dental practitioners	43.2%	*7.5%*	28.6%	57.8%	£ 777.31	*£215.3*	£ 355.11	£1,199.5	6
	2216	Veterinarians	46.1%	*10.1%*	26.2%	65.9%	£ 691.38	*£ 78.20*	£ 538.06	£ 844.70	13
	2223	Speech and language therapists	46.0%	*12.4%*	21.6%	70.4%	£ 592.63	*£ 57.86*	£ 479.19	£ 706.07	12

Table A7 cont.

	SOC 2010 Code	Occupation Title	Per-cent Stable	*SE*	95% Confidence Interval		Mean Weekly Gross Earnings	*SE*	95% Confidence Interval		N
Law	2412	Barristers and judges	54.2%	*8.9%*	36.9%	71.6%	£1,147.7	*£141.0*	£ 871.27	£1,424.2	11
	2413	Solicitors	39.8%	*4.7%*	30.6%	48.9%	£ 942.73	*£ 59.35*	£ 826.36	£1,059.1	57
	2419	Legal professionals n.e.c	42.3%	*7.7%*	27.3%	57.3%	£ 895.16	*£141.1*	£ 618.51	£1,171.8	30
Protective Civil Servants	1171	Officers in armed forces	38.5%	*9.6%*	19.6%	57.5%	£1,203.5	*£ 97.72*	£1,011.9	£1,395.1	16
	1172	Snr police officers	21.6%	*9.7%*	2.6%	40.6%	£1,029.6	*£ 42.38*	£ 946.49	£1,112.7	13
	1173	Snr offcrs in fire, amblnc, prison and related srvcs	23.1%	*9.1%*	5.2%	40.9%	£ 724.92	*£ 51.62*	£ 623.72	£ 826.12	18
	2443	Probation officers	5.7%	*5.6%*	-5.3%	16.7%	£ 508.41	*£ 32.04*	£ 445.60	£ 571.22	10
Accountants	2421	Chartered and certified accountants	28.7%	*3.1%*	22.6%	34.8%	£ 802.65	*£ 36.79*	£ 730.52	£ 874.77	126
	2425	Actuaries, economists and Statisticians	16.7%	*6.9%*	3.2%	30.3%	£1,037.1	*£ 117.2*	£ 807.24	£1,266.9	24
	3533	Insurance underwriters	17.0%	*6.4%*	4.5%	29.6%	£ 650.41	*£ 65.09*	£ 522.79	£ 778.02	23
	3535	Taxation experts	29.4%	*7.7%*	14.4%	44.5%	£ 798.57	*£ 75.76*	£ 650.03	£ 947.10	21
IT	2133	IT specialist mngrs	25.4%	*3.0%*	19.5%	31.3%	£ 926.36	*£ 34.40*	£ 858.91	£ 993.81	158
	2134	IT project and programme mngrs	26.0%	*5.8%*	14.6%	37.3%	£1,081.2	*£ 95.03*	£ 894.89	£1,267.5	66
	2135	IT business analysts, archtcts and systms designers	21.2%	*4.0%*	13.4%	29.0%	£ 888.90	*£ 44.96*	£ 800.75	£ 977.05	72
	2136	Programmers & software develpmnt profs	23.7%	*2.8%*	18.2%	29.2%	£ 850.11	*£ 35.67*	£ 780.18	£ 920.05	180
Other Professionals	2142	Environment professionals	34.3%	*7.7%*	19.3%	49.3%	£ 721.67	*£ 52.14*	£ 619.45	£ 823.89	28
	2444	Clergy	34.4%	*6.4%*	21.8%	47.0%	£ 426.99	*£ 22.51*	£ 382.85	£ 471.13	35
	2463	Environmental health professionals	10.7%	*7.4%*	-3.7%	25.1%	£ 593.55	*£ 46.24*	£ 502.89	£ 684.21	17
	3512	Aircraft pilots and flight engineers	44.2%	*9.1%*	26.4%	62.0%	£1,359.8	*£ 90.22*	£1,182.87	£1,536.7	23

Table A7 cont.

	SOC 2010 Code	Occupation Title	Per-cent Stable	*SE*	95% Confidence Interval		Mean Weekly Gross Earnings	*SE*	95% Confidence Interval		N
Public Sector	1116	Elected officers and representatives					£ 331.24	*£ 80.97*	£ 172.49	£ 490.00	7
	1181	Health servcs and public health mngrs & dirs	16.7%	*4.5%*	7.9%	25.6%	£ 880.56	*£ 41.91*	£ 798.39	£ 962.72	46
	1184	Social servcs managers and directors	10.8%	*3.9%*	3.1%	18.5%	£ 692.36	*£ 48.01*	£ 598.23	£ 786.48	47
	2317	Snr professionals of educ. establishments	18.1%	*3.5%*	11.3%	24.9%	£ 817.10	*£ 42.78*	£ 733.22	£ 900.98	99
	2318	Educ advisers and school inspectors	23.9%	*7.0%*	10.2%	37.6%	£ 741.89	*£ 89.83*	£ 565.76	£ 918.02	19
Finance	1131	Financial mngrs and directors	30.3%	*6.1%*	18.4%	42.2%	£1,450.33	*£ 76.06*	£1,301.2	£1,599.5	58
	3532	Brokers	36.7%	*9.6%*	17.9%	55.4%	£1,104.2	*£116.5*	£ 875.70	£1,332.6	23
	3534	Finance & investmnt analysts & advisers									
Business Managers	1115	Chief executives and Snr officials	30.9%	*6.5%*	18.1%	43.7%	£1,472.1	*£ 95.42*	£1,285.1	£1,659.2	42
	1121	Production mngrs and dirs in manufacturing	17.8%	*2.2%*	13.5%	22.2%	£ 851.21	*£ 35.53*	£ 781.54	£ 920.87	200
	1122	Production mngrs and dirs in construction	20.1%	*17.4%*	-14.0%	54.3%	£1,238.1	*£ 227.1*	£ 792.79	£1,683.4	8
	1123	Production mngrs & dirs in mining and energy	29.5%	*3.3%*	23.0%	35.9%	£1,004.5	*£ 52.93*	£ 900.77	£1,108.3	137
	1133	Purchasing mngrs and directors	49.9%	*13.0%*	24.3%	75.4%	£1,254.5	*£ 212.3*	£ 838.19	£1,670.8	6
	1134	Advertising and public relations dirs	27.5%	*4.3%*	19.1%	35.9%	£1,046.7	*£ 58.93*	£ 931.13	£1,162.2	83
	1135	Human resource mngrs and directors	30.6%	*7.7%*	15.5%	45.7%	£1,236.6	*£ 96.89*	£1,046.7	£1,426.6	29
	1139	Functional mngrs and directors n.e.c.	35.0%	*6.1%*	23.0%	47.0%	£ 978.76	*£ 77.83*	£ 826.16	£1,131.4	51
	1251	Property, housing and estate mngrs	14.8%	*4.8%*	5.5%	24.2%	£ 745.33	*£ 43.59*	£ 659.86	£ 830.79	52
Business Professionals	2150	Research and development mngrs	25.8%	*6.9%*	12.4%	39.2%	£ 914.09	*£ 62.10*	£ 792.34	£1,035.8	31
	2423	Management consultants and business analysts	28.8%	*3.4%*	22.2%	35.4%	£ 923.90	*£ 54.38*	£ 817.28	£1,030.5	103
	2424	Business and financial project mngmnt professionals	28.4%	*3.1%*	22.2%	34.5%	£ 925.63	*£ 34.48*	£ 858.01	£ 993.24	158
	2426	Business and related research profs	33.1%	*8.6%*	16.2%	49.9%	£ 571.67	*£ 41.32*	£ 490.66	£ 652.67	27
	3545	Sales accounts and business development mngrs	26.7%	*2.3%*	22.1%	31.2%	£ 831.37	*£ 24.42*	£ 783.49	£ 879.24	321

Figure A1 Microclass over- and under-representation in 15 NS-SEC 1 Microclasses