

Credential inflation and educational strategies: A comparison of the United States and the Netherlands[☆]

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Abstract

This paper analyzes the trend in the effect of education on social class attainment, and uses this information to test hypotheses on the impact of credential inflation on educational decision making in the United States and the Netherlands. After having shown evidence for credential inflation of three educational transitions, it was shown that credential inflation between two generations increased the likelihood of making a transition into tertiary education in the Netherlands, and into high school completion and into 4-year university degrees in the United States. This supports the theory that education functions as a positional good, and if education loses value people need more of it in order to reach the same social class as their parents. Cross-national variation is explained with the theory that education in the United States functions more as a positional good than it does in the Netherlands. © 2009 International Sociological Association Research Committee 28 on Social Stratification and Mobility. Published by Elsevier Ltd. All rights reserved.

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1. Introduction

This paper asks the question to what extent the labor market value of educational qualifications affects educational decision making, and whether this influence

varies according to the parents' education. Based on theories on educational decision making developed in the past years, it is argued that children take their parents' social class as a reference of own aspirations, and that their primary goal is to avoid downward mobility (Boudon, 1974; Breen & Goldthorpe, 1997; Goldthorpe, 2000, Chapter 11; Morgan, 2005). To the extent that this is the case, children's educational choices will depend on whether education is a 'positional good'. According to an important group of mechanisms explaining the effect of education on labor market outcomes, education does not produce productive skills but rather signals attributes such as talent, trainability or motivation (Arrow, 1973; Hirsch, 1977; Spence, 1973; Thurow, 1976). These approaches share that education functions on the labor market as a positional good; not primarily the skills that are learned in schools, but rather the relative position of holders of a particular qualification

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level on the labor market determines the value of qualifications. If education functions as a positional good, children's educational decision making in order to avoid downward mobility assumes that they would need *more* education than their parents if qualifications have lost part of their value. Only by investing more in education if qualifications lose value, children are able to maintain their parents' class position.

There are good grounds to expect that countries vary in the extent to which education functions as a positional good on the labor market, and thus in the extent to which children's educational decision making is affected by the relative value of educational qualifications in comparison to what they were worth for their parents. To understand these cross-national differences, we must first have a look at an important alternative theory of why education pays off on the labor market: human capital theory. Human capital theory assumes that people learn productive skills in school, and that employers are rewarding these skills because of the higher marginal productivity of skilled workers relative to unskilled workers.

One of the most important cross-national differences in educational systems is precisely this skills-producing function of schooling. In some countries, such as Germany and the Netherlands, educational systems are highly vocationally specific, aimed at the production of skills that are relevant for work and are rewarded by employers as such (Culpepper & Finegold, 1999; Shavit & Müller, 1998; Thelen, 2004). Given the large vocational orientation of the secondary and tertiary schooling system, it can be expected that education functions more in line with human capital theory in these countries relative to countries of which the educational system is far less vocationally oriented. One example of such an educational system that is far less vocationally oriented is the American system. Instead, the American educational system is largely hierarchical and linear, with less institutionalized tracking at secondary and tertiary levels, and fewer institutional linkages between schools and employers (Culpepper & Finegold, 1999; Lucas, 1999; Müller & Gangl, 2003; Thelen, 2004). Such a system would make employers far less likely to judge qualifications on the basis of the skills that have been acquired in school, and more likely to judge educational qualifications on the basis of their relative value. Such a linear schooling system makes families more likely to adjust their educational decision making strategies on this positional basis.

This paper studies the impact of credential inflation on educational decision making for two countries: the Netherlands and the United States. For both coun-

tries large combined datasets are available that allow the investigation of trends in the impact of education on occupational social class attainment for birth cohorts from the end of the 19th century up to the 1980s, as well as the impact of intergenerational credential inflation for birth cohorts who have parents born as far back as the 1880s.

2. Credential inflation and educational decision making

Recent theories of educational inequality state that children take the social position of the parents as a reference for own aspirations. The 'primary goal' of individuals is to avoid social demotion (class maintenance); only in secondary instance people strive for upward mobility (Goldthorpe, 1996, 2000). The decision to continue at a certain branching point in the educational career or to leave the educational system to enter the labor and/or marriage market is thus dependent on the question whether one *needs* the next step in the educational career to avoid downward mobility, or whether one has already realized this goal at that point. Children from lower social classes will then leave the educational system earlier than children from higher class backgrounds. At a relatively early point in the educational career they have achieved class maintenance, while children from higher social origins with the same abilities need to proceed further to safeguard their primary goal.

The relativeness of the risk averse action lies in the relativity towards the origin class. After secondary school children of lower class backgrounds have a higher risk in the next educational step. If the continued education is not finished, one has wasted resources without gaining benefits from them. Children from middle class origins have little choice; they will do as much as they can to proceed to the next step. The implication of this reasoning is that, among children with equal abilities, lower class children have to be more ambitious than their middle class peers to achieve higher levels of schooling. Furthermore, social inequalities are largest among children with average abilities (Boudon, 1974, 1998). Children from middle class backgrounds with lower-than-average abilities will be relatively likely to leave the educational system relatively early, just as their lower class peers; and high-ability students of all social origins will have a high propensity to attain high levels of schooling.¹

¹ The relative risk aversion theory distinguishes between primary and secondary effects of social origin on educational opportunity (Boudon, 1974). Primary effects refer to the effects that determine early

In the economics literature the relative risk aversion theory has been analyzed by looking at the differential impact of social origin across educational transitions (Davies, Eskil, & Anders, 2002). These authors hypothesize that the impact of parental education should be strongest on that transition that is the highest that the parents have achieved, which was supported with Danish data. Holm and Jaeger (2005) investigated whether the utility derived from educational choices increase up to the level of schooling that ensures class maintenance. They found clear support for this. Others test hypotheses on the impact of origin on ambitions and grades (Need & De Jong, 2000). Their findings can not only be explained by the mechanism of relative risk aversion, but also by cultural theories. Dumais (2002) for example, interprets social differences in ambitions as reflecting differences in *habitus*, a central concept of cultural capital theory. Breen and Yaish (2006) get closest to a direct empirical test by looking at class differences in the impact of expected probability of success on making educational transitions. According to RRA theory, children from lower social origins need, *ceteris paribus*, to have a higher probability of success to make a transition than children of higher origins.

Van de Werfhorst and Hofstede (2007) compared the relative risk aversion theory with cultural reproduction theory with regard to educational outcomes using unique data on Amsterdam school pupils. Their study was the first to operationalize and measure the ‘social mobility concerns’ of secondary school pupils, and how this affected their ambitions. Interestingly, corresponding to the basic assumption of the relative risk aversion mechanism, children’s concern with class maintenance was invariant across parental class and education levels. Moreover, mobility concerns were a far better predictor of schooling ambitions than was cultural capital. On the other hand, cultural capital was a far better predictor of school performance. This led the authors to conclude that cultural capital is a preferred mechanism when it comes to explaining primary effects of social origin on schooling outcomes, whereas relative risk aversion was a preferred mechanism when it comes to understanding secondary effects of social origin.

Van de Werfhorst and Andersen (2005) have examined the relative risk aversion theory by focusing on the

impact of credential inflation on educational decision making in the United States. It is their work that forms the basis of the present study. Their hypothesis was that, if qualifications lose part of their labor market value, children need more education to reach the same class position as their parents. This was tested by incorporating the intergenerational labor market value change of having made particular educational transitions for class attainment as an independent variable in predicting the likelihood to pass that particular transition. Moreover, the impact of the credential inflation on educational decision making was expected only to have an effect if parents had made the particular transition under study themselves. Van de Werfhorst and Andersen explained this finding by an information differential; parents could more accurately inform their children on the temporal change in the value of qualifications if they had achieved that same qualification level themselves.² Although they found support for the information differential thesis in the sense that credential inflation only affected the successful completion of transitions if parents had made the same transition, support for the *direction* of the effect (i.e. a lower labor market value should *increase* the chance to make educational transitions) depended on the transition under study; for some transitions the effect was that a decreasing labor market value decreased the chance of making the transition.

3. Schooling in the American and Dutch labor markets

It is likely, but thus far untested, that countries vary in the usefulness of a mechanism to explain why schooling affects labor market outcomes. Thus far economists have paid much attention to comparing mechanisms for ‘the education effect’ largely by comparing human capital from positional good (or ‘screening’) explanations (e.g. Groot & Oosterbeek, 1994; Jaeger & Page, 1996; Layard & Psacharopoulos, 1974; Weiss, 1995). However, these studies have not aimed at explaining cross-national variation in the usefulness of such mechanisms. On the other hand, sociologists have carefully studied cross-national variation in the strength of the effect of schooling on labor market outcomes, but they have ignored the differential mechanisms underlying this

(demonstrated) ability (a.o. genetic, but also early cultural influences). Secondary effects refer to inequalities in educational achievements independent (and on top of) of primary effects. In this paper we cannot distinguish primary from secondary effects, as measures for demonstrated early ability (or intelligence) are unavailable in our repeated cross-sectional surveys.

² The main effect of parents having made transitions as a predictor of children making transitions has also been studied by Mare and Chang (2006). Unlike Van de Werfhorst and Andersen (2005) they added this variable to a model that included linear educational attainment of parents in order to detect non-linearities in the impact of parental education.

relationship (cf. Müller & Gangl, 2003; Shavit & Müller, 1998).

Combining these two strands it is likely that countries vary in the extent to which human capital theory explains the effect of education well, or the extent to which screening on ability, motivation or intelligence (i.e. education as a positional good) is a useful mechanism to explain the education effect. In order to hypothesize the usefulness of human capital versus positional good in a particular country, we should look at conditions under which it is likely that employers behave in a way that corresponds to the behavioral models of the two theories. In the Dutch context, given the dominance of the vocational education and training system it is likely that employers behave more in line with human capital theory than in the United States. In the many vocational schools students acquire productivity-enhancing skills, just like human capital theory assumes, and employers have a large say in the development of vocational programmes. In addition, given the stratified nature of the Dutch schooling system – with many different fully institutionalized tracks in different schools from the age of 12 onwards – fewer students achieve tertiary qualifications in comparison to the US. This is partly because fewer students acquire preparatory schooling programmes that give access to tertiary education. Only a minority of secondary-level students in the Netherlands enroll into the university-preparatory track directly after primary education. However, it is also possible that enrolment is lower because at lower levels people acquire transparent qualifications that employers know and prefer for a large number of jobs (cf. Shavit & Müller, 1998). This is particularly likely because tuition fees in higher education are very low in the Netherlands in comparison to the United States due to the virtual absence of a private higher education sector.

In the United States, on the other hand, given the limited vocational orientation of the schooling system, it is likely that education functions primarily as a positional good. Employers cannot rely on the educational system to produce ready-to-use skills in students, and work-related skills are therefore mainly learned ‘on the job’. In their search for easily trainable employees, employers will have a tendency to select the candidate with the highest level of education, irrespective of the actual skills that have been achieved (Thurow, 1976). Such a system induces many people to enrol in higher education, because at lower levels no valuable skills are acquired, and because the relativity of education makes it necessary for many jobs to have a college degree.

In addition to this difference in the vocational education system, also the varying level of standardization

of the education system is important. In the US, education policy is mostly developed at state or even county level, whereas the educational system is highly nationally standardized in the Netherlands. Because standardization makes the value of educational qualifications more transparent to employers, the lack of national standardization in the US induces employers to rely on very rough indicators of potential productivity.

In addition, it could be argued that the level of technological advancement of countries is positively related to the positional good functioning of education. If an institutional setting is highly technologically advanced, it is impossible for schooling systems to produce the relevant skills for work. As high-tech companies are in the middle of designing technology and *creating* knowledge, it is unlikely that such companies see education as producing relevant knowledge and skills. Rather, education indicates trainability, as is assumed by the positional goods perspective. Some figures indicate that the US labor market is more technologically advanced than the Dutch labor market. For instance, expenditure on Research and Development as a percentage of GDP is much higher in the USA (2.72% in 2000 in the USA, against 1.94% in the Netherlands, OECD, 2005). However, there are also indicators that show less difference. The share of ICT services of the total business services is rather similar in both countries (around 11%). The number of triadic patents relative to GDP is even higher in the Netherlands, with 17 times as many patents in the US against a GDP of 21 times as high as the Netherlands (OECD, 2005).

4. Hypotheses

Based on aforementioned theories on the positional character of schooling on the labor market, where not primarily the skills that are learned are important, but rather the relative position in comparison to other job seekers, it is likely that people’s educational decision making is responsive to changing values of qualifications across generations. More specifically, it is expected that a *decreasing* labor market value across generations of having made a particular educational transition makes children *more likely* to make that transition (which we label the *positional good hypothesis*).

However, it is unlikely that the effect of the value of education is equally strong for all individuals in a particular cohort. Children are most likely to be affected by credential inflation/deflation if the educational transition under study is a transition that parents have completed themselves. We label this the *information differentials hypothesis*. Children need to be informed about the labor

market value of qualifications, and it is more likely that parents can provide accurate information when they have completed the transition themselves. Given that human behavior is more in line with one's beliefs if the beliefs are more accurate (Morgan, 2005), better information about the labor market consequences of making educational transitions will more strongly lead to a correspondence of the provided information with the action taken. In addition, as Davies et al. (2002) demonstrated, the impact of parents' education is strongest on the educational transition which is the highest of the parents. Beyond the highest transition of the parents, children's educational choices are much less dependent on parents' education. This may also lead to weaker effects of credential inflation on children's educational decisions at transitions beyond the highest of the parents. Another reason why credential inflation particularly affects educational transitions that parents have completed is that educated parents are simply more strongly involved in children's educational decision making than parents with less education (Morgan, 2005; Sewell, Hauser, & Featherman, 1976). Such involvement may include searching information about labor market values of qualifications, and providing such information to their children.

Following earlier studies (Mare & Chang, 2006; Van de Werfhorst & Andersen, 2005) our models include a dummy variable indicating whether parents have completed the transition under study. Mare and Chang (2006) included this dummy to demonstrate non-linearities in the effect of parents' education. Van de Werfhorst and Andersen (2005), using the same American data as Mare and Chang, furthermore included an interaction effect between an indicator of intergenerational credential inflation and this dummy variable.

As argued in the previous section, it is likely that the impact of credential inflation on educational decision making varies between the United States and the Netherlands. If the US school system indeed functions more like a sorting device than as an indicator of productive skills (Weiss, 1995), whereas the Dutch system is more skills-oriented, it can be expected that the effect of intergenerational credential inflation is stronger for the USA than in the Netherlands (the *educational system hypothesis*).

5. Data

Use is made of a great number of surveys held in the past decades, for both countries. For the United States, I use the cumulative General Social Surveys of 1972–2004. For the Netherlands I employ the collection

of national surveys brought together by Ganzeboom and Luijkx (2004).

These datasets are used for two different types of analysis. First, using data for men only, we detect the changing value of having made three educational transitions across cohorts by running ordered logit models on class destination. The resulting parameters are used to calculate, for each transition separately, the intergenerational value of education ratio for a subset of the cohorts (i.e. those cohorts for whom parental cohorts are also available). This intergenerational value of education ratio indicates the extent to which qualifications have lost or gained value. It equals 0 if educational transitions have the same labor market value for children as it had for their parents' generation, is lower than 0 if the value has decreased across generations, and is higher than 0 if the value has increased.

The second analysis focuses on the transition models developed by Mare, 1980; Mare & Chang, 2006), which are estimated for men and women together. In addition to gender, parental class, father's education, and age, these transition models add the intergenerational value of education ratio as independent variable (see below for its construction). Hypothesis 1 predicts that this variable has a negative effect on the probability to make a transition. Using interaction models we can test whether the impact of the intergenerational value of education ratio varies between children of parents that did and those that did not complete the transition.

6. Operationalizations

Social class is used to detect the trend in the effect of education (hence social class as 'destination' in the mobility literature), as well as to measure the impact of parents' class on transition probabilities. We look at class destination to observe trends in the impact of education for two main reasons. First, the theory of relative risk aversion underlying our positional goods hypothesis is developed to explain rather stable levels of class mobility (Breen & Goldthorpe, 1997; Goldthorpe, 1996). Hence, our study builds on a large literature looking at the impact of education in the class mobility process. Second, because we observe birth cohorts starting at the end of the 19th century in data gathered between the 1960s and the early 2000s, earlier birth cohorts give on average information about their labor market position at an older age than later birth cohorts. Given that social class is more or less stable across the life cycle after the age of 35 (Breen, 2004), these cohort differences are less problematic than if we had used, for example, earnings. Earnings continue to change for

a much longer part of the life cycle, certainly for the top half of the earnings distribution so that earnings inequality increases with age (Goldthorpe & McKnight, 2006).

We employ the widely used Erikson and Goldthorpe class scheme (1992), although slightly modified. For observing trends in the impact of education on social class attainment we needed a hierarchical version of the class scheme, because claims that children want to reach ‘as high as their parents’ requires an hierarchical version. The hierarchical version distinguishes between the higher service class (class I), the lower service class (II), routine non-manual work higher grade (IIIa), higher-grade technicians and foremen (V), skilled manual work and routine non-manual work lower grade (IIIb and VI), and unskilled manual and farm work (VIIa and VIIb). Note that we left out the self-employed (including self-employed farmers) because it is difficult to place self-employed on an hierarchical scale.

Father’s education is measured in years. In the American GSS this variable is directly available, but in the Dutch data we had to construct this variable on the basis of highest achieved level of schooling.³

Birth cohort is operationalized in intervals of five birth years (except for the first two cohorts and the last cohort (1879–1900; 1901–1910; 1911–1915; 1916–1920; 1921–1925; 1926–1930; 1931–1935; 1936–1940; 1941–1945; 1946–1950; 1951–1955; 1956–1960; 1961–1965; 1966–1970; 1971–1975; 1976–1982). Gender is included as a dummy variable indicating women.

We distinguish among three educational transitions, which were constructed on the basis of the highest achieved educational level.⁴ The *first transition* equals high-school completion in the USA, and the completion of upper secondary school in the Netherlands (MBO, HAVO or VWO). Note that upper secondary education

in the Netherlands is more selective than high-school completion in the USA, because pupils can obtain a lower secondary school diploma before enrolling upper secondary school. Yet I chose to harmonize the first transition by the requirement that completing it gives access to tertiary education.⁵

The *second transition* is whether one has at least been enrolled in some post-secondary education, but not necessarily a full university degree. In US this implies some college but not necessarily a 4-year college degree. In the Netherlands this is operationalized as having completed at least vocational college (HBO). Although HBO programmes take 4 years to complete, the differential selection into HBO programmes relative to university is very similar to community colleges relative to universities in the United States. The *third transition* is (at least) a university degree in the Netherlands, and at least a 4-year college completion in the USA.

Fig. 1 describes the proportions of the cohorts that have completed the three transitions. It can be seen that in both countries the unconditional completion of high school has increased across cohorts, and reached close to saturation in the American GSS data. The other transition proportions are conditional on having completed the previous transition. In the United States, the probability of tertiary enrolment has increased conditional on high school completion, from less than 40% in the earlier cohorts to almost 60%. In the Netherlands this is not the case; the conditional proportion that enrolled tertiary schooling has decreased from less than 50% to around 30%. The massive increase of intermediate vocational school as a final education (here counted as high-school completion) is responsible for this finding; an increasing share of high-school graduates are from these MBO colleges, which prepare for access to employment without further schooling. It should be noted that access into some form of tertiary education is rather easy for people who completed upper secondary education in the Netherlands, so this drop in conditional enrolment is not explained by stronger formal restrictions in the

³ Dutch qualification levels are recoded in the following way: less than primary = 5 years, primary completed = 6 years, some postsecondary = 8 years, completed lower secondary (lbo, mavo) = 10 years, intermediate and higher general secondary (havo/vwo) = 13, intermediate vocational (mbo) = 14, tertiary vocational college = 16 years, and university = 17 years. Other sensible specifications lead to very similar results as reported here.

⁴ The datasets did not include educational careers. This limits our study to hierarchical transitions, so that we cannot examine transitions into vocational or general tracks relative to drop-out (cf. Breen & Jonsson, 2000; Lucas, 2001). Constructing educational transitions from the highest achieved level of schooling is common-practice in educational stratification research (e.g. Shavit & Blossfeld, 1993; Mare & Chang, 2006, and many others).

⁵ Also the definition of tertiary education varies between the countries though. In the Dutch system, intermediate vocational school (MBO) is generally not considered to be part of tertiary education, although access to this program is only given after completion of lower secondary school (around the age of 16). Relatedly, for many of the jobs that MBO-programmes prepare for (e.g. lower grade IT specialists and nurses), American students would automatically need a qualification in tertiary education (e.g. in a community college). This explains part of the differences in tertiary enrolment; and makes claims of Dutch (and other European) policy makers to increase tertiary enrolment to the same level as in the US somewhat superfluous.

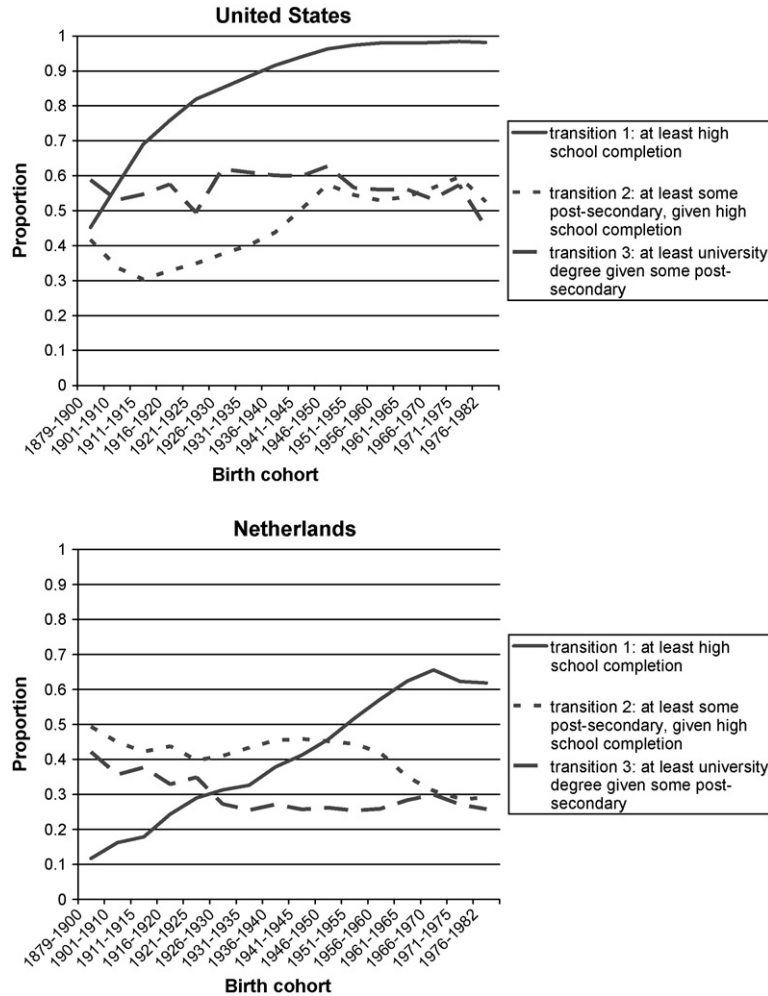


Fig. 1. Trends in transition completion.

system. The probability of completing a full university degree conditional on some post-secondary enrolment is stable in the United States (around 60%), and slightly decreased in the Netherlands (from around 40 to 30%). This latter finding can be explained by the relative increase of vocational college enrolment within tertiary education.

7. Results 1: trends in the impact of transitions on class attainment

We estimate ‘returns’ to having made a particular educational transition in terms of class attainment, using the following ordered logit regression model for each transition *j* separately, in a similar manner as in Van de Werfhorst and Andersen (2005) and Van de Werfhorst

(2005):

$$\log\left(\frac{p(Y > d)}{p(Y \leq d)}\right)_j = \alpha_d + \beta_{1j}TRANS_j + \beta_2AGE + \sum_{K-1} \lambda_k COH + \sum_{K-1} \delta_{kj} COH \times TRANS_j \tag{1}$$

where $TRANS_j$ is a dummy variable indicating whether the individual has at least completed transition *j*, COH is a variable of *K* cohorts, of which *K* – 1 have been included as dummy variables, and AGE is age in years. Because the interaction term $COH \times TRANS$ is included in this model, β_{1j} represents the effect of having made at least transition *j* for the omitted cohort; and the cohort-specific transition effect for cohort *k* equals $\beta_{1j} + \delta_{kj}$.

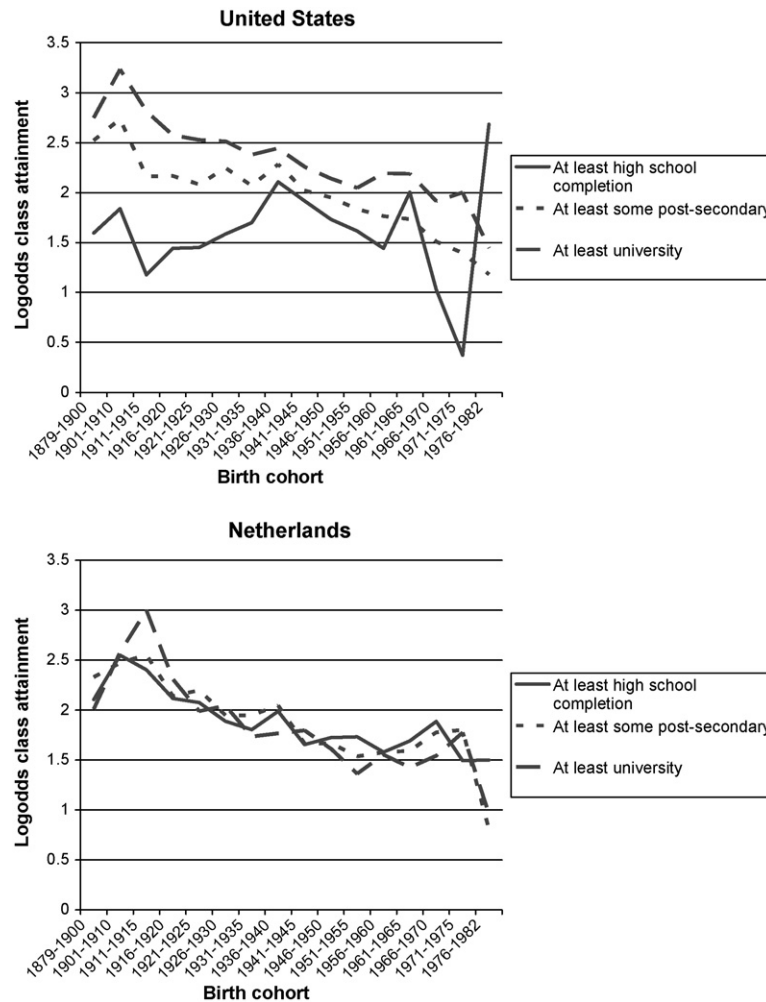


Fig. 2. Trends in the effects of obtained transitions on social class destination.

If we call this cohort-specific effect of having completed at least transition j ω_{kj} , we estimate the intergenerational value of education ratio by use of two cohort-specific effects: one for the cohort immediately preceding the cohort of the respondent (ω_{k-1j}), and one for four 5-year birth cohorts before the respondents' cohort (ω_{k-4j}). The cohort preceding the birth cohort of the respondent is indicative of the 'current value' of qualification for class attainment. The value of the older cohort is indicative of the value of the parents' generation.

Taking the preceding cohort rather than the respondent's own cohort to measure the current value of schooling is important for two reasons. First, our model assumes that information about the value of education affects educational decision making, and people have no knowledge of the value for their own cohort. The value for people entering the labor market just before

the respondent is indicative of what is conceived of as the actual labor market value. Second, taking the preceding cohort has the advantage that possible findings are not explained by reversed causality, when increases in participation rates affect the labor market value of qualifications rather than the other way around.

The intergenerational value of education indicator (IVE) for transition j and persons belonging to cohort k is computed by dividing the current value of education by the value for the parents' generation, and then taking the natural logarithm in order to have the ratio mirrored around zero. Formally, $IVE_{jk} = \ln(\omega_{k-1j}/\omega_{k-4j})$.

The IVE ratio equals 0 if education has not changed in value between two generations, is larger than 0 if the value has increased, and lower than 0 if the value has decreased.

Fig. 2 shows the trends in the value of education across cohorts. The logodds of reaching at least one higher class

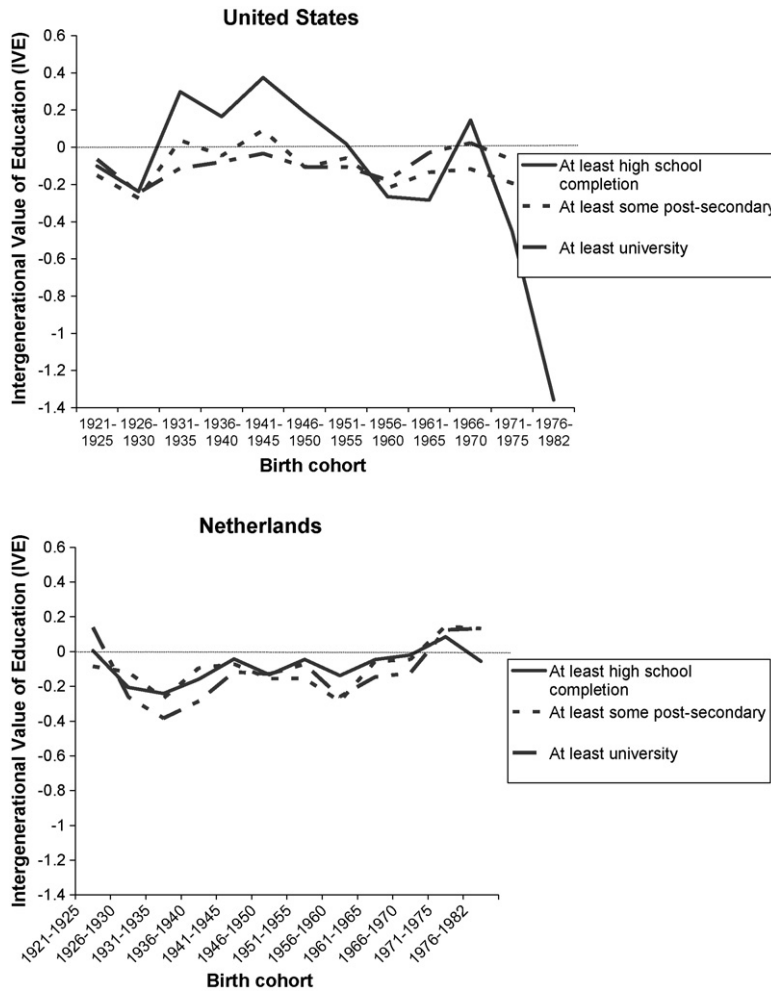


Fig. 3. Intergenerational value of education ratios.

level relative to having completed at most the class level below, increases by having completed educational transitions; not surprisingly. In the United States the odds of higher class attainment are relatively much increased by university degrees, whereas for the Netherlands the relative advancement is much more similar across transitions. Note that the lines result from three different equations with each its own threshold (intercepts). With few exception the transitions have monotonically lost value across cohorts. One exception is high school completion in the USA; its impact on class attainment rose in between the birth cohorts of the early 20th century until the 1930s birth cohort. Also the labor market value of American high schools in the last cohort is very high, and clearly out of pattern of the predominant trend. This outlier value has no consequence for our measure of the intergenerational value of education ratio, as for each cohort the ‘current’ value of qualifications

is measured by the value for the preceding cohort (see above).

The decreasing value of transitions is more clearly seen in Fig. 3, which depicts the intergenerational value of education ratio. With some exceptions, most notably with regard to US high-school graduation in the first half of the 20th century, ratios are generally below 0, indicating a loss in value. High school completion has lost much of its value intergenerationally in the United States since the mid 1960s birth cohorts. In the Netherlands the effect of education increases across generations for the post-1970s cohorts.

8. Results 2: credential inflation and educational decision making

Now we turn to the second part of our analysis, where educational transition models are estimated with the IVE

ratio as independent variable. We analyze the three transitions separately. For each transition we analyze three models: one baseline model including gender, father's social class, father's years of education, and the dummy indicating whether the father has completed the transition under study. This is a model similar to the model by [Mare and Chang \(2006\)](#), which tests for non-linearities in the effect of father's education (although we do not include birth cohort as the IVE ratio is assigned on the basis of cohort). Model 2 adds the intergenerational value of education (IVE) ratio developed in the previous section. Model 3 adds an interaction effect between the dummy variable of father's completion of the transition with the IVE ratio.

8.1. *Transition 1: high school completion*

[Table 1](#) shows the results for the first transition into high school completion (United States) and upper secondary school completion (Netherlands). For this transition it is clear that women are, overall, less likely to have completed this educational transition than men in the Netherlands, and more likely than men in the US. Father's social class and father's educational attainment have the expected effects, with children from higher social origins being more likely to make the transition into high school completion than people of lower social origins. Model 1 also reveals that father's education only has a linear effect in the US (seen in the positive effect of father's years of education). The dummy variable indicating non-linearities is not significant in models 1 and 2. For the Netherlands, however, we clearly see non-linear effects of father's education. On top of a linear effect of father's educational level, there is an additional likelihood of enrolling in upper secondary education if the father has also completed this. The non-linear character of the Dutch educational system (particularly at the secondary level) is likely to be responsible for this non-linearity.

In model 2 the IVE ratio is added to the logistic regression equation. In this model we see that the effect of the IVE ratio is positive in both countries, but only significantly so for the Netherlands. This finding is not in line with the expectation that a decrease in the labor market value of qualifications leads to an increasing probability to make an educational transition. In model 3 we differentiate between the effect of the IVE ratio between children whose father did, and those whose father did not complete the first transition. This model shows that, in the United States, the IVE ratio has a negative effect only for people whose father has completed this transition. This is in line with the information differentials hypothe-

sis, which predicted that concerns for the positional value of schooling would be particularly likely among children whose parents completed the transition under study. The analysis on the Netherlands reveals a completely different picture. In the Netherlands, the positive effect of the IVE ratio is independent of whether parents have made the transition. Thus, in line with human capital theory rather than with the intergenerational positional theory of education, if graduating from upper secondary education becomes more profitable, Dutch children are more likely to enroll.

8.2. *Transition 2: some post-secondary education*

In [Table 2](#) we show the analyses for the second transition into some post-secondary education (US) and into vocational college completion (Netherlands). In model 1 we see similar effects as for the first transition, although the effects of social origin are smaller. This is a common finding that could be explained by the life cycle hypothesis that at later transitions children are more independent from their parents ([Shavit and Blossfeld, 1993](#)), and by the alternative hypothesis of increasing unobserved homogeneity across transitions ([Mare, 1993](#)). Unexpectedly, in the United States there is a negative effect of fathers having made the transition into some post-secondary education on children's transition probability. In the Netherlands the effect is in the expected direction.

The IVE ratio indicating intergenerational credential inflation does not have a significant effect on the probability to make the transition into higher education in the United States, as with the first transition. The hypothesis that a lower value of qualifications leads to a higher likelihood to obtain that education is therefore refuted for enrolling tertiary education in the United States. In the Netherlands, however, the effect is negative, which is in line with the positional goods hypothesis that states that children are more likely to make a transition if that transition has lost value across generations. As model 3 shows, the effects are not different between children whose fathers did and those whose fathers did not complete the transition into some post-secondary schooling. Therefore, for the second transition the information differentials hypothesis is rejected.

8.3. *Transition 3: full university degree*

[Table 3](#) shows the results for the third and final transition into the completion of a university degree. This table shows the common finding that the effects of social origin are smaller than in the previous transitions. Impor-

Table 1
Logistic regression of completing high school.

	United States			Netherlands		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Female	0.415*** [0.0806]	0.415*** [0.0807]	0.416*** [0.0807]	−0.555*** [0.0276]	−0.559*** [0.0277]	−0.559*** [0.0277]
Father's social class (relative to unskilled working class)						
Skilled working class and routine non-manual lower grade	0.833*** [0.107]	0.833*** [0.107]	0.837*** [0.107]	0.515*** [0.0698]	0.526*** [0.0697]	0.526*** [0.0697]
Technicians and foremen	0.603*** [0.192]	0.604*** [0.192]	0.608*** [0.192]	0.546*** [0.0500]	0.536*** [0.0502]	0.536*** [0.0502]
Routine non-manual higher grade	1.488*** [0.297]	1.489*** [0.297]	1.486*** [0.297]	0.799*** [0.0505]	0.799*** [0.0507]	0.799*** [0.0507]
Lower service class II	0.916*** [0.325]	0.917*** [0.326]	0.907*** [0.326]	0.966*** [0.0420]	0.971*** [0.0423]	0.971*** [0.0423]
Higher service class I	1.099*** [0.164]	1.100*** [0.164]	1.105*** [0.164]	0.981*** [0.0445]	0.979*** [0.0447]	0.979*** [0.0447]
Father's educational attainment (years)	0.261*** [0.0160]	0.261*** [0.0160]	0.259*** [0.0160]	0.160*** [0.00602]	0.153*** [0.00606]	0.153*** [0.00607]
Father completed transition 1	0.0516 [0.139]	0.0534 [0.140]	0.100 [0.142]	0.203*** [0.0520]	0.244*** [0.0523]	0.246*** [0.0689]
Intergenerational value of education ratio (IVE)		0.0342 [0.155]	0.245 [0.179]		2.459*** [0.187]	2.454*** [0.210]
Father completed transition 1 × IVE			−0.842** [0.386]			0.0212 [0.460]
Constant	0.351*** [0.0982]	0.349*** [0.0989]	0.345*** [0.0988]	−1.721*** [0.0478]	−1.406*** [0.0534]	−1.406*** [0.0549]
Observations	19,204	19,204	19,204	27,382	27,382	27,382
Pseudo R-squared	0.199	0.199	0.200	0.168	0.172	0.172
Log likelihood	−2,439	−2,439	−2,437	−15,744	−15,661	−15,661

Robust standard errors in brackets. Transition 1: USA: high school completion; Netherlands: completion of upper secondary school.

** $p < 0.05$.

*** $p < 0.01$.

Table 2
Logistic regression of enrolling in at least some post-secondary education, given high-school completion.

	United States			Netherlands		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Female	−0.366*** [0.0331]	−0.366*** [0.0331]	−0.366*** [0.0331]	−0.457*** [0.0352]	−0.458*** [0.0352]	−0.457*** [0.0352]
Father's social class (relative to unskilled working class)						
Skilled working class and routine non-manual lower grade	0.224*** [0.0435]	0.225*** [0.0435]	0.225*** [0.0435]	0.534*** [0.0928]	0.535*** [0.0931]	0.535*** [0.0931]
Technicians and foremen	0.359*** [0.0698]	0.359*** [0.0698]	0.359*** [0.0698]	0.229*** [0.0725]	0.230*** [0.0725]	0.230*** [0.0725]
Routine non-manual higher grade	0.611*** [0.0629]	0.611*** [0.0629]	0.611*** [0.0629]	0.347*** [0.0688]	0.349*** [0.0689]	0.348*** [0.0689]
Lower service class II	0.910*** [0.0800]	0.911*** [0.0800]	0.911*** [0.0800]	0.636*** [0.0572]	0.635*** [0.0572]	0.635*** [0.0572]
Higher service class I	0.977*** [0.0510]	0.977*** [0.0510]	0.977*** [0.0511]	0.762*** [0.0602]	0.766*** [0.0602]	0.765*** [0.0602]
Father's educational attainment (years)	0.187*** [0.00875]	0.187*** [0.00876]	0.187*** [0.00877]	0.0828*** [0.00810]	0.0840*** [0.00812]	0.0838*** [0.00812]
Father completed transition 2	−0.0175*** [0.00671]	−0.0174*** [0.00671]	−0.0174** [0.00728]	0.0167*** [0.00635]	0.0163** [0.00636]	0.0120 [0.00830]
Intergenerational value of education ratio (IVE)		0.116 [0.158]	0.118 [0.194]		−0.776*** [0.192]	−0.926*** [0.267]
Father completed transition 2 × IVE			0.000586 [0.0349]			−0.0324 [0.0403]
Constant	−1.972*** [0.110]	−1.964*** [0.110]	−1.963*** [0.111]	−1.220*** [0.117]	−1.344*** [0.121]	−1.361*** [0.123]
Observations	18,492	18,492	18,492	14,633	14,633	14,633
Pseudo R-squared	0.136	0.136	0.136	0.0660	0.0668	0.0668
Log likelihood	−10,888	−10,888	−10,888	−9,465	−9,456	−9,456

Robust standard errors in brackets. Transition 2: USA: some post-secondary; Netherlands: completion of vocational college.

** $p < 0.05$.

*** $p < 0.01$.

Table 3
Logistic regression on completing 4-year university degree, given enrolment in some post-secondary education.

	United States			Netherlands		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Female	−0.314*** [0.0416]	−0.315*** [0.0417]	−0.315*** [0.0417]	−0.635*** [0.0565]	−0.635*** [0.0565]	−0.635*** [0.0565]
Father's social class (relative to unskilled working class)						
Skilled working class and routine non-manual lower grade	0.168*** [0.0631]	0.169*** [0.0631]	0.171*** [0.0631]	0.165 [0.168]	0.165 [0.168]	0.165 [0.168]
Technicians and foremen	0.128 [0.0961]	0.124 [0.0960]	0.125 [0.0961]	−0.0112 [0.140]	−0.0120 [0.140]	−0.0117 [0.140]
Routine non-manual higher grade	0.314*** [0.0799]	0.308*** [0.0801]	0.308*** [0.0801]	0.201 [0.126]	0.200 [0.126]	0.199 [0.126]
Lower service class II	0.411*** [0.0900]	0.413*** [0.0901]	0.414*** [0.0901]	0.278*** [0.106]	0.278*** [0.106]	0.278*** [0.106]
Higher service class I	0.634*** [0.0663]	0.629*** [0.0663]	0.630*** [0.0664]	0.581*** [0.107]	0.581*** [0.107]	0.581*** [0.107]
Father's educational attainment (years)	0.0829*** [0.00630]	0.0851*** [0.00635]	0.0846*** [0.00635]	0.0734*** [0.00855]	0.0734*** [0.00855]	0.0734*** [0.00855]
Father completed transition 3	0.0305*** [0.00459]	0.0303*** [0.00459]	0.0393*** [0.00808]	0.0295*** [0.00736]	0.0296*** [0.00737]	0.0335** [0.0130]
Intergenerational value of education ratio (IVE)		−1.341*** [0.336]	−1.002** [0.418]		0.0944 [0.245]	0.132 [0.267]
Father completed transition 3 × IVE			0.0968 [0.0718]			0.0246 [0.0671]
Constant	−0.563*** [0.0810]	−0.712*** [0.0895]	−0.676*** [0.0932]	−1.814*** [0.112]	−1.798*** [0.120]	−1.791*** [0.121]
Observations	10,658	10,658	10,658	7,054	7,054	7,054
Pseudo R-squared	0.0537	0.0548	0.0549	0.0406	0.0406	0.0406
Log likelihood	−6,685	−6,677	−6,677	−4,148	−4,148	−4,148

Robust standard errors in brackets. Transition 3: USA: 4-year college; Netherlands: University degree.

** $p < 0.05$.

*** $p < 0.01$.

tantly, father's education has the expected non-linear effect on children's probability to make the transition into a 4-year university degree; if fathers have completed this transition themselves, their children have a higher likelihood of completing a university degree. This effect comes on top of the linear effect of father's years of education, in both countries.

Model 2 shows that the IVE ratio has the expected negative effect on transition probabilities in the United States, although the effect is similar between social origins (model 3). In the United States, therefore, the choice to enrol in a full 4-year university programme rather than a 2-year college is dependent on the relative value of education in ways similar to what can be expected on the positional goods hypothesis. Enrolment in 4-year programmes becomes more likely if that level of education has lost value across generations. Given the non-significant interaction it is not the case that this positional behavior depends on whether the father has also completed the transition into university. Therefore, the information differentials hypothesis is rejected for this transition. In the Netherlands there is no effect of the IVE ratio, hence both hypotheses are rejected.

8.4. Differences between countries

When we carefully inspect the differences between the countries, we see that the positional goods hypothesis is more strongly supported in the United States than in the Netherlands for the transition into upper secondary school completion and into 4-year university programmes. In the Netherlands, however, the hypothesis is more strongly supported for the preceding transition into some form of tertiary education. Hence, the evidence for a stronger positional character of educational decision making in the United States is not without dispute; it depends on the transition that we study.

If we look more closely at the transition into full university degrees in the two countries, the positional character of American decision making is in line with our argument. Given the conditional nature of our analysis, the alternative for enrolling into 4-year programmes is to leave school after some college but before the 4-year degree. This means that American students have to choose between two types of education (effectively 2-year or 4-year college) that are both far less vocationally oriented than the Dutch vocational colleges. This choice is likely to depend strongly on the relative value of qualifications. It appears that this choice is highly positional in the United States.

In the Netherlands, however, the alternative to a 4-year university programme is the completion of a vocational college degree—a respectable form of higher education with usually a stronger vocational orientation than the 2-year college programmes in the United States. Choosing among these alternatives is less likely based on the relative value of qualifications, as it is not quite evident that university degrees always outperform vocational college degrees in the Netherlands. Wolbers (2000) has, for example, shown that vocational college graduates had a lower chance of unemployment, and a higher chance of employment, than university graduates. In other words, the labor market value of vocational college may be so high that people are not attracted to a university degree even if education has lost value. And this cross-national variation in the labor market mechanism was the basis for our argument on the limited positional nature of Dutch educational decision making.

Looking in more detail into the second transition, into some form of tertiary education given high school completion, here too the findings are in line of the argument.⁶ Even though we demonstrated that enrolling into some form of tertiary education was more strongly in line with the positional argument in the Netherlands than in the United States, in many cases these decisions refer to students being more likely to enroll into tertiary vocational colleges (the majority of tertiary education in the Netherlands, see Fig. 1) when its value decreases. The alternative would be to leave school with a general upper secondary education, clearly a bad option if education loses value, or with a secondary vocational qualification. It may be that, despite a strong labor market signalling function of secondary vocational education, credential inflation also leads students to obtain more education within the vocational streams. In times of educational expansion, it is likely that more education is needed for similar occupations; partly because of changing (mis)matches between educational supply and occupational demand (i.e. overschooling and credential inflation), and partly because jobs themselves have become more complex (Gallie, Michael, Yuan, & Mark, 1998; Van de Werfhorst, 2007). This could lead to the fact that children need more (vocational) education than their parents even if the system mainly indicates productive skills.

⁶ Moreover, looking in detail into the precise educational choices being dependent on the relative position (or not) in the two countries illustrates that the vocational sector stands stronger in explaining cross-national variation than other potential explanations for a more strongly positional nature of schooling in the United States, such as higher technological advancement.

9. Summary and conclusions

In this paper we analyzed the trend in the effect of education on social class attainment, and used this information to test hypotheses on the impact of credential inflation on educational decision making in the Netherlands and the United States. It was shown that, with few exceptions, the completion of three educational transitions became less influential for class attainment across birth cohorts between the 1880s and 1980s. Across two generations each transition has lost value, except for high school completion in the USA, which got a stronger effect on class attainment in the 1930s and 1940s birth cohorts.

How has this credential inflation affected educational decision making? Our hypothesis was that a decreasing labor market value of having completed a particular transition between two generations would lead to a higher likelihood to make that transition. We found evidence for this hypothesis for the transition into some tertiary education in the Netherlands, and the transition into full 4-year university degrees in the United States. For the transition into high school completion we found evidence supporting this hypothesis in the United States only if parents made the transition. For the Netherlands, on the contrary, children were more likely to enrol in this transition when its labor market value increases (which is in line with standard human capital theory).

The mechanism underlying our general hypothesis is that education functions as a positional good, and if education loses value people need more of it in order to reach the same social class as their parents. This would particularly be true for the USA, because the educational system is generic and unidimensional. Such a system increases the positional good functioning of schooling. This is contrary to the skills-producing human capital function of schooling, which is assumed to be particularly strong in the Netherlands with its strong vocational sector. With regard to the transition into upper secondary school completion we found support for the varying role of education on the labor market in these two countries. Both with regard to high school completion and full university degrees it is true that American students invest more on the basis of the positional value than Dutch students. However, the transition into some post-secondary education was more positional in the Netherlands, which indicates that educational decision making in the Netherlands is also partly based on the relative, rather than only the absolute value (cf. Ultee, 1980). Within higher education the alternative to university degrees in the Netherlands is a vocational college (HBO); a valuable resource on the labor market thanks to its strong voca-

tional orientation. In the United States the alternative is to enrol into a 2-year college, which decision is more likely to depend on the relative (rather than absolute) value of qualifications.

Although having a father who completed the transition increased the likelihood of making that transition in most cases, pointing to a non-linear effect of father's education (Mare & Chang, 2006), there was only weak evidence for the hypothesis that the value of education would particularly affect children whose father had completed the transition under study. Only for the transition into high school completion we found support for this hypothesis in the United States. We expected more support for this information differentials hypothesis for later transitions. Apparently the relative value of qualifications also affects children's decision making if parents have dropped out of school before that stage. This could be because, if education loses value, children need more education than their parents, and are hence affected by credential inflation beyond the level of schooling that parents attained. In any case, the impact of an intergenerational loss of the value of schooling on the labor market affects a broad spectrum of educational decision makers.

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