



Sticky educational expectations: A cross-country comparison

Fabrizio Bernardi^a, Manuel T. Valdés^{b,*}

^a Department of Political and Social Sciences, European University Institute (EUI), Via dei Roccettini 9, Fiesole, 50014, Italy

^b Department of Applied Sociology, Complutense University of Madrid (UCM), Campus de Somosaguas, Pozuelo, 28223, Spain

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ABSTRACT

This work studies the cross-country variability in the interaction effect between academic achievement and social origin on the configuration of the expectation of enrolment in the academic track of upper secondary education. Drawing on the Relative Risk Aversion Theory and the Compensatory Advantage model, we anticipate that academic achievement and social origin interact so that high-SES students' expectations are irresponsive to low academic achievement. We call this phenomenon "stickiness in expectations". However, we expect to observe sticky educational expectations of high-SES students particularly in those countries where the transition into the academic track of upper secondary education is consequential for their social status maintenance. To test this hypothesis, we use 2018 PISA data for 11 OECD countries and carry out a two-stage regression analysis. We estimate stickiness in expectations for each country using a counterfactual decomposition method. We then regress the country-specific estimate of stickiness in educational expectations on macro-level indicators of the risk of downward mobility associated with non-enrolment in the academic track and the economic capacity to compensate for low achievement in each country. We find sticky educational expectations in 6 of the 11 countries studied and show that stickiness is larger in those countries where not enrolling the academic track in Upper Secondary Education entails a larger risk of social status demotion for high-SES students.

1. Introduction

Educational expectations have been of interest for sociologists studying social mobility and inequality in educational attainment for decades (Morgan, 1998, 2002; Sewell, Haller, & Portes, 1969; Sewell, Haller, & Ohlendorf, 1970). Many different studies have documented that students' expectations are sensitive to prior academic performance (Bozick, Alexander, Entwistle, Dauber, & Kerr, 2010; Goldenberg, Galimore, Reese, & Garnier, 2001; Jacob & Wilder, 2011; Karlson, 2019), although sometimes only moderately (Andrew & Hauser, 2011; Carolan, 2017). Relatively less is known, however, on whether performance plays the same role in the formation of expectations for high and low-SES students. Some recent studies suggest that educational expectations of high-SES students are more inelastic and remain high even in spite of bad school results (Karlson, 2019; Obermeier & Schneider, 2015). In the following, we refer to the inelasticity of expectations to prior bad school performance as 'stickiness in expectations'. The departure point of this article is that, while there are a number of cross-country studies on inequality in educational expectations and their determinants (see next section), a systematic comparative study on the heterogeneity by SES in

how expectations respond to school performance (i.e. on the stickiness of educational expectations) is still lacking.

Given this gap in the literature, in this article we examine the relationship between academic achievement and educational expectations of enrolment in the Academic Track of Upper Secondary Education (ATUSE) of 15-years-old students in 11 OECD countries participating in the 2018 wave of the PISA study. More precisely, we investigate whether there are country differences in the level of stickiness in educational expectations of high-SES students and how cross-country differences can be accounted for. Theoretically, we explain the stickiness in expectations referring to Relative Risk Aversion (RRA) and the Compensatory Advantage (CA) Model. We hypothesise that the stickiness in high-SES students' expectations will be larger in those countries where not enrolling in the academic track in upper secondary education entails a larger risk of downward mobility, where inequalities in resources between classes are larger and where the tuition costs for higher education are greater.

Our empirical analysis consists of a two-stage regression. First, we use the 2018 PISA data to measure the level of stickiness in high-SES students' expectations of ATUSE in each country. To do that, we

* Corresponding author.

E-mail addresses: Fabrizio.Bernardi@eui.eu (F. Bernardi), manueltv@ucm.es (M.T. Valdés).

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employ a counterfactual decomposition method proposed in Bernardi and Triventi (2020) that builds on Erikson, Goldthorpe, Jackson, Yaish, and Cox (2005). Second, we regress the first-stage estimates of stickiness in expectations for each country on various macro indicators for the risk of downward mobility associated with not enrolling in ATUSE, the level of inequality in economic resources across SES groups and the cost of higher education in each country. Our findings are in line with the hypotheses drawn from the compensatory advantage model and indicate that high-SES students are more likely to disregard prior bad performance when forming their expectations in those countries where not enrolling in ATUSE entails a higher risk of social demotion. In turn, we do not find any association between the differences in the level of stickiness in expectations and the level of economic inequality and costs of tertiary education.

The structure of the paper is the following. In the next section, we review previous studies on inequality in educational expectations and compensatory advantage in realized educational transitions, and highlight findings that suggest that the level of stickiness of high-SES students' expectations might vary across countries. In the theory section, we formulate two hypotheses derived from the RRA and CA model concerning the cross-country variation in the heterogeneity by SES in the relationship between test scores and expectations. We then describe the data, variables and methods used in the empirical analyses, whose results we present in the following section. In the conclusions, we discuss possible biases in our estimates due to reverse causality and endogeneity of prior school results to student expectations. Based on our findings, we also sketch a more general theory on the heterogeneity in how educational expectations and transitions respond to previous school performance by social origins, beyond the specific case of educational expectations concerning ATUSE.

2. Literature review

A number of prior comparative works have documented a systematic effect of social origin on the configuration of educational expectations across countries so that high-SES students hold higher expectations than low-SES students (Buchmann & Dalton, 2002; Buchmann & Park, 2009; Jerrim, 2014). It has been observed that such effect is substantial both in Western and post-socialist countries (Bodovski, Kotok, & Henck, 2014), but smaller in East-Asian societies (Li & Xie, 2020). It has also been reported that inequality in expectations is larger in countries with a higher degree of educational stratification (Buchmann & Park, 2009; Lee, 2014; Parker, Jerrim, Schoon, & Marsh, 2016) and systematically larger the younger the student is (Li & Xie, 2020) and among boys (Ortiz-Gervasi, 2020). Furthermore, such inequalities have proven sensitive to the economic cycle and increase during periods of economic contraction (Salazar, Cebolla-Boado, & Radl, 2019).

However, few comparative studies have also incorporated academic performance into the analysis. Jerrim (2014) used PISA 2003 and TIMSS 2007 to study whether misalignment between expectations and attainment was particularly high in the USA compared to several OECD countries. By comparing inequality by social origin in expectations and performance, the author observed that there was a relatively higher proportion of low-achieving low-SES students expecting to enrol in college in the USA. Using TIMSS, Bodovski et al. (2014) analysed educational expectations in a sample of post-socialist and Western countries considering both social origin and performance as predictors. Nevertheless, neither of those studies considered whether performance mediates the effect of social origin on expectations nor interacted social origin and academic performance.

To the best of our knowledge, only one international comparison has considered to what extent academic performance mediates the relationship between social origin and expectations in different countries. Parker et al. (2016) used PISA 2003 and observed that the indirect effect of social origin via academic performance on expectations (the so-called primary effect of social origin) was larger in countries with a higher

degree of educational stratification. The authors, however, did not consider that social origin and academic performance might interact in the configuration of educational expectations and that this interaction might also vary across countries. In a recent study on the USA, Karlsson (2019) observed that changes in academic performance between two consecutive academic years are causally associated with changes in academic expectations. Moreover, he also showed that social origin and academic performance interact in the formation of educational expectations. While the effect of academic performance on expectations is substantial among low-SES students, it is highly reduced for low-performing high-SES students. A similar result is also found concerning the expectation to enrol in the university in Germany (Obermeier & Schneider, 2015). We are not aware, however, of any prior comparative study that has investigated how social origin and academic performance interact in the formation of educational expectations.

At the same time, several recent studies have shown that prior academic performance is less decisive in explaining the outcome of key educational transitions for high-SES students. In several countries, there is evidence suggesting that if high-SES students perform poorly in compulsory education, their likelihood of continuing in education and enrolling in the most academic-oriented track is disproportionately higher than for equally underperforming low-SES students (Bernardi & Triventi, 2020; Erola & Kilpi-Jakonen, 2017; Herbaut, 2020; Holm, Hjorth-Trolle, & Meier Jæger, 2019; Troiano, Torrents, & Daza, 2019).

The inelasticity of high-SES students' decisions to bad previous educational performance has been interpreted as a special instance of the Compensatory Advantage (CA) model (Holm et al., 2019). In general, the CA model predicts that life-course trajectories of those coming from privileged backgrounds are less dependent on prior negative outcomes (Bernardi, 2014). In the specific case of poor academic performance, the CA model anticipates that the effect of social origin is larger at the bottom of the performance distribution (Grätz & Wiborg, 2020), and for the analysis of educational transitions, the model predicts that the decisions of high-SES students are less responsive to bad educational results (Bernardi & Triventi, 2020).

There are, however, other studies showing larger social origins inequalities in educational transitions in the middle of the performance distribution – e.g. the transition to A-levels in the UK (Jackson, Erikson, Goldthorpe, & Yaish, 2007) – or among top performers – e.g. the transition to university education in Finland (Heiskala, Erola, & Kilpi-Jakonen, 2020) or the access to *grandes écoles* in France (Herbaut, 2019). Since educational expectations are closely linked to the outcome of educational transitions (Park, 2021; Wu & Bai, 2015), based on the findings that patterns of CA in educational transitions are found in some countries and for some educational transitions but not for others, there are good reasons to expect that the level of stickiness in the educational expectations of high-SES students will also vary across countries.

3. Compensatory Advantage model and educational expectations

The theoretical bases of the CA model rest on the *motivation* of high-SES families to compensate for negative outcomes that might jeopardize their children's educational attainment and social mobility chances and their *capacity* to do so.

Concerning motivations, the CA model shares the same core assumption that has guided the sociological research on social mobility and educational inequality in the last five decades (Blossfeld & Shavit, 1993; Breen & Müller, 2020; Erikson & Goldthorpe, 1992; Erikson & Jonsson, 1996) inspired by the seminal work by Boudon (1974). This assumption, usually labelled as 'social demotion avoidance', is that parents' intergenerational mobility strategies and, in particular, choices concerning educational transitions, are driven by the primary goal to avoid that their children experience downward social mobility (Breen & Goldthorpe, 1997). Based on prospect theory, this assumption also posits that the motivation to avoid social demotion (i.e. a loss) is

stronger compared to the motivation to pursue upward social mobility (i.e. a gain). From this assumption, it follows that the motivation to achieve the same level of education might differ for high and low-SES students. If not achieving a given level of education entails a risk of downward mobility for high-SES students while it offers a possibility of upward mobility for low-SES students, the motivation to achieve that level of education is stronger for the former because, as maintained by prospect theory, losses resonate more than gains. Several studies have offered compelling evidence in favour of this argument (Barone, Triventi, & Assirelli, 2018; Breen, van de Werfhorst, & Jäger, 2014; Holm & Meier Jäger, 2005; van de Werfhorst & Andersen, 2005).

In the specific case of bad previous educational results, high-SES students will maintain higher educational expectations because educational attainment is a crucial condition to avoid downward mobility. As formally demonstrated by Lucas (2009), a corollary of the social demotion avoidance assumption built in a model of rational choices to explain educational inequality (Breen & Goldthorpe, 1997) is that it is always rational for high-SES students to pursue higher education, even despite the low probability of success indicated by previous bad school performance. Similarly, Holm et al. (2019) and Karlson (2019) show that high-SES students' expectations and decisions respond less to the signal that previous school results provide in terms of the probability of future educational success compared to low-SES students. In brief, prior performance is a worse predictor of the educational expectations and decisions of high-SES students compared to their low-SES counterparts.

The capacity part of the explanation is inherent to the existence of class inequality – thus, almost trivial – and to the fact that high-SES parents possess more economic, cultural, and social resources that can be actively used to provide support to their children and correct for their negative outcomes. In the case of prior bad school results, high-SES families can maintain high expectations and encourage their sons and daughters to pursue higher education and enrol in the academic track even in spite of prior bad school results because they can pay for private tutoring, use their networks to gather relevant information on the functioning of the educational system, employ their social skills to contact and deal with teachers and school managers or move their children to less demanding private schools in case they face too many difficulties. Different studies have accounted for the implementation of these strategies for compensatory purposes (Bernardi & Grätz, 2015; Huang, 2020).

In sum, CA is a general mechanism of inequality reproduction that is fuelled by class differences in motivation and class inequality in resources. High-SES families and students have a stronger motivation to maintain high educational expectations even if their previous academic results would suggest differently, and also more resources to guarantee a safety net later on if the choice to pursue further education would prove problematic.

Since differences in motivation represent an inner logic of class reproduction and differences in resources are inherent to the existence itself of the class structure in advanced market economies, one would anticipate stickiness in high-SES students' expectations in all countries. However, the observation of the pattern of CA for actual educational transitions in some countries but not in others suggests differently. We argue that a key factor to account for the difference in the relevance of CA and, for the purpose of this paper, in the level of stickiness of high-SES students' expectations across countries is the risk of downward social mobility associated with the outcome of the educational transition under consideration. We qualify an educational transition as *high-stakes* when there is a high risk of downward mobility for high-SES students if they fail to complete it. The opposite is true for *low-stakes* educational transitions, which entails a lower risk of downward mobility because the final educational and occupational attainments are not strongly determined by their outcome. The key point here is that the transition into the academic track in upper secondary education can be high-stakes in one country and low-stakes in another. We only expect to find stickiness in those countries where that transition is high-stakes. More precisely, we

formulate the following hypothesis:

Hypothesis 1. The stickiness in high-SES students' expectations of ATUSE will be larger, the larger the risk of downward mobility for high-SES families in case of not attending that track.

Moreover, cross-country differences in the stickiness of expectations might be the result of differences in the capacity to compensate across social classes in each country. What seems relevant in this respect is the inequality in access to resources that can be used to compensate in case the expectations turn out to be too ambitious. If in a certain country all socioeconomic groups have similar access to the necessary resources to keep high expectations despite poor academic performance, we will not observe the pattern of sticky expectations for high-SES students. Therefore, we also hypothesize that:

Hypothesis 2a. The stickiness in high-SES students' expectations of ATUSE will be larger, the larger the inequality in resources between socio-economic groups in a given country.

Additionally, the capacity to compensate might also depend on the economic cost of higher education. The higher the costs, the riskier the decision to enrol in higher education for low-achievers. If the costs for tertiary education are higher, then only high-SES students might have the financial resources necessary to keep ambitious expectations in spite of poor academic performance. Therefore, we also hypothesize that:

Hypothesis 2b. The stickiness in high-SES students' expectations of ATUSE will be larger, the larger the economic resources required to complete tertiary education.

4. Data and methods

4.1. Data

To test those hypotheses, we use the OECD 2018 PISA data. In addition to being tested in the domains of reading, maths, and science, participants in PISA were also asked about their educational expectations in detail. However, many countries have already sorted out students into different tracks when the assessment takes place at age 15. Considering countries that track students before age 15 hinders cross-country comparability because educational expectations are highly conditioned by the educational track that is attended (Buchmann & Park, 2009; Karlson, 2015; Lorenz, Boda, Salikutluk, & Jansen, 2020; Smyth, 2020). Therefore, we limit our study to those OECD countries where (1) most of the students attend an undifferentiated generally-oriented curriculum up to the year they turn 16 and (2) the subsequent upper secondary education is divided into at least two tracks, one academic aimed at enrolling in university and one (or more) vocational tracks. In this way, we are able to isolate the interplay between academic performance and social background in shaping educational expectations before tracking takes place.

Only 14 of the 36 OECD countries in 2018 satisfy these criteria: Australia, Chile, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Poland, Norway, Spain, Sweden, and the UK. However, we could not include Poland, Finland, and the UK in the analysis due to different limitations in the national questionnaires on educational expectations. An explanation of these problems and a brief description of the 11 educational systems included in our study are provided in Appendix A.

Overall, we have an analytic sample of 99,145 15-year-old students who had not been previously selected into separated tracks and who had imminently to decide between academic education, vocational education or leaving the educational system. To appropriately handle non-response and the sampling design, our estimates are weighted using the factors provided by the OECD (final student weights) and standard errors are clustered at school level (Jerrim, Lopez-Agudo, Marcenaro-Gutierrez, & Shure, 2017).

A critical limitation of PISA data for the purpose of this article is that students are not informed of their results in the test and express their educational expectations at the same time they are assessed. Different studies have, however, observed a strong association between performance in cognitive tests at time *t* and previous academic grades at time *t*-1 that are known to students and can then influence their educational expectations at time *t*. For a review of these works, see Roth et al. (2015), and for specific examples about PISA, see Harju-Luukkainen, Vettenranta, Ouakrim-Soivio, and Bernelius (2016) and the UK Department of Education (2017). PISA scores can be then considered a valid indicator of academic achievement at age 15 that is known to the students.

4.2. Individual-level variables

4.2.1. Expectation of transition into the academic track in upper secondary education

Participants in PISA 2018 were asked separately about their expectation of completing six different educational alternatives: ISCED 2 (basic compulsory education), ISCED 3A (the academic track in upper secondary education), ISCED 3BC (the vocational track in upper secondary education), ISCED 4 (post-compulsory non-tertiary education), ISCED 5A (bachelor's degree in tertiary education) and ISCED 5B (short-cycle/higher vocational education in tertiary education). Our dependent variable takes value 1 if the student marked ISCED 3A and 0 if the student marked ISCED 3BC or neither option. However, some students indicated that they expected to complete both ISCED 3A and ISCED 3BC (9.3 % of the whole sample). We consider these cases as uncertain/miss-reported expectations. On top of that, some students did not mark any option in upper secondary education but indicated that they expected to attain an academic or vocational degree at the tertiary level (15.3 % of the whole sample). In those cases, if the expectation concerning tertiary education was unique (either academic or vocational), we impute it to the upper secondary education expectation. In turn, if the expectations concerning tertiary education were not unique (both academic and vocational were checked) and the information concerning secondary education was missing, we again consider these cases as uncertain/miss-reported expectations.

In the main analyses that we present below, we drop the cases with uncertain/miss-reported expectations (11.5 % of the whole sample). We have performed several sensitivity analyses based on the different handling of uncertain/missing reported expectations that show that our main results are robust. We describe these sensitivity analyses in detail in the robustness checks section.

4.2.2. Social origin

To assess the effect of social background on educational expectations, we use the Index of Economic, Social and Cultural Status (ESCS), a composite measure constructed by the OECD based on both parents' educational level and occupational status and several indicators of cultural and economic wealth in the household. We standardize the index within each country (mean of 0 and a standard deviation of 1). For most of the subsequent analyses, we distinguish three socioeconomic groups that correspond to the terciles of the ESCS distribution in each country.

4.2.3. Academic achievement

We average the PISA scores in reading, maths, and science to obtain a combined measure of academic achievement for each student¹. This continuous indicator is standardized within each country (mean 0 and standard deviation of 1). For most of the subsequent analyses, we

¹ We have considered the first plausible score in each of the three domains. Spanish reading results were considered by the OECD as unreliable, so we have not employed them in the analysis. For Spain, academic achievement refers exclusively to the mean of maths and science test scores.

distinguish students below and above the median in each country. As a robustness check, we replicate the analysis by dividing the sample into three groups corresponding to the terciles of the academic achievement distribution in each country.

As control variables we consider gender (males-1, females-0) and immigrant background, distinguishing first-generation immigrants (born out of the country of the test), second-generation immigrants (born in the country of the test, but both parents born abroad), and natives (born in the country of the test, with at least one parent also born in the country of the test).

4.3. Country-level variables

We employ three indicators to assess whether the transition to ATUSE is high or low-stakes for the risk of downward mobility in each country.

4.3.1. Access to university from the vocational track in upper secondary education

The indicator takes value 1 if university can be accessed after completing the vocational track in Upper secondary education – either by coursing an additional year of instruction or choosing a vocational track combined with general education – and 0 otherwise². The indicator captures how reversible is the decision to not enrol ATUSE. If accessing university from the vocational track is possible, the risk of social demotion in case of not enrolling in ATUSE will be lower and the urge to enrol in the academic track when the academic achievement is low will be weaker.

4.3.2. Rate of enrolment in ATUSE

We consider the share of the population that is enrolled in the academic track among upper-secondary-education age groups in each country. This indicator captures the level of selectivity of the transition to ATUSE. In those countries where the transition is not selective and the large majority of the youngsters chooses this form of education, high-SES families will feel more pressured to avoid the residual educational alternatives.

4.3.3. Percentage of high-ESCS families without university education

The indicator captures the percentage of families in the top tercile of the ESCS index in which neither parent completed university education. It indicates how endangered will be the social position of the student in case of not completing university education. In those countries where it is more feasible to reach the top of the social scale without university education, the motivation to compensate for low ability will be lower.

Two more indicators are employed to assess the differences across countries in the inequality in resources across socio-economic groups.

4.3.4. Gini index

The indicator captures the distribution of income in each country, where value 0 indicates perfect equality and value 1 perfect inequality. Higher values indicate larger differences in the capacity to compensate for a possible future educational failure among those socioeconomically advantaged in each country.

4.3.5. Income ratio (top 10 % / bottom 10 %)

The indicator is calculated as the proportion that the wealth accumulated by the wealthiest 10 % represents over the wealth of the poorer 10 %. A higher ratio indicates a higher degree of income inequality in

² Ireland distinguishes three tracks: academic, vocational, and applied. Irish participants in PISA were questioned about their expectations distinguishing the first two tracks (which allows access to university) from the third one (which does not). As applied education is disconnected from university, we set Ireland to 0.

the country.

Finally, two additional macro indicators refer to the costs associated to pursuing higher education.

4.3.6. Percentage of the total expenditure in Tertiary Education that comes from households

The indicator captures how much families pay of the total expenditure in higher education in each country. The larger the cost of tertiary education for families, the riskier the decision to enrol when performance is low.

4.3.7. Tuition fees for a bachelor's degree

The indicator shows how much do families pay annually for enrolment in a bachelor's degree in each country (measured in USD PPP, purchasing power parity). Unfortunately, we only count with information for eight of the eleven countries in the study, so the results for this macro indicator will be reported in a final note.

4.4. Method

We perform a two-stage regression analysis (Lewis & Linzer, 2005)³. In the first stage, we estimate the stickiness in high-SES students' expectations in each country via a decomposition analysis. Then, we regress the estimates of the first stage on various macro indicators at the country level.

4.4.1. The level and relevance of sticky expectations: a decomposition

We start regressing the expectation of enrolment in ATUSE on social origin, academic achievement, and their interaction, adding gender and migrant background as controls. We use logit models and carry out the analyses separately for each country. The stickiness in expectations is captured by the interaction effect between social origin and academic achievement.

To quantify the stickiness in expectations, we employ a decomposition method that simulates a counterfactual scenario where high-SES students' expectations are elastic and respond to academic achievement in the same way as low-SES students' expectations. Formally, let INE^0 be the inequality observed in the expectation of ATUSE between low and high-SES students and P_L and P_H the probabilities of holding that expectation for low and high-SES students (first and third terciles of the ESCS index), so:

$$INE^0 = P_H - P_L \quad (1)$$

Students may obtain bad (B) or good (G) results in PISA (below and above the median of performance in the country). Let P_{HB} and P_{HG} denote the probability of expecting to enrol in ATUSE for high-SES students with bad and good results, and P_{LB} and P_{LG} denote the probability of expecting to enrol in ATUSE for low-SES students with bad and good results.

Furthermore, each socioeconomic group presents a different distribution of achievement. Let I_{HB} and I_{HG} denote the proportion of high-SES students with bad and good results ($I_{HB} + I_{HG} = 1$), and I_{LB} and I_{LG} denote the proportion of low-SES students with bad and good results ($I_{LB} + I_{LG} = 1$). Ultimately, we can express the probability of expecting to enrol in ATUSE for each socioeconomic group as the weighted sum of the probabilities at each level of achievement, with weights equal to the proportion of students at each level of achievement:

$$P_H = (P_{HB} \times I_{HB}) + (P_{HG} \times I_{HG}) \quad (2)$$

$$P_L = (P_{LB} \times I_{LB}) + (P_{LG} \times I_{LG}) \quad (3)$$

Therefore, substituting the terms of Eq. (1) with those of Eqs. (2) and

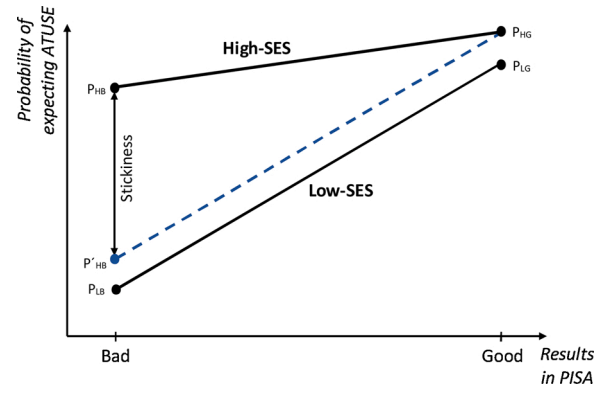


Fig. 1. Simulated scenario for the calculation of the stickiness of expectations and its relevance.

Source: Bernardi and Triventi (2020).

(3), we get:

$$INE^0 = [(P_{HB} \times I_{HB}) + (P_{HG} \times I_{HG})] - [(P_{LB} \times I_{LB}) + (P_{LG} \times I_{LG})] \quad (4)$$

The idea in Bernardi and Triventi (2020) is to simulate a scenario where the expectations of high SES students are not sticky. Fig. 1 helps in illustrating this idea.

The solid lines describing the relationship between academic achievement and the expectation of ATUSE for high and low-SES students portray a situation with sticky expectations for high-SES students. Conversely, the dotted line for high-SES students depicts a situation of non-sticky expectations as the curves for high and low-SES students are parallel. One can further assume that high-SES students hold higher expectations in general. Following Bernardi and Triventi (2020), we take the difference in expectations among students with good results as a measure of the constant advantage of high-SES students. We can then define the probability of expecting ATUSE for high-SES students with bad results, P'_{HB} , in a scenario of non-sticky expectations as P_{LB} plus the constant difference that we observe between high and low-SES students at the top of the ability distribution. Formally:

$$P'_{HB} = P_{LB} + (P_{HG} - P_{LG}) \quad (5)$$

Ultimately, the stickiness of high-SES students' expectations is captured by the difference between the observed and simulated high-SES student's expectation of ATUSE at low levels of academic achievement. Formally:

$$Stickiness = P_{HB} - P'_{HB} \quad (6)$$

Nonetheless, one should note that, even if all high-SES families maintain high expectations in spite of low academic achievement, we could observe that the stickiness of high-SES students' expectations contributes only marginally to explain inequality in expectations if just a minority of high-SES students performs poorly. To estimate how much the inelasticity in high-SES students' expectations contributes to the observed inequality in expectations between low and high-SES students, we substitute P'_{HB} in Eq. (4):

$$INE^S = [(P_{LB} + (P_{HG} - P_{LG})) \times I_{HB}] + (P_{HG} \times I_{HG}) - [(P_{LB} \times I_{LB}) + (P_{LG} \times I_{LG})] \quad (7)$$

This quantity captures the inequality in expectations that we would observe if high-SES students would respond to bad school performance as low-SES students do. The relevance of the stickiness in expectations for the overall inequality in expectations between low and high-SES students is then computed as the percentage that the difference $(INE^0 - INE^S)$ represents over the total inequality, INE^0 :

³ For applications in social mobility research, see Bernardi and Ballarino (2012), Hertel and Groh-Samberg (2019) or Pfeffer (2008).

Table 1

Expectation of enrolment in ATUSE in each country.

	N	% of students expecting ATUSE	Difference between high and low-SES students in the expectation of ATUSE
Australia	12,792	85.5 %	18.9 %
Chile	7504	64.7 %	30.0 %
Denmark	7656	79.1 %	26.4 %
Estonia	5315	69.4 %	26.6 %
Iceland	3296	78.7 %	21.5 %
Ireland	3649	73.4 %	16.0 %
Latvia	5259	44.3 %	19.7 %
Lithuania	6758	68.6 %	35.0 %
Norway	5813	59.1 %	34.5 %
Spain	35,599	71.7 %	31.5 %
Sweden	5504	65.6 %	32.1 %

$$\text{Relevance of stickiness} = \left[\frac{(INE^0 - INE^s)}{INE^0} \right] \times 100 \quad (8)$$

Finally, we use bootstrapping to compute standard errors for the estimates of the decomposition in each country (Efron & Tibshirani, 1993). We obtained our bootstrapped estimates with 1000 replications based on resampling with replacement from the original samples for each country.

4.4.2. Macro-level regression

In the second stage, we regress our estimation of stickiness on the country-level indicators presented in Section 4.3. Formally, our model is:

$$ST_i = a + bX_i + e_i \quad (9)$$

where ST_i is the measure of the stickiness of high-SES students' expectations in country i , measured with Eq. (6) above, and X_i is a country-level indicator. To estimate the parameters in Eq. (9), we use weighted least squares regressions with weights equal to the inverse of the squared standard errors of the measure of stickiness – computed using bootstrap – so that estimates more precisely estimated have a larger weight in each regression (King, 1997). Given the low number of cases ($N = 11$), we assess the sensitivity of our findings with a jackknife regression, i.e. replicating the country-level regression excluding one country at a time (Abdi & Williams, 2010).

5. Results

5.1. The interaction between social origin and academic achievement in each country: stage one

Table 1 shows that the percentage of students that expect to enrol in ATUSE in each country ranges between 44.3 % in Latvia and 85.5 % in Australia. It also documents large differences in the proportion of low and high-SES students (first and third terciles of the ESCS index, respectively) that expect to enrol in ATUSE.

To assess whether such differences are constant across the distribution of academic achievement, in Fig. 2 we report the results of our first-stage regressions for each country. More precisely, Fig. 2 presents the predicted probability of expecting to enrol in ATUSE for different levels of social origin and academic achievement. We observe sticky expectations of high-SES students in 6 of the 11 countries (Ireland, Spain, Australia, Denmark, Iceland, and Chile), with larger SES inequality at the bottom of the achievement distribution. In turn, we found the largest difference between low and high-SES students in the middle of the distribution in Lithuania, Norway, Sweden, and Estonia. Finally, in Latvia inequality peaks at the top of the achievement distribution.

5.2. Stickiness of expectations

We now apply the decomposition method described above to get a value for the stickiness of expectations and its relevance in each country. As the procedure requires working with discrete measures of social origin and achievement, we divide the sample of each country into three socioeconomic groups using the terciles of the ESCS index and two groups of achievement using the median of the distribution. For the sake of brevity, we only present the results of the comparison between the two extreme terciles of the ESCS index.

The results of both our measures of stickiness (left panel) and its relevance (right panel) are shown in Fig. 3. On the one hand, Spain is the country where the stickiness in the expectation of enrolment in ATUSE is stronger. If expectations of high-SES students were not sticky, we would observe a probability of expecting ATUSE for underachieving high-SES Spanish students 0.17 lower. In turn, we observe a negative value of stickiness in Latvia because, as we saw before, inequality in this country peaks at the top of the ability distribution.

The stickiness of expectations, however, does not necessarily translate into a relevant contribution to overall inequality in expectations if the proportion of high-SES students that perform poorly is very low. Moreover, if the proportion of underachieving high-SES students differs across countries, the measure of stickiness and its relevance might not correlate. This is not our case as all countries have a similar proportion of underachieving high-SES students of around one-third (i.e. about 30 % of high-SES students have scores below the national median), and the correlation between our estimates of stickiness and its relevance is 0.94 ($p\text{-value} < 0.000$). As a result, we observe that sticky expectations contribute to inequality in all countries where we observed a certain degree of stickiness. The contribution in those cases is substantial and statistically significant, ranging from one-quarter of total inequality in Ireland (23.8 %) to one-seventh in Denmark (14.3 %).

5.3. Explaining cross-country differences in the stickiness of high-SES students' expectations

The question that emerges is why we observe stickiness in high-SES students' expectations of ATUSE in some countries and not in others. To answer it, we have regressed our measure of stickiness on each country-level indicator one at a time. Results are presented in Fig. 4 and Table 2 shows the R^2 for each model.

Given the low number of cases, the results have to be interpreted with great cautiousness. Among the macro indicators, the one that has the stronger predictive power is whether the vocational track in upper secondary education gives access to university. According to our estimates, the openness of university education to students coming from the vocational track in upper secondary education reduces the stickiness in expectations by 10 percentage points. Moreover, if Denmark is excluded, the estimate of interest increases to 14 percentage points and the R^2 of the model rises from 47 % to 67 %. A possible explanation of this finding is that only recently vocational-education Danish students can access university via the EUX track (see Appendix A). It seems that such reform has not yet altered the pre-reform inertias and the stickiness in expectations of high-SES students is still intense. Furthermore, our results are highly dependent on the Spanish case because stickiness is very high in this country and it is very precisely estimated.

In Fig. 4 we also observe that the stickiness of high-SES students' expectations is larger in those countries where the actual enrolment in ATUSE is higher and the percentage of high-SES families without university education is lower, indicating in both cases that social status maintenance might be threatened if the student does not enrol in ATUSE. All these results are robust to the exclusion of one of the countries considered.

Regarding the inequality in resources between high and low-SES groups, we find no association between the stickiness in high SES students' expectations and the indicators of economic inequality in each

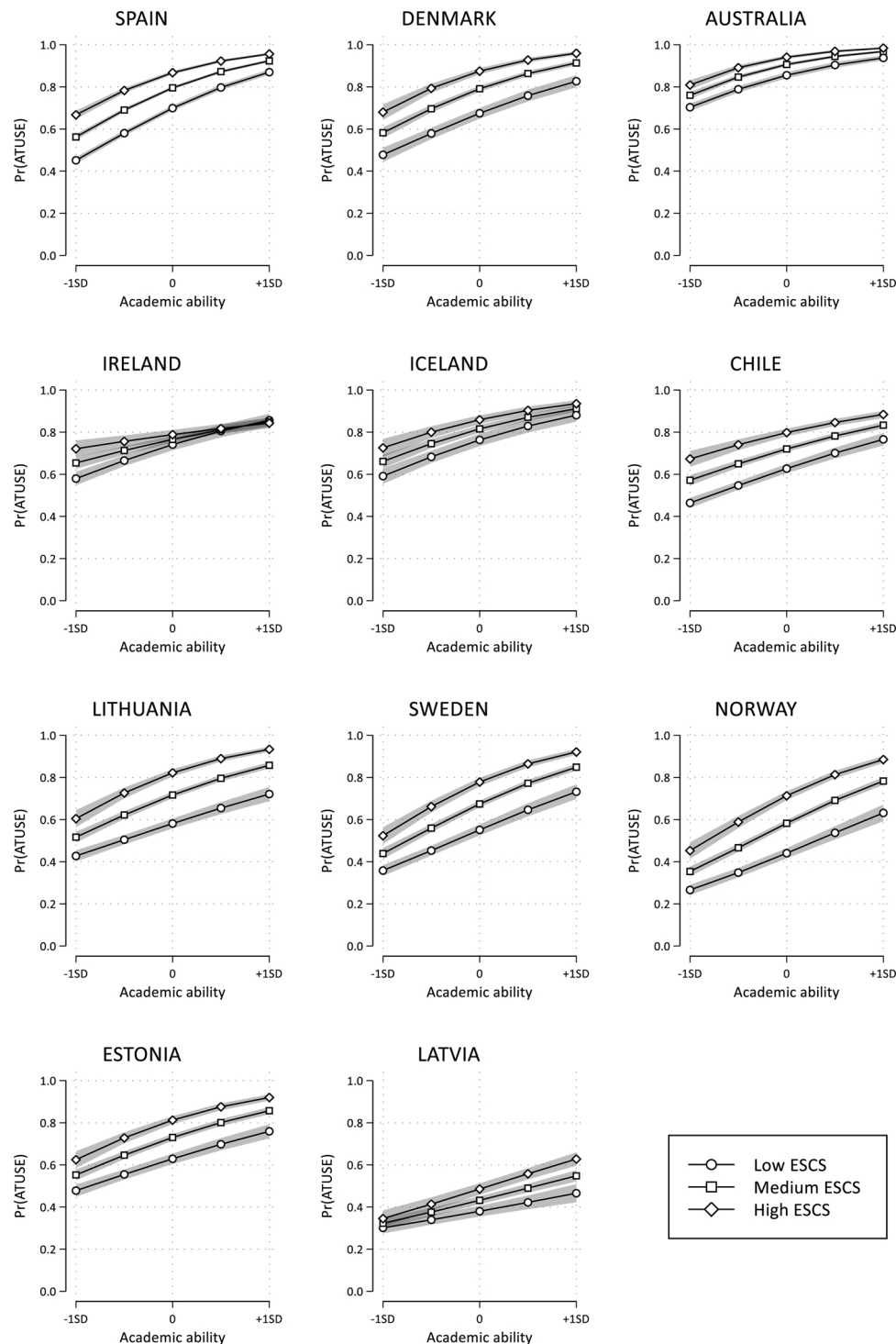


Fig. 2. Predicted probability of expecting to enrol in ATUSE by social origin and academic achievement.
Note: Estimates based on logit models that includes gender and migrant background as controls.

country, neither for the income ratio nor the Gini index. We also do not find any association with the costs of higher education assumed by families nor with the tuition fees for university education (the latter results are not reported in Fig. 4)⁴.

Finally, ancillary analyses show that if we introduce two country-level variables at a time, the best model predicting the stickiness of

high-SES students' expectations combines the openness of the access to university from vocational education and the percentage of high-SES families without university education in the country ($R^2 = 69\%$).

6. Robustness checks

We have performed several robustness checks to test whether our results are robust to different definitions for the expectation of enrolment in ATUSE and academic achievement (Fig. 5). First, in the main analysis presented above, we handle non-response in upper-secondary

⁴ An OLS for the eight countries where the information available returns a $\beta=0.000$ and a $R^2=1\%$.

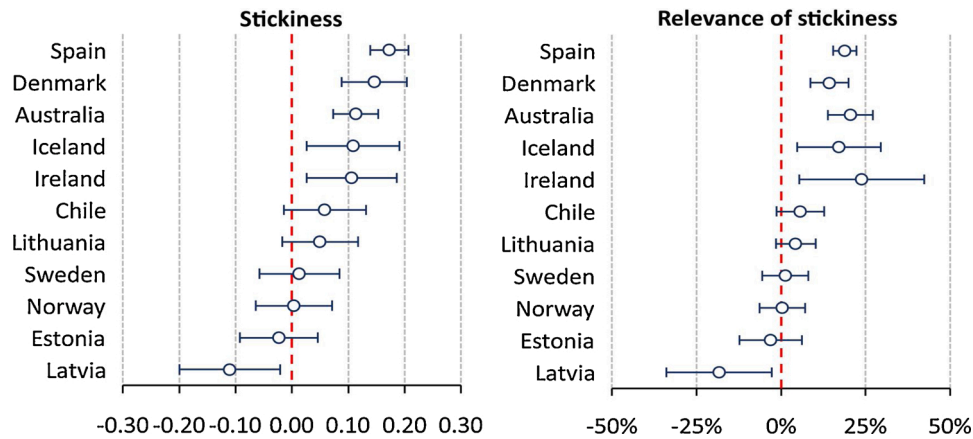


Fig. 3. Magnitude and relevance of the stickiness in the expectation of enrolment in ATUSE.

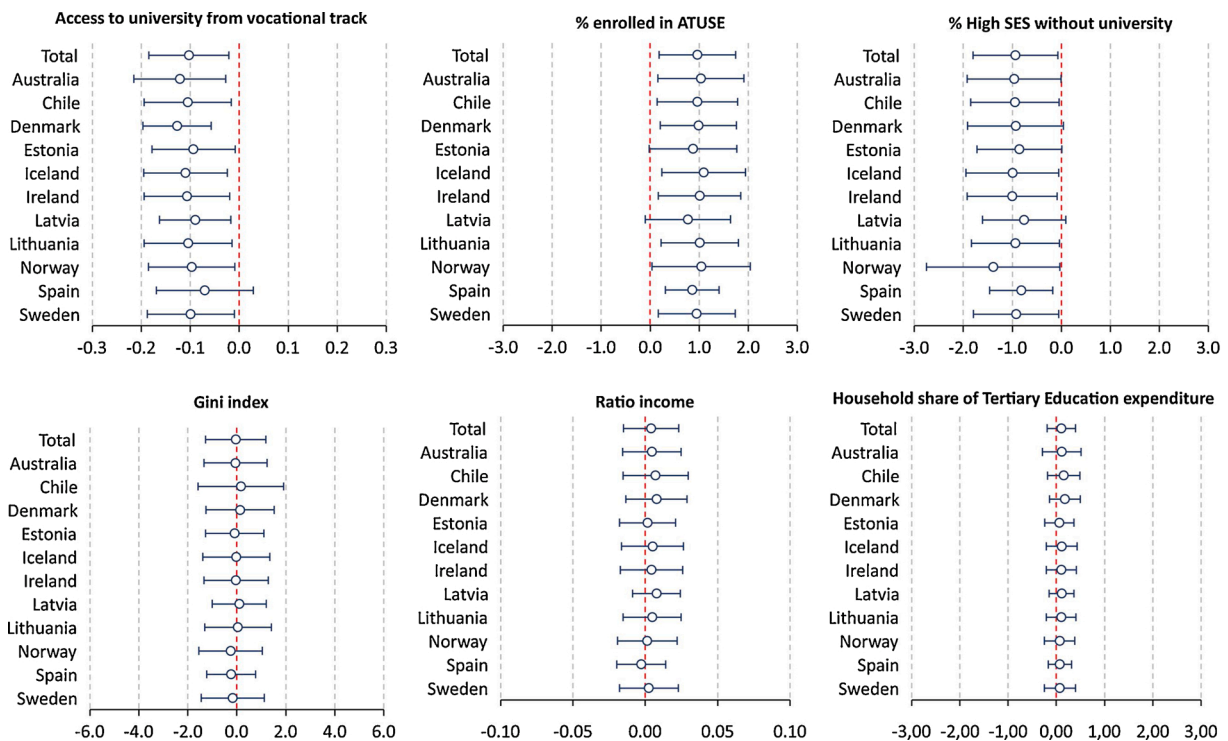


Fig. 4. Results for the jackknife linear regressions for the cross-country variability in the stickiness of expectations.

Note: Results come from six separated simple linear regression models. Regressions are weighted with the inverse of the squared standard error of the estimate for the stickiness of expectations. The name in the first column indicates the country that is left out in each replication.

expectations by imputing based on univocal tertiary expectations, either academic or vocational. If we code those cases as missing, the results are practically identical.

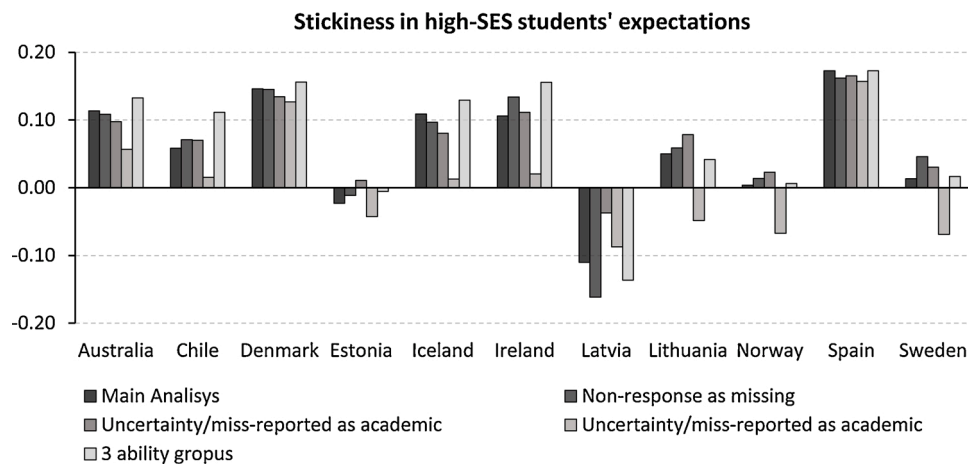
Second, in the main analysis, we drop all those cases with uncertain/miss-reported expectations (11.5 % of cases). Substantively, it is not clear how those cases could be handled differently since it is not possible to distinguish between uncertain and miss-reported responses. In Appendix B, we present descriptive statistics of uncertain/miss-reported expectations by country, SES, and academic achievement and observe that, in most countries, the percentage of uncertainty/miss-reporting is higher among low-achieving high-SES students (4 percentage points higher on average). This finding is more common in those countries

where we do not find stickiness in educational expectations in our main analysis (Table B1 in Appendix B). To test the sensitivity of our estimations to the decision to drop those cases, we consider two extreme scenarios and recode all those responses as expectations for the academic track or, alternatively, as non-academic expectations (Higgins, White, & Wood, 2008). In the former case, the results barely change. In the latter extreme scenario where all uncertain/miss-reported responses are recoded as expectations not to enrol in academic education, our measure of stickiness gets reduced in some countries but the overall pattern across countries is confirmed.

Finally, if instead of defining good and bad performance as having test scores above and below the median, we compare students from the

Table 2R² for the jackknife regression including one country-level indicator at the time and excluding one country at the time.

	Access to university from vocational track	Academic enrolment	% of high-ESCS families without university education	Gini index	Income ratio	% of the costs of Tertiary Education assumed by households	Tuition fees for a bachelor's degree
All countries	46.8 %	45.7 %	39.3 %	0.1 %	2.4 %	6.10 %	1.4 %
Excluding:							
Australia	51.1 %	46.5 %	38.6 %	0.1 %	2.9 %	4.7 %	3.3 %
Chile	46.4 %	45.8 %	40.7 %	0.6 %	5.8 %	11.2 %	0.1 %
Denmark	67.2 %	49.9 %	36.1 %	0.6 %	7.8 %	15.5 %	0.2 %
Estonia	42.8 %	37.2 %	38.0 %	0.3 %	0.4 %	2.5 %	1.4 %
Iceland	50.7 %	50.6 %	41.2 %	0.0 %	3.3 %	6.9 %	1.4 %
Ireland	48.1 %	47.2 %	42.8 %	0.0 %	2.3 %	6.1 %	1.4 %
Latvia	48.7 %	32.6 %	33.3 %	0.5 %	11.7 %	9.9 %	0.0 %
Lithuania	45.6 %	50.7 %	40.5 %	0.1 %	3.2 %	5.9 %	1.4 %
Norway	42.9 %	40.1 %	39.5 %	2.3 %	0.3 %	2.6 %	9.3 %
Spain	23.9 %	60.2 %	50.1 %	3.3 %	1.8 %	5.1 %	0.6 %
Sweden	43.6 %	47.8 %	41.4 %	1.0 %	0.9 %	2.9 %	7.1 %

**Fig. 5.** Robustness checks for the stickiness of expectations.

first and third tercile, our measure of stickiness increases everywhere but the pattern of cross-country differences in stickiness found in the main analysis remains the same.

7. Discussion and conclusions

Our results show that stickiness in high-SES students' expectations of enrolment in ATUSE and its relevance for the overall SES inequality in expectations vary considerably across countries. In general terms, we observe sticky expectations of high-SES students in 6 of the 11 countries included in the analysis. Our findings also indicate that the stickiness in expectations is highly associated with the country-level variables that portray the transition to ATUSE as high or low-stakes (Hypothesis 1). First, we find that stickiness is higher in those countries where ATUSE is the only route to university education. Second, we also observe more stickiness in those countries where a larger percentage of youngsters are enrolled in ATUSE. Third, we observe more stickiness in those countries where it is difficult to reach a high socio-economic status without completing university education. These results are in line with the hypothesis that we have derived from the compensatory advantage model: not enrolling in ATUSE is a bigger threat to social status maintenance if that decision is irreversible, the student is one of the few that do so and

accessing the top of the SES hierarchy is exclusive to university graduates. Put differently, in those countries where the vocational track provides access to university education and the advantage of university education over other types of education is not marked, enrolling in ATUSE is not a crucial prerequisite to social status maintenance and we do not observe sticky expectations.

However, we do not find any association between the economic inequality in a country and the stickiness of high-SES students' expectations (Hypotheses 2a). We also do not find any association with the costs of higher education that have to be assumed by families (Hypothesis 2b). Overall our findings do not lend support to the Hypotheses 2a and 2b and suggest that cross-country differences in the stickiness of expectations are more related to the motivation of status maintenance than to the economic capacity to compensate for low performance.

A limitation that our study shares with previous research on primary and secondary effects of social origins on the outcome of educational transitions is the endogeneity and possible reverse causality between test scores and educational expectations (Morgan, 2012). Regarding endogeneity, students with low results in PISA are likely to be negatively selected on other traits – e.g. health conditions or non-cognitive skills – that in general are negatively associated with educational expectations. The scores in PISA become then a collider of the effect of social origins

and these unobserved factors, biasing the observed effects of social origins in ways difficult to predict (Elwert & Winship, 2014). On the other hand, reverse causality occurs in the case of anticipatory behaviour so that students who have low educational expectations stop studying and have no interest in performing adequately at school. Low performance in PISA in that case is the result of low educational expectations and not the other way around. If this type of anticipatory behaviour is more common among low-SES students, reverse causation would strengthen the observed elasticity between expectations and test scores among that group of students. As a consequence, we would be overestimating the level of stickiness in expectations. Here we can note that, if one assumes that the biases due to endogeneity and reverse causation are similar across countries, our comparative analysis has still value. However, this is a strong assumption and we only conclude that our results provide a benchmark naïve estimation of the stickiness of expectations across countries that has to be further confirmed by further analyses based on causal inference designs.

Finally, our study has focused on the stickiness of educational expectations of high-SES students in case of low prior school performance. A more general theory should spell out under which conditions or for which educational transitions one should expect larger SES differences in expectations for different positions in the distribution of performance, i.e. among high, middle, or low performers. In this respect, we can speculate based on our results that when a transition is extremely selective and, therefore, only a minority of students make it, one can expect to observe large inequalities among high-performing students. In that case, having a very good school record is a necessary prerequisite for enrolment and social origins can provide a further advantage in

terms of higher motivations and more resources that can facilitate access. Consistently, we observed that inequality peaked clearly among top-performers in Latvia, the country with the lowest proportion of youngsters enrolled in ATUSE in this work. In turn, when the requirements in terms of prior performance are less stringent but still exist – e.g. access to ATUSE in Sweden – one can expect larger inequalities in the middle of the distribution of performance or, more precisely, around the threshold of minimal performance required to make a successful transition. Lastly, if the transition is not constrained by prior performance and a large proportion of students completes it successfully – as is the case in Australia – we can expect large inequalities among low performers. Ultimately, the level of selectivity of an educational transition reflects some structural properties of the transition under study that determine the risk of downward social mobility. If a transition is not selective at all, being one of the few that do not make it is likely to entail more risk of downward social mobility compared to an extremely selective transition where only very few applicants are admitted. Progressing toward a better understanding of the structural properties of educational transitions in terms of their selectivity and consequences for downward mobility avoidance, and consequently for the intergenerational mobility strategies of upper and lower social classes, seems another promising avenue to pursue in future research.

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Appendix A. Countries in the study

Australia. Compulsory education lasts from 5 to 16 years of age. Senior secondary education lasts two more years and offers academic education leading to university studies. Alternatively, students can access vocational education, which is organized in different levels: Certificate III and IV, Diploma and Advanced Diploma. VET courses at the Certificate IV, Diploma and Advanced Diploma levels provide students with a pathway into university, not so for Certificate III.

Chile. Compulsory education lasts from 6 to 18 years of age and includes Primary Education (from age 6 to 13) and Secondary Education (from age 14 to 18). The two first years of Secondary Education are unified and at age 16 the students decide between the Scientific-Humanities track (academic) and the Technical-Professional track (vocational). Graduates from Secondary Education in either track may take the University Selection Test, a requirement to enter higher education. Tertiary Education is divided into Universities, Professional Institutes and Technical Schooling Centers.

Denmark. Compulsory education lasts from 6 to 16 years of age. Optionally, compulsory education can be prolonged one year. Upper secondary education is divided into an academic and a vocational track. The academic track lasts three years and qualifies for further studies in higher education, while vocational education lasts between 1 ½ and 5 ½ years and qualifies for the labour market. However, the vocational system was reformed in 2015, and a new vocational track was created that offers general upper secondary courses (EUX). This alternative grants access to university education in the same conditions as the academic track.

Estonia. Compulsory education lasts from 7 to 16 years of age. Upper secondary education extends 3 years and is divided into an academic and a vocational track. Students who finish the academic track are granted the Upper Secondary Leaving Certificate. If they pass the State examinations, they are eligible for university studies. Graduates in the vocational track are offered a bridging course with general content to sit the State examinations, so they can also access university education.

Iceland. Compulsory education lasts from 6 to 16 years of age. Upper secondary education extends typically three more years and is taught in different types of schools: grammar schools offer an academically-oriented curriculum, industrial and specialised vocational schools offer vocational education, and comprehensive schools offer a mixture of courses. Graduates from grammar schools can take the matriculation exam (*Stúdentspróf*), which allows them to enter university. Vocational education students can sit the matriculation exam if they take general courses. Also, vocational graduates can complete bridging courses to access university.

Ireland. Compulsory education lasts from 6 to 16 years of age. The Junior Cycle finish at age 15 and leads to the Junior Certificate Examination. However, an extra year might be taken (the Transition Year). Upper secondary education lasts two years and is offered in three forms: academic (leading to the Leaving Certificate), vocational (leading to the Leaving Certificate Vocational Programme) or applied education (Leaving Certificate Applied Program). Students who are awarded the Leaving Certificate or the Leaving Certificate Vocational Programme can enter university education, but those with the Leaving Certificate Applied Programme cannot.

Latvia. Compulsory education lasts from 7 to 16 years of age. Upper secondary education lasts three years and is divided into an academic track

Table A1

Country-level descriptive data.

	Access to university from vocational track	Enrolment in ATUSE	% high-ESCS families without university education	Gini Index	Income Ratio	% of the costs of Tertiary Education assumed by households	Tuition fees for a bachelor's degree (USD PPP)
Australia	Disconnected	72.5 %	6.1 %	0.325	9.643	48.7 %	4961
Chile	Connected	67.9 %	8.0 %	0.444	15.800	57.6 %	7361
Denmark	Connected	67.6 %	3.5 %	0.261	6.486	0.2 %	0
Estonia	Connected	60.1 %	12.5 %	0.309	7.500	6.6 %	–
Iceland	Connected	77.6 %	2.5 %	0.257	5.769	7.3 %	–
Ireland	Disconnected	74.1 %	14.3 %	0.295	14.632	26.5 %	3806
Latvia	Connected	56.4 %	16.7 %	0.355	13.524	28.1 %	4348
Lithuania	Connected	71.2 %	8.9 %	0.374	11.696	22.1 %	–
Norway	Connected	57.3 %	23.5 %	0.262	6.545	4.0 %	0
Spain	Disconnected	69.7 %	7.9 %	0.333	12.095	28.8 %	1782
Sweden	Connected	67.7 %	9.7 %	0.275	7.433	1.0 %	0

Note: Data on the enrolment in ATUSE is obtained from OECD.Stat/Students access to education and participation/Enrolment by age. Population data is obtained from OECD.Stat/ Students access to education and participation/Population data. Data on income inequality is obtained from <https://databank.worldbank.org/source/poverty-and-equity/Type/TABLE/preview/on/#>. Data on costs of higher education is obtained from https://read.oecd-ilibrary.org/education/education-at-a-glance-2020_69096873-en.

leading to university education and two vocational tracks: vocational education, a three-year program that requires a bridging course to access university, and upper secondary vocational education, a four-year program mixed with general courses that permits direct access to university.

Lithuania. Compulsory education lasts from 7 to 16 years of age. Upper secondary education lasts two years and is divided into an academic and a vocational track. Students who complete the academic track can sit the Matura exam to access university education. Furthermore, students in the vocational track can choose a three-year program integrated with general education so they can sit the Matura exam and enrol in university.

Norway. Compulsory education lasts from 7 to 16 years of age. At the end of the last year, students take the national examinations. Upper secondary education is divided into two tracks: general education lasts three years and leads to the general university admission certification, while vocational education usually extends two years plus another two years of apprenticeship. Students who finish the vocational track can complete an extra year to obtain the university admission certification.

Spain. Compulsory education lasts from 6 to 16 years of age. Upper secondary education lasts two more years and is either academic or vocational. Completion of the academic track leads to the access examination for university. Students that complete the vocational track cannot sit the exam and only can enrol in Higher Vocational Education, a two-year vocational program in tertiary education. Graduates in Higher Vocational Education can later enrol in university.

Sweden. Compulsory education lasts from 6 to 16 years of age. There is no exit examination at the end of compulsory education. Upper secondary education extends three years and can be academically or vocationally oriented. At the end of Upper secondary education, students take the Swedish Scholastic Aptitude Test (Högskoleprovet). Students in the vocational track can complete the Base Year to be eligible for university.

UK and Finland are not included in the analysis because their national questionnaires did not distinguish between expectations about academic and vocational education inside ISCED3 and ISCED 5. Therefore, it is not possible to construct the same dependent variable as for the rest of the sample. Poland did question students about academic and vocational education, but the results seem implausible and suggest some error coding the answers since high-achieving high-SES students were the group with the lowest expectation of enrolment in the academic track in upper secondary education.

Table A1

Appendix B. Uncertain/miss-reported expectations

Fig. B1 depicts graphically different patterns of response about expectations in the PISA questionnaire. In the top panel, rows indicate the four variables that we use to define the expectation of enrolment in the academic track of upper secondary education. Dark grey cells indicate that the alternative was ticked, light grey cells indicate that the alternative was not ticked, and white cells indicate that whether the alternative was checked or not is irrelevant for the definition of our variable. In the bottom panel, four alternative definitions are described indicating how each pattern of response is coded. For example, the first column indicates a pattern of response where the student ticked ISCED3A, did not tick ISCED3BC and it is irrelevant what she ticked at tertiary level because the answer for upper secondary education was clear. In all definitions, this pattern of response is coded as academic.

The fourth and fifth column refers to those patterns of response where the student did not check any option at upper secondary level but gave a univocal response at tertiary level. In definitions 1, 2, and 4, we impute those cases as academic when ISCED5A was ticked and as non-academic when ISCED5B was ticked. However, in the second definition, we code those responses as missing.

Finally, columns five and six depicts those patterns of response where the student manifests uncertainty or simply misreports her expectations. In column 5, both ISCED 3A and ISCED 3B are checked regardless of what is ticked at tertiary level. In the second case, none of the alternatives is checked in upper secondary education, and both alternatives are checked at tertiary level. In the main analysis and the second definition, we code those cases as missing and drop them. As a sensitivity check, we code them all as academic and non-academic in the third and fourth definition, respectively.

	Clear response to upper secondary education			Non-response to upper secondary education but clear response to tertiary education		Uncertainty/Miss-reporting	
ISCED3A							
ISCED3B							
ISCED5A							
ISCED5B							
Definition 1 (Main Analysis)	Academic	Non-academic	Non-academic	Academic	Non-academic	Missing	Missing
Definition 2	Academic	Non-academic	Non-academic	Missing	Missing	Missing	Missing
Definition 3	Academic	Non-academic	Non-academic	Academic	Non-academic	Academic	Academic
Definition 4	Academic	Non-academic	Non-academic	Academic	Non-academic	Non-academic	Non-academic

Fig. B1. Alternative definitions for the expectation of ATUSE.

Table B1
Uncertainty/miss-reporting by country, SES, and performance in PISA.

	% Uncertain/miss-reported responses						Total	Do we observe stickiness?
	Low SES		Medium SES		High SES			
	Low perf.	High perf.	Low perf.	High perf.	Low perf.	High perf.		
Denmark	5.8	4.3	7.0	3.9	6.1	3.4	5.0	Yes
Spain	6.2	3.8	7.5	5.2	8.1	5.1	6.2	Yes
Estonia	10.0	12.1	13.7	13.6	16.0	12.3	12.3	No
Lithuania	14.7	11.3	13.9	11.5	20.3	8.0	12.5	No
Sweden	14.7	9.5	16.1	9.4	21.5	7.8	12.6	No
Norway	11.1	11.7	14.7	9.7	16.8	11.7	12.7	No
Chile	11.7	17.8	12.9	14.5	16.3	9.6	13.2	Yes
Australia	18.9	16.5	15.8	14.3	16.6	9.9	16.4	Yes
Ireland	16.0	20.1	21.2	17.7	21.7	16.4	18.8	Yes
Iceland	28.8	24.6	31.7	23.6	29.9	18.4	25.6	Yes
Latvia	21.1	23.6	24.4	29.1	30.0	27.4	26.2	No
Total	11.1	9.8	12.1	9.6	13.8	8.3	11.5	

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