Social Background, Credential Inflation, and Educational Strategies

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Abstract

The primary goal of this paper is to examine the impact of credential inflation on educational attainment in twentieth century United States. To do so, we create a measure of 'intergenerational credential inflation' (IIF) and include it models predicting educational transitions. Using the General Social Surveys of 1972-2000 we find that people are generally less likely to invest in schooling if its value is relatively low. An exception is the final transition to a postgraduate degree, where we find that when its value is low, children of parents with postgraduate education are more likely to take it. This finding supports relative risk aversion theory, which assumes that the main goal of children is to avoid downward social class mobility. Perhaps most important, we find that credential inflation is particularly influential on transition probabilities if parents had made the same transition. This pattern is consistent with the information differential thesis that children are more informed about the value of education if their parents acquired it.

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INTRODUCTION

It is well known that educational attainment is largely affected by social background, particularly the social class and education of parents (Halsey, Heath & Ridge 1980; Jencks et al. 1972). A large body of research also indicates that specific educational transitions can be differentiated by social background (Mare 1980, 1981a; Shavit & Blossfeld 1993). Less is known about the effects of macro-level conditions—such as credential inflation—on educational attainment generally and on separate educational transitions. There has been research examining the extent to which people are overeducated for the labor market (Boylan 1993; Clogg & Shockey 1984; Groot & Maassen van den Brink 2000; Van der Ploeg 1994; Wolbers et al. 2001), but these studies have not incorporated educational inequality. More importantly, the interaction between macro-level conditions and social background in constraining educational decisions has received no attention. This dearth of empirical research reflects that sociological theories regarding these issues are underdeveloped.

Since the sociological study of educational inequality is motivated by the inequality of opportunities *caused* by education, it is important to consider the labor market value of credentials. This paper accomplishes this by exploring the relationship between credential inflation, parental education and educational decisions. We have three goals: (1) to

formulate a measure of credential inflation; (2) to assess the impact of credential inflation on educational transitions; and (3) to determine whether this impact differs according to the education level of parents. Using General Social Survey (GSS) data collected across many cohorts characterised by varying levels of education rewards, we gain insight into the social inequalities of educational attainment net of credential inflation and educational expansion.

CREDENTIAL INFLATION AND EDUCATIONAL STRATEGIES

This paper builds on the basic idea of 'relative risk aversion' first proposed by Boudon (1974), and later elaborated on by Breen and Goldthorpe (1997; Breen 2002; Goldthorpe 1996a). This theory argues that the decision to end formal education is based largely on a desire to avoid downward social class mobility. In fact, this desire is posited as the 'primary goal' of individuals when determining educational strategies. Simply put, children typically desire to achieve at least enough education to gain access to the social class of their parents.

Relative risk aversion sheds light on why children of more advanced social classes are more ambitious and achieve higher levels of education than working class children (Boudon 1974; Gambetta 1987; Goldthorpe 1996a; Keller & Zavalloni 1964; Need & De Jong 2001). At a relatively early point in their educational career, most working class children have already met the goal of avoiding downward mobility. Middle class children, on the other hand, generally need to acquire much higher levels of education to

achieve their parents' social class. Moreover, working class children have fewer resources to finance education or to overcome potential earnings foregone during their years in school.

All else being equal, children should need only as much education as their parents to enter the same social class as their parents. If the values of education credentials are not constant over time, however, this simple relationship will not hold. If certain education credentials increase in value from one generation to the next, children will typically need less education than did their parents. Conversely, if the value of an education decreases, children are likely to need more education than their parents to achieve the same social class.

A significant body of research indicates that education credentials have devalued during the twentieth century due to vast expansions in educational attainment that have not been equalled by an upgrading of the labor market (Brown 1995; Burris 1983; Clogg & Shockey 1984; Groot & Maassen van den Brink 2000). This process has implications for individual strategies of educational investment. This is especially the case if one prescribes to labor queue theory, which sees education as a relative good for which employers compete for employees with the highest credentials in order to reduce the costs of job training (Boylan 1993; Hirsch 1977; Thurow 1975). In an over-qualified labor market, employers will fill the 'highest' jobs with those who have the 'highest' qualifications. Since there are too many workers who are highly educated, some of these are necessarily allocated to 'mid-level' jobs. This process repeats itself again for those

with mid-level qualifications, where since there are not enough mid-level jobs, many are forced to compete for low level jobs. It follows logically that this pattern has its most serious effects on the labour market opportunities for those with lower levels of education, thus widening the gap between educational levels in their occupational returns (Van der Ploeg 1994; Wolbers et al. 2001). If people wish to avoid downward mobility, as is implied by the mechanism of relative risk aversion, then they need to invest more in education if its value decreases.[1]

The considerations people make when investing in education may differ as they progress through educational transitions. In particular the decision to acquire postgraduate training may be based on completely different considerations than transitions at other levels. As we shall show later, the additional value of postgraduate training past a college degree is generally limited, at least in terms of social class returns. Moreover, the costs of failure are high since it is seen as a bad 'signal' to potential employers (Spence 1973), in effect limiting initial and future job prospects. Studying at the post-graduate level also usually implies postponement of family transitions like marriage and having children (Blossfeld and Huinink 1991; Marini 1984). In the event of an unsuccessful completion of a graduate program after years of study, this postponement would not be compensated by higher labor market returns (Becker 1981). Given that the absolute gains are limited, investment in postgraduate studies is perhaps best seen, at least in economic terms, as

[1] We do not claim that children necessarily assess the relative value of education for their generation compared to that of their parents. Nonetheless, even if we assume that people evaluate only the educational value of their own cohort for reaching a certain occupational level (or, to be more precise, of those who left school immediately before them), according to the mechanisms of relative risk aversion we would still expect children to reach for higher levels of education if its value has decreased compared to their parents' generation

reflecting a desire to secure one's relative position to their parents than investment in other educational levels reflects. In other words, the combined processes of credential inflation and relative risk aversion leading to a negative impact of the intergenerational value of education on making the transition to postgraduate education should be most evident at this transition.[2]

The influence of credential inflation on educational decisions might also differ according to the education level of parents, with highly educated parents being better able to transmit accurate information about the value of education on the labor market (Erikson & Jonsson 1996). More specifically, a parent who made the transition that their child is facing should be able to give more reliable information about the value of that education than parents who did not make the transition. Concomitantly, the effects of credential inflation on educational decisions should be strongest for children whose parents made the transition that they are facing because they are more likely to have knowledge about the value of that education.

There is also good reason to believe that the interaction between the value of education and whether a parent made specific transitions will differ across transitions. At early transitions when a large majority remain in school, nearly all children will be provided with information about the value of acquiring that education. This might be particularly evident at the transition to complete high school, especially in recent decades, since most people understand that it is difficult to find good employment without a high school

[2] A similar argument has been put forward by Garnier, Hage & Fuller (1989). They claim that the cost-benefit evaluation is more important for students entering selective schooling systems than mass schooling systems. Analogously, postgraduate courses are more highly selective than lower levels of schooling.

diploma. On the other hand, when few people make a transition, and when the labor market rewards of that transition are relatively high, there may be an information differential between parents who made the transition and those who did not. In such cases the parents who made the transition have an advantage in determining the value of an education and thus be able to convey that message to their children. This should be the case for the transition to a college degree, where a considerable number of people end schooling beforehand despite that it has greater returns than the other transitions (McCall 2000; Pascarella & Terenzini 1991; also see below).

The remainder of this paper address these issues above. Firstly, we discuss the data and methods employed in the study, paying particular attention to the development of the intergenerational inflation factor. In the results section we start by describing trends in educational expansion and credential inflation in the United States during the twentieth century. We follow this with our main analysis of the effects of credential inflation and parents' education on educational attainment. The last section discusses the implications of our findings.

DATA AND METHODS

Data

Data are taken from the pooled General Social Surveys (GSS) of 1972-2000 for two separate but related analyses. In the first analysis we develop a measure we term the Intergenerational Inflation Factor (IIF) to estimate the value of education. This analysis

assesses the impact of education on social class for men born between 1900 and 1970 (ten seven-year birth cohorts; N = 14,204). We use only men for this analysis since, particularly for earlier cohorts, the investment in education was more strongly associated to labor market returns for men than for women.

In the second analysis, we incorporate the IIF into educational transition models. These models use information for both men and women aged 26 or over at the time of the survey. Since we are interested in the value of education for each generation compared to that of the parents' generation, this analysis is necessarily restricted to seven seven-year birth cohorts born between 1922 and 1970, giving an analytical sample size of 17,058 after missing cases were omitted.

Background Variables

Education is coded into five categories: (1) primary education; (2) completed high school; (3) some post-secondary training; (4) completed four-year college; (5) and postgraduate training. This classification is used both for child's education and parents' education (we use the education level of the parent with the highest level).

Social class is measured using an adaptation of the CASMIN classification widely used in international social mobility research (e.g. Ishida et al. 1995; Ganzeboom et al. 1989; Erikson & Goldthorpe 1992). We exclude farmers and the 'petty bourgeoisie' (self-employed with no or few employees) from the analysis so that the class variable can be

ordered hierarchically.[3] For the same reason we collapsed skilled manual workers, supervisors, technicians and routine non-manual workers into a single class. This results in four classes that are hierarchically ordered: (1) Unskilled manual working class, (2) skilled manual, supervisors and routine non-manual workers, (3) lower managers and professionals, and (4) higher managers and professionals.

Other demographic variables are included as controls in our models. These include race (*non-white* versus white), region (*southern* states versus other), and *gender*. Descriptive statistics for the background variables can be seen in Table 1.

[Table 1 about here]

Macro-level variables

In order to control for the effect of educational expansion, we include a measure of the percentage of students facing each transition in every cohort. The *percent at risk* is 100 for people facing the first transition for every cohort, and drops for every subsequent transition, with a varying rate across cohorts (see also Sieben 2001). If we estimated separate models for each cohort, the logit model without this variable would be appropriate to study educational inequality net of educational expansion (cf. Mare 1981a). This variable is necessarily included, however, because we pool data from many cohorts in a single analysis.

[3] This omission is acceptable in studying trends in educational inequality since education is of limited importance in the 'mobility strategy' for children of farmers and of self-employed people (Goldthorpe 2000; Ishida et al. 1995).

Intergenerational Inflation Factor

Previous measures of overeducation have been developed (Eckhaus 1964; Clogg and Shockney 1984; Scoville 1966), but they are not suitable for our analysis.[4] It is therefore necessary to construct a new measure to assess the value of education. We start by determining the value of education using four cumulative logit (proportional odds) models with social class as the dependent variable (treated as a four-class ordered-category variable) and education level as the main explanatory variable.[5] These models take the following form:

$$\log\left(\frac{\pi_1 + \ldots + \pi_j}{\pi_{j+1} + \ldots + \pi_J}\right) = \alpha_j + \beta_1 EDUC + \beta_2 AGE + \sum_{K-1} \lambda_k COH + \sum_{K-1} \delta_k COH \times EDUC + \beta_3 RACE + \beta_4 REGION \quad (1)$$

Where π_1 to π_j refers to the probability of obtaining a specific social class from categories 1 to j, and π_{j+1} to π_J to the probability of being classified in a higher category (with a total of J=4 categories representing the four social classes). EDUC is a binary classification of educational level with different boundaries for the four models, and AGE is in years. In total there are K birth cohorts COH, of which K-1 are included in as dummy variables in the model. The resulting main effect of educational level β_1 is an estimate of the value of education for the reference cohort. For cohort k the value of education can be computed

[4] Eckhaus's (1964) and Scoville's (1966) measures assess overeducation according to whether people are above or below the mean level of education needed for an occupation. The Clogg and Shockey (1984) measure classifies people as overeducated if their education level is at least one standard deviation higher than the average in their occupation. These measures are only useful to show trends in over-education and not to accurately show the level of over-education. A more detailed critique of previous measures of overeducation can be seen in Halaby (1994).

[5] More details about cumulative logit models are in Agresti (1990).

by adding the δ parameter for the interaction of cohort k with education to the main effect of education β_1. We call this cohort-specific education effect ω_k.

These cohort-specific education effects, ω_k, from equation (1) are then used to construct the Intergenerational Inflation Factor (IIF) for each cohort and for each educational transition separately. The IIF is meant to approximate the ratio of the value of education achieved by respondents to the value of that education for the previous generation. The formula for the IIF of the transition from j-1 to j is as follows:

$$IIF_j = \frac{\omega_{k-1}}{\left(\frac{\omega_{k-3} + \omega_{k-4}}{2}\right)} \tag{2}$$

The numerator of this equation represents the perceived value of education for children. Since individuals can only make informed educational choices on the basis of seen returns to education, they must look to the success of individuals going through the schooling system some years before them. Reflecting this mechanism, we substitute the parameter estimates of the previous cohort (k-1) rather than the value of education for each respondent. The denominator of the equation represents the value of that same education a generation before. Since we do not know the birth year of the parents, we use the average of two cohorts born roughly 21-28 years before the respondent. If IIF is lower than 1, this particular transition has lost in value compared to the parents' generation. If IIF is larger than 1, the transition has gained in value.

Transition Models

Following from Mare (1980, 1981a) our main analysis employs educational transition models (see also Shavit & Blossfeld 1993). We examine four educational transitions:

(1) having at least high school,

(2) having obtained at least some post-secondary training given completed high school

(3) having completed college given some post-secondary training, and

(4) having entered postgraduate training given completed college.

We report a pooled analysis where all educational transitions are included in a single model. Each individual is represented in the data as many times as he or she faced a transition. In total we study 47,774 transitions for 17,058 individuals.[6]

Our basic transition model takes the following form:

$$\log\left(\frac{p_j}{1-p_j}\right) = \alpha_j + \sum_{Z} \beta_z X_z + \sum_{E-1} \beta_e PEDUC + \sum_{C-1} \beta_c FCLASS + \lambda\, IIF_j \qquad (3)$$

Where p_j is the probability of making a specific educational transition from *j-1* to *j*. The constant a_j refers to the overall chance of making transition *j* if all other variables were zero. *X* is a vector of demographic variables not related to parental background (gender, percent at risk, ethnicity, region), *PEDUC* is parental education with *E* categories, of which *E-1* are included as dummy variables. *FCLASS* is father's social class and has *C*

[6] We also analyzed transitions separately (not shown), finding substantively similar results. These analyses are available from the authors upon request.

categories, of which *C-1* are included as dummy variables in the regression equation. Finally, IIF_j is the intergenerational inflation factor for transition *j*, and parameter estimate λ describes how IIF_j affects the probability of making a transition. This baseline model is extended with two-way and three-way interactions between *IIF*, transition, and whether parents made the transition.

RESULTS

Educational Expansion and Credential Inflation in the US

Before we discuss the results of the transition models, it is important to verify the patterns of educational expansion and credential inflation in the US. Table 2 displays cross-classifications of education level by social class destination for seven cohorts from 1900-1970. Not surprisingly given the findings of others, educational expansion is evident (cf. Dresh 1975; Smith 1986; Hauser & Featherman 1976). Of the earliest cohort, 20.6 percent acquired at least some post-secondary training. This percentage increased to 58.2 for men born in the mid-1940s, and decreased somewhat after that to 52.2 percent for men born between 1964 and 1970.

It is also clear that educational expansion has affected occupations in all social classes (cf Clogg and Shockey 1984). For example, service classes occupations have been increasingly filled with university graduates—of the cohort born from 1900-07 only slightly more than 40 percent had university degrees; of those born between 1964-70 more than 70 percent had university degrees. Perhaps most striking is the growing

number of unskilled workers with university degrees. Of the early cohort, less than one percent of unskilled workers had a university degree, but more than 10 percent of the last cohort had university degrees.

[Table 2 about here]

We can better see the social class returns to education in Figure 1, which displays the log odds ratios from the four cumulative logit models for ten seven-year birth cohorts (see Equation 1). This figure provides evidence that the value of each education level has declined significantly over time. An exception is that having at least high school education increased in value from the 1920s to the 1940s birth cohorts, after which it declined rapidly. The widening gap between the lines, as suggested above, is most evident for the period after the 1940s birth cohorts, the cohorts that experienced most rapid educational expansion. Finally, it is important to note that the returns of a postgraduate education are almost indistinguishable from the returns of a first college degree throughout the period under study. Simply put, completing graduate school is no more likely to improve one's social class position than ending formal education after obtaining a college degree.

[Figure 1 about here]

Figure 2 displays the intergenerational inflation factor of the four educational transitions. Notice the reference line on the graph at IIF=1, representing where the value of the

respondents' education is equal to what it was in the previous generation. For the most part, education qualifications have gradually devalued from one generation to the next (IIF < 1). There are some exceptions, however. For example, high school education increased in value from the 1930s birth cohorts until the early 1950s birth cohorts (IIF > 1), reaching a high for the mid-1940s cohorts. Having at least some college for the 1940's cohorts was also worth slightly more than it was for the previous generation. Furthermore, for the last two cohorts the value of having completed college or more increased, perhaps reflecting that educational expansion has been less dramatic for younger cohorts because of incomplete careers (Hauser & Featherman 1976; see also Table 2). We shall use this IIF measure in the transition models that follow.

[Figure 2 about here]

The Effects of IIF on Educational Transitions

We now turn to the transition models seen in Table 3. These models assess the impact of social background and credential inflation on moving from one education level to the next highest level. Model 1 contains the four transitions, gender, percentage at risk, race, region, parents' education, father's class, and the IIF as independent variables. In this baseline model, a number of general observations can be made. Parents' education and social class have the expected effect: children of more advantaged backgrounds have a higher probability of making a transition than other children. Also as expected, women have a lower chance of making an educational transition than men, and people from the southern states are disadvantaged independently of the composition of parental

characteristics. Perhaps less intuitive, educational expansion (percent at risk) has no effect on the probability of making a transition when the educational and occupational characteristics of parents are taken into account.[7]

[Table 3 about here]

More directly related to the main focus of this paper, the intergenerational credential inflation has a *positive* effect on transition probabilities, implying that if education is worth less than for the parents' generation, people are less likely to acquire it. This finding contradicts the notion derived from the theory of relative risk aversion (Breen 2002; Breen & Goldthorpe 1997; Goldthorpe 1996a, 2000;) that education is a relative good necessary for the avoidance of downward mobility. From this model it seems that the 'job queue' is not the main mechanism explaining investments in education. As we shall see later, however, including interactions between IIF, parents' education and the individual transitions presents a slightly different picture.

Model 2 includes three two-way interactions.[8] First, interactions between IIF and transition number are included to test the impact of IIF across transitions. Second, an interaction between IIF and whether a parent made the same transition is included to test the information differential hypothesis that the labor market value of a particular level of education is more important to respondents if their parents completed this education.

[7] A model excluding parental characteristics showed a positive impact of 'percent at risk' on transition probabilities. Thus, the increasing likelihood to make a transition is for a large part a consequence of changing distributions in social origins (cf. Mare 1979).
[8] Including the three two-way interactions separately confirms the results shown here.

Third, interactions between transitions and whether parents made a transition are included.

We find some interesting results with respect to the differential impact of IIF across transitions. We now see that the positive impact of the relative value of education holds only for the first three transitions. Thus, until college, if education is worth less than it was in the previous generation, it is less attractive to invest in it. Nonetheless, confirming the speculations we made earlier in the paper, this finding does not hold for the postgraduate transition.

The relative value of education has a *negative* impact on the probability to make the transition to postgraduate education. Recall form Figure 1 that the gains in social class returns from continuing past a college degree to a postgraduate education are limited. These two points provide support for relative risk aversion theory. It seems sensible to suggest, then, that people are most likely to undertake postgraduate studies if it will decrease their chances of downward mobility. If, on the other hand, such a high-risk trajectory is not necessary to avoid downward mobility then people will end their formal education beforehand.

As expected from the information differential thesis, there is a strong positive interaction between the intergenerational value of education and whether parents made specific transitions. Respondents were more likely to consider the value of an education when deciding to acquire it if their parents acquired the same level of education. This finding is

especially interesting considering that we control for social class, meaning that this relationship is more likely related to a true information differential due to parental experience with the education system than to other class-related resources (e.g. financial resources).

In agreement with previous research in the US (Mare 1980; Hout et al. 1993) the interaction terms show that the impact of parents' education declines from one transition to the next. The explanation for this is generally two-fold.[9] First, as students grow older, they are less influenced by their parents (life course hypothesis). Second, unmeasured characteristics affecting transition probabilities may be unevenly distributed among parents of high and low educational levels (e.g. ability) (Mare 1993), resulting in an apparent – though not necessarily true – decline in the effect of parents' education over transitions.

Model 3 includes the three-way interactions between IIF, transition number and whether parents made a transition, allowing us to test whether there are differences in information differentials across transitions. Because of their complexity, these results are best shown graphically. Figure 3 displays the fitted probabilities for students whose parents made the transition and those children whose parents did not according to the IIF for each

[9] Breen (2002) showed that also the relative risk aversion theory itself proofs that the impact of parental background decreases along the educational career. Each social class has its 'threshold' in education that is equal to ensuring class maintenance. Class differences in transition probabilities are largest for transitions that lie in between the thresholds of different classes. If a transition is beyond the threshold for all classes, then class differences in transition rates decline.

transition separately.[10] We can clearly see that children are far more likely to make each transition if their parents made it compared to if their parents did not. It is also clear that for the first three transitions, the value of education has a positive effect on the probability of completing that transition for both groups, regardless of whether parents made the transition.

[Figure 3 about here]

The most interesting findings from Model 3 relate to the changes in the information differential across transitions. We can see from Figure 3 that there is no discernable information differential at transitions one and two, but the pattern changes drastically for the third and fourth transitions. Perhaps most important, by the third transition (i.e., college degree) the value of education has a much stronger effect for those children whose parents acquired the same level of education than for those whose parents had less education. This supports our speculation that children pay most attention to their parents' advice on the value of schooling at the transition to a college degree. The fact that, few make the transition to begin with, produces a larger gap in information than for the previous transitions. As a result, parents who have acquired college degrees can provide their children with better information on their value, influencing the decision to continue schooling or not.

[10]The fitted probabilities were calculated with all other variables (i.e., those not included in the three-way interaction) set to their means, meaning that they apply to the 'typical' person. For more information on how to construct these graphs, also referred to as 'effect displays', see Fox (1987).

Another noteworthy finding is that this relationship changes for the fourth transition (i.e., postgraduate qualifications). At this point the value of education apparently has no impact on children of parents who did not make that transition. On the other hand, there is a strong negative effect of the value of education on the probability of making the transition for those children whose parents made the transition. The greater the value of postgraduate qualifications, the less likely that those with parents who have this qualification are to make it.

DISCUSSION AND CONCLUSION

Our analysis consisted of two parts. We began by assessing credential inflation in the United States, finding that most levels of education have generally lost value in terms of social class outcomes during the twentieth century. There has also been a widening gap in social class returns between educational levels from the 1940s onwards: despite a decrease in values for all qualification levels, the relative advantage of higher educational levels has increased, particularly since the 1940s. These findings are consistent with labor queue theory, which states that an increase in overschooling leads to relative advantages of the better educated (e.g. Hirsch 1977; Thurow 1975; Wolbers et al. 2001).

We then constructed a measure—we call it the 'intergenerational inflation factor' (IIF)—to compare the labor market value of specific educational transitions for each generation compared to the parents' generation. We included this measure in models predicting educational transitions to test the mechanism of 'relative risk aversion', which holds that

children invest in education to avoid downward class mobility (Breen & Goldthorpe 1997, Goldthorpe 2000). According to this theory, if an education level loses value compared to the parents' generation, children should be more likely to invest in this education to maintain their relative position in society. Our results contradict this theory for the first three transitions (up to college degree), where we found that children were *less* likely to invest in education if it has decreased in value. Only for the last transition (postgraduate degree) did we find support for the theory of relative risk aversion.

We further showed that the value of education is particularly influential on children's propensity to stay in school at a specific branching point if their parents made the same transition. This finding can be explained by an information differential, between parents who completed a transition and those who did not, regarding the value of education (cf. Erikson and Jonsson 1996). It implies that information about the labor market is an important consideration in the cost-benefit calculation in making educational decisions. We found most support for this information differential hypothesis for the transition to a college degree. We have two explanations for this: (1) most people end schooling at this transition, so the information differential can make a difference, and (2) parental information about college education is strongly in favor of staying in education rather than leaving because its value is very high. We also showed, however, that the effect was in the opposite direction for the postgraduates studies transition.

Why, then, are there differential effects of the value of education across transitions? We provide a simple explanation for this. For the first three transitions, additional schooling

is generally regarded as beneficial to one's career prospects. It follows from human capital theory that, if education is worth less, people are less likely to invest in it (Becker 1993; Freeman 1976; Mare 1981b). Additionally, if education is worth less, it becomes less attractive as an investment to avoid downward mobility. In such cases, other ways of transmitting inequality, such as class-related personality characteristics and social skills (Arrow et al. 2000; Breen & Goldthorpe 2001; Goldthorpe 1996b) could take effect. Similarly, within education, the field of study or the quality of educational institutions may play a role (Davies & Guppy 1997; Hirsch 1977; Van de Werfhorst 2002).

Postgraduate education fits less well into this framework. The labor market benefits associated with postgraduate training are somewhat obscure (Pascarella & Terenzini 1991), and the risks are relatively high. Parents who made this transition are aware of these risks, and perhaps discourage their children from pursuing postgraduate education unless it is necessary to avoid downward mobility. Furthermore, there are only limited opportunities of upward mobility for this group because of a ceiling effect. These two factors together suggest that the 'primary goal' of avoiding downward mobility largely explains investments in postgraduate training. Because of the ceiling effect we might expect the IIF to have different impacts on depending on the type of postgraduate education. For many occupations, for example physicians and lawyers, the level of education required to achieve them has remained fairly constant. As a result, children of people with such high level occupations might be likely to pursue the necessary qualifications to achieve these jobs regardless of whether the class returns have

decreased. Although outside the bounds of this paper, this speculation is interesting enough to deserve further research.

There are two important implications of these findings. First, our model shows that information differentials play an important role in explaining educational stratification, particularly at the higher levels of education. If the value of education varies across time, as it does in most Western societies, parents who made a transition to college or higher are advantaged in terms of providing accurate judgements of the value of that education and can advise their children accordingly. This information differential between social groups serves to establish and maintain social inequality. One way to reduce educational stratification would be to increase public knowledge of the benefits of higher education. If all children had the same quality of information at their disposal, this could plausibly reduce educational inequality. The likelihood of investing in schooling would still depend on the value of education, but to a more similar degree for children whose parents made a transition as for those whose parents did not.

A second, related, implication of our findings concerns the wider issue of meritocracy (Arrow et al. 2000). Our findings on the information differentials between social groups suggest that, in as far as education is an indication of one's merits, access to merit-enhancing attributes is unevenly distributed across groups of different information levels. Thus, although our results are not conclusive about this because our data did not contain a measure of ability, social groups seem to differ in their educational attainment not only because of 'meritocratic' factors, but also according to available information. It is widely

known that social networks and class-related personality characteristics aid access to good jobs, and disproportionately benefit children of the higher social strata (e.g. Breen & Goldthorpe 2001). So, although providing information to the wider public may enhance investments in higher education for children whose parents have lower education, it is less clear how this would affect their final position in social class structure. If employers do select largely on non-education based characteristics, educational policy is unlikely to have the desired effect.

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Table 1
Descriptive statistics for demographics variables

	Proportion
Female	.550
Non-white	.141
Southern states	.290
Highest education of parents	
Primary school	.212
High school	.475
Some post-secondary	.115
Completed college	.122
Postgraduate degree	.076
Father's class	
Unskilled manual	.319
Skilled manual/routine nonmanual	.387
Lower managers and professionals	.058
Higher managers and professionals	.244
Educational transitions completed (unconditional on previous transitions)	
Transition 1 (high school)	.958
Transition 2 (some post-secondary)	.522
Transition 3 (college degree)	.321
Transition 4 (post-graduate degree)	.129
Number of cases	17,058

Table 2
Intercohort change in distribution and allocation of education and social class (column percentages within cohorts)

Educational level	Unskilled manual	Skilled manual, routine non-manual	Lower managers and professionals	Higher managers and professionals	Total
		Cohort 1 1900-07 (N = 484)			
Primary	68.9	45.4	16.7	16.8	45.2
High school (completed)	29.3	42.1	29.2	29.2	34.1
Some post-secondary	1.2	8.7	8.3	13.3	7.2
Completed college (4yrs)	.6	2.2	20.8	20.4	6.8
Postgraduate		1.6	25.0	20.4	6.6
Total	100.0	100.0	100.0	100.0	100.0
		Cohort 2 1908-14 (N = 754)			
Primary	56.0	34.6	10.9	11.6	34.5
High school (completed)	38.5	50.5	34.5	26.8	40.5
Some post-secondary	3.8	11.0	21.8	16.5	10.7
Completed college (4yrs)	1.3	3.0	20.0	24.4	8.4
Postgraduate	.4	1.0	12.7	20.7	6.0
Total	100.0	100.0	100.0	100.0	100.0
		Cohort 3 1915-21 (N = 1131)			
Primary	44.6	22.5	2.5	7.5	23.3
High school (completed)	49.7	56.8	32.9	29.4	46.9
Some post-secondary	4.8	12.0	17.7	14.0	11.0
Completed college (4yrs)	1.0	7.1	24.1	24.5	10.8
Postgraduate		1.6	22.8	24.5	8.0
Total	100.0	100.0	100.0	100.0	100.0
		Cohort 4 1922-28 (N = 1356)			
Primary	36.4	19.1	3.8	7.1	19.5
High school (completed)	53.6	55.1	31.1	22.9	44.8
Some post-secondary	7.2	14.8	17.0	15.8	13.2
Completed college (4yrs)	1.9	9.2	18.9	26.5	12.3
Postgraduate	.8	1.8	29.2	27.7	10.1
Total	100.0	100.0	100.0	100.0	100.0
		Cohort 5 1929-35 (N = 1284)			
Primary	33.3	13.4	3.1	3.3	14.3
High school (completed)	56.1	57.3	21.9	25.4	44.4
Some post-secondary	7.7	15.9	18.8	14.8	13.9
Completed college (4yrs)	2.9	11.3	26.6	24.6	14.6
Postgraduate		2.1	29.7	32.0	12.9
Total	100.0	100.0	100.0	100.0	100.0
		Cohort 6 1936-42 (N = 1494)			
Primary	21.6	7.1	.6	1.8	8.1
High school (completed)	67.1	54.7	17.8	19.3	42.7
Some post-secondary	7.0	23.7	19.0	14.8	16.7
Completed college (4yrs)	3.2	10.0	31.0	29.9	16.8
Postgraduate	1.2	4.5	31.6	34.2	15.7
Total	100.0	100.0	100.0	100.0	100.0

Table 2 (continued)

		Cohort 7 1943-49 (N = 2227)			
Primary	12.4	4.4	.7	.9	4.6
High school (completed)	64.4	47.8	12.5	15.0	37.1
Some post-secondary	15.1	25.5	19.8	13.6	19.2
Completed college (4yrs)	6.6	17.0	34.0	33.1	21.7
Postgraduate	1.5	5.2	33.0	37.3	17.3
Total	100.0	100.0	100.0	100.0	100.0
		Cohort 8 1950-56 (N = 2371)			
Primary	5.4	2.0	.3	.2	2.3
High school (completed)	65.9	48.7	14.0	15.3	41.2
Some post-secondary	18.8	27.3	22.0	17.2	22.2
Completed college (4yrs)	8.2	17.9	36.0	32.1	20.9
Postgraduate	1.6	4.2	27.7	35.2	13.4
Total	100.0	100.0	100.0	100.0	100.0
		Cohort 9 1957-63 (N = 1918)			
Primary	3.2	1.5	.8	.2	1.6
High school (completed)	73.4	54.6	19.1	16.6	46.2
Some post-secondary	17.5	25.3	22.4	14.8	20.7
Completed college (4yrs)	4.5	15.1	38.2	35.1	19.9
Postgraduate	1.3	3.4	19.5	33.3	11.6
Total	100.0	100.0	100.0	100.0	100.0
		Cohort 10 1964-70 (N = 1185)			
Primary	2.5	1.3	.8		1.4
High school (completed)	66.2	44.6	17.4	12.6	42.5
Some post-secondary	20.6	33.2	20.5	20.2	26.3
Completed college (4yrs)	9.8	16.1	44.7	39.3	21.2
Postgraduate	.9	4.8	16.7	27.9	8.6
Total	100.0	100.0	100.0	100.0	100.0

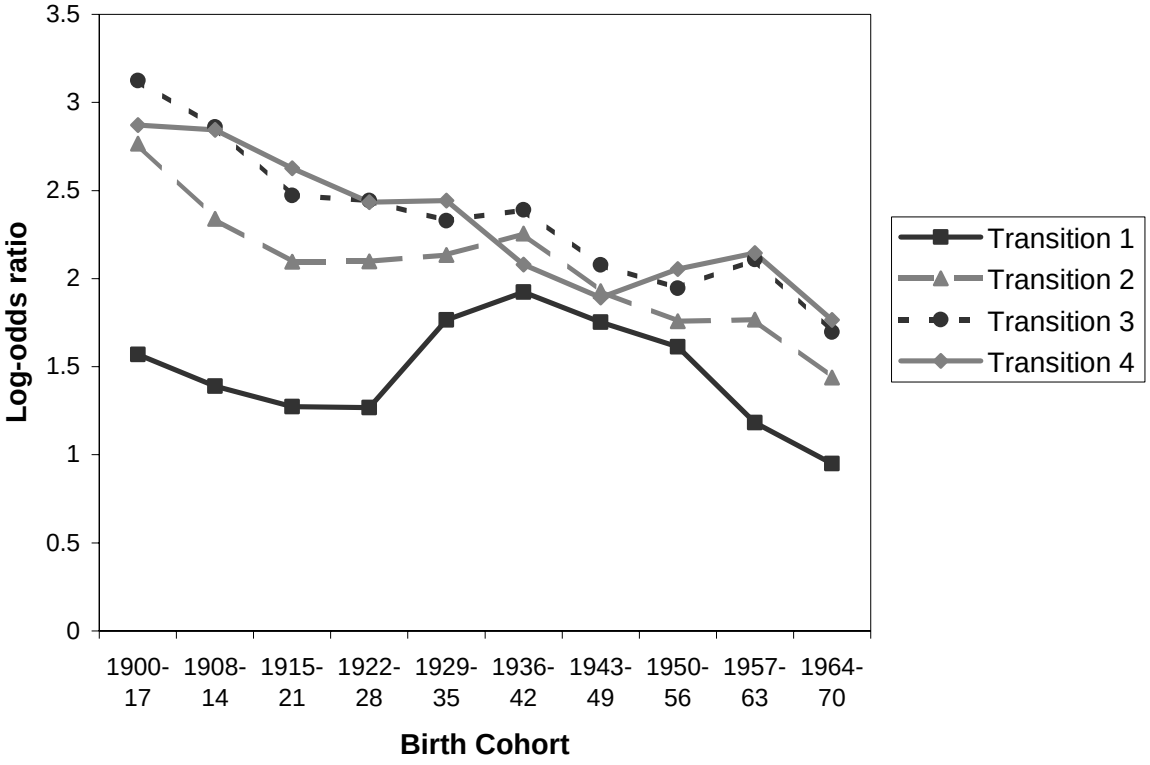
Source: General Social Surveys, 1972-2000 (men only).

Table 3
Impact of social background and credential inflation on conditional transition probabilities (pooled transitions, logit models)

Model	1		2		3	
	b	se	b	se	b	se
Constant	1.327***	.235	1.387***	.296	1.400***	.297
Transition 1 (reference)	—	—	—	—	—	—
Transition 2 (T2)	-3.092***	.048	-3.323***	.224	-3.521***	.235
Transition 3 (T3)	-2.923***	.121	-1.942***	.456	-1.807***	.495
Transition 4 (T4)	-4.075***	.108	-1.876***	.351	-2.450***	.394
Female	-.313***	.024	-.303***	.024	-.303***	.024
Percentage at risk	.003	.002	.004	.003	.003	.003
Non-white	.034	.036	.033	.036	.033	.036
South	-.233***	.027	-.219***	.027	-.219***	.027
Parents' education:						
Primary (reference)	—	—	—	—	—	—
Completed high school	.744***	.036	.463***	.038	.450***	.038
Some post-secondary	1.219***	.047	.381***	.057	.364***	.057
Completed college (4 yrs)	1.516***	.048	.639***	.066	.614***	.066
Postgraduate level	2.015***	.058	1.364***	.092	1.336***	.093
Father's class:						
Unskilled manual (reference)	—	—	—	—	—	—
Skilled, routine non-manual	.461***	.031	.436***	.031	.436***	.031
Lower managers and professionals	.688***	.055	.674***	.056	.675***	.056
Higher managers and professionals	.812***	.037	.789***	.037	.789***	.037
Intergenerational Inflation Factor IIF	.655***	.098	.158	.141	.145	.141
IIF × T2			.744***	.218	.991***	.234
IIF × T3			-.216	.429	-.345	.481
IIF × T4			-1.366***	.385	-.667	.440
IIF × Parents made transition			1.368***	.083	1.443***	.087
Parents made transition × T2			-.017	.090	.987**	.362
Parents made transition × T3			-.922***	.100	-1.502	.768
Parents made transition × T4			-1.553***	.124	.621	.697
IIF × Parents made transition × T2					-1.179**	.405
IIF × Parents made transition × T3					.598	.873
IIF × Parents made transition × T4					-2.548**	.792
-2LL	43386.28		42603.15		42584.03	
df	16		23		26	
Nagelkerke's pseudo-R^2	.397		.413		.414	

* p < 0.05 , ** p < 0.01, *** p < 0.001 (two-tailed)
Source: General Social Surveys 1972-2000, N = 47,774 (individuals × transitions faced)

Figure 1
Trends in the social class returns according to credentials



Note: Estimates are based on four separate cumulative logit models with social class regressed on four distinct binary classifications of education. Models are controlled for age, race and region. Men only.

Figure 2
Trends in the Intergenerational Inflation Factor for each educational transition

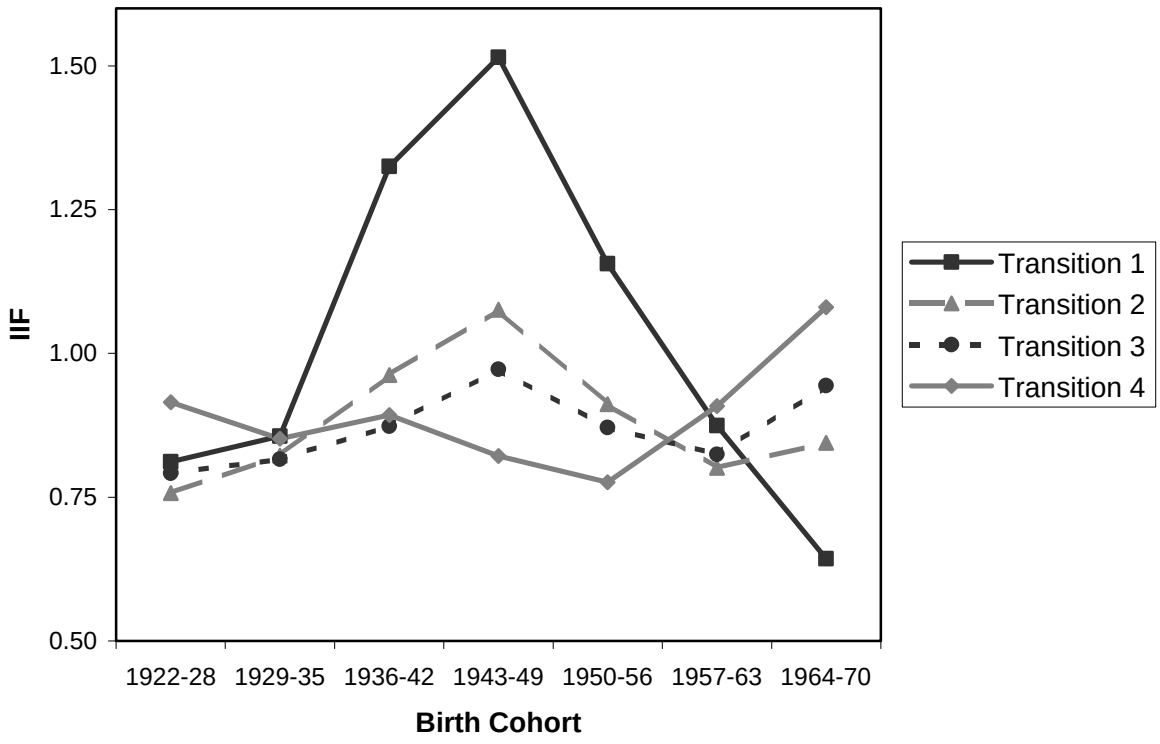
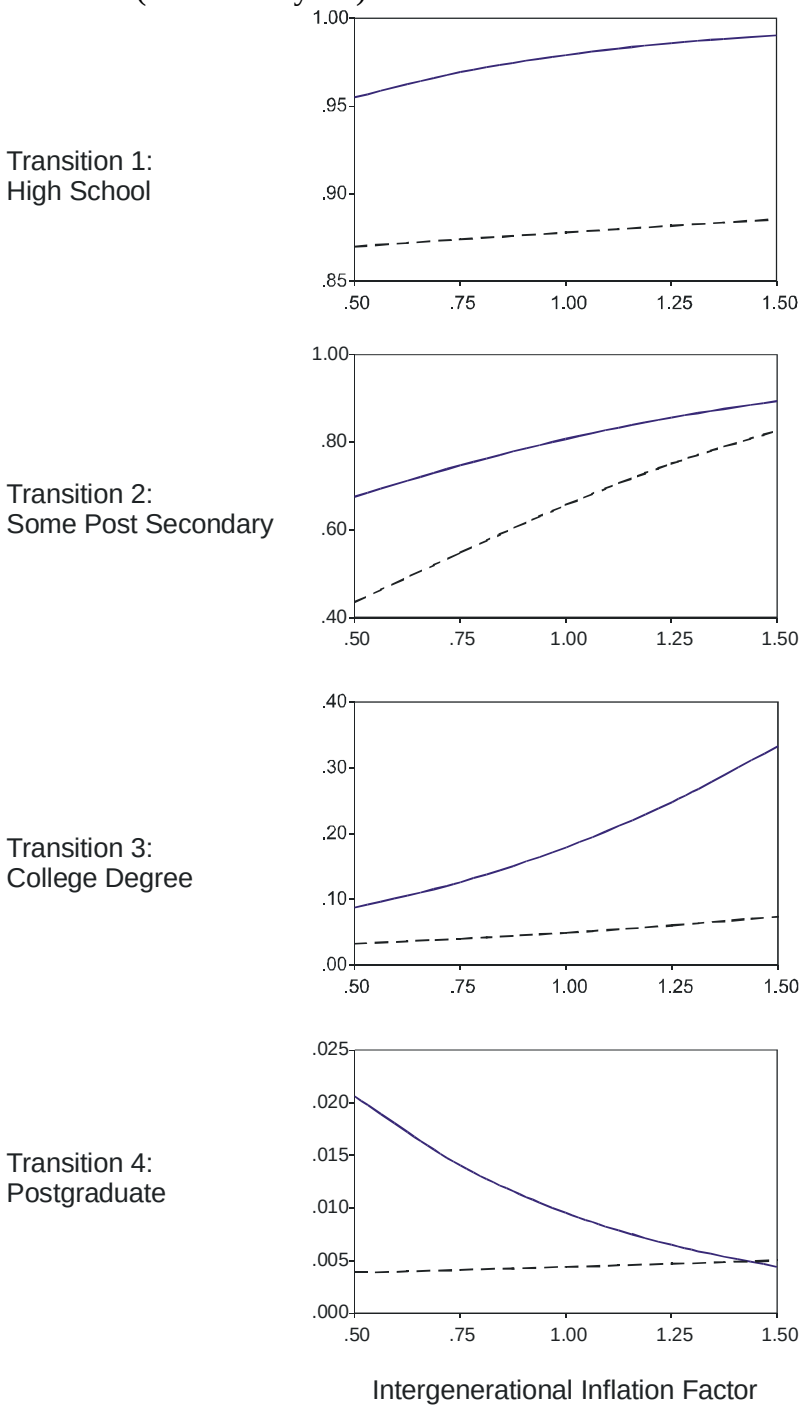


Figure 3
Fitted probabilities of completing educational transitions according to the value of education (measured by IIF)



Note: Probabilities are for the average person and are conditional on making the previous transition. The solid lines are for those whose parents made the transition; the broken lines represent the relationship for people whose parents did not make the transition. Note that the vertical scales of the graphs (probabilities) differ.