3

What is the Relationship Between Marks and Educational Expectations?

Do students' school marks shape their expectations about their future? This chapter examines the relationship between school marks and students' expectations of completing a university education. It also discusses how marks can reduce – or reinforce – inequalities in those expectations between socio-economically advantaged and disadvantaged students, and between girls and boys.

This chapter combines the results developed in Chapters 1 and 2 to assess whether marks provide useful information to students beyond the limits of the classroom and school. It evaluates the assumption that marks are a consistent and reliable source of information for students regarding their own abilities and the likelihood that they expect to attend and succeed in university. It also evaluates the extent to which inequalities in expectations, as discussed in Chapter 1, are mediated by inequalities in marks, as examined in Chapter 2. If, as the first analysis suggests, marks help to define students' educational expectations and reduce inequality, marks should be regarded as a key element in students' educational experience that shape students' choices about their education and, ultimately, their occupation.

Because the analyses that are presented in this chapter combine information on students' marks and educational expectations, the sample of countries and economies differs slightly from the sample discussed in Chapter 1. Due to different marking systems within a country, this chapter's analysis of expectations distinguishes between students in Portugal's ISCED 2 and ISCED 3 programmes. Also, as Australia, Hong Kong-China, Korea and Slovenia did not include the question on student marks in the Educational Career questionnaire (ECQ), these countries are omitted from the following analyses and discussions.

MARKS PREDICT EDUCATIONAL EXPECTATIONS

Chapter 1 highlights that students who perform better are more likely to hold higher expectations. Students tend to realise, in all countries and economies, that academic achievement is a determinant of success in higher education and form their expectations accordingly. However, students do not know their actual underlying skills and performance level. While they know what problems they can solve and how much effort they need to invest to learn new material, they lack a standardised metric to compare themselves with others and infer their likelihood to attend and succeed at university. Or do they? Do students use marks to form their opinions about their future?

Marks are a consistent, accessible and easy-to-interpret source of information about students' own achievement, habits and attitudes. Research has highlighted that marks are significantly related to long-term student outcomes, such as university completion and earnings, inasmuch as they convey information about students' non-cognitive skills, after accounting for test scores. Yet the fact that a relationship between marks and long-term outcomes exists does not necessarily mean that students will use the information marks convey when forming their expectations. In fact, employers tend to dismiss marks as subjective and consider them to be unlikely to provide much relevant information about workers' prospects (Rosenbaum, 2001). Little is known about whether students use marks as a relevant source of information when they form their educational and career expectations, even though in recent years some have suggested that marks be included as a key component in the analysis of student expectations (Buchmann and Dalton, 2002; Buchmann and Park, 2009; Park, 2008; McDaniel, 2010). In the United States, for example, students form their expectations early on in their lives and only adapt them to only large changes in their grade point averages (Andrew and Hauser, 2012).

Marks are an important source of information on which students may rely to evaluate their success in school and their potential in higher education. Yet, not all teachers assign marks using the same criteria. While some assign marks on the basis of absolute knowledge, attitudes and behaviours, others tend to reward students' relative position within the class or the school and attitudes and behaviours that have less bearing on students' future success. Hence, while marks represent a readily available source of information, at times they can be unreliable predictors of students' potential success at university and beyond. This is particularly true when marks reflect students' *relative* position within the school (as observed when teachers and schools use normative grading practices) rather than their *absolute* level of performance and likelihood of succeeding in their educational careers.

After accounting for performance in reading and mathematics as well as the ISCED programme a student attends (sources of standardised and structural information related to success in obtaining a university degree), students with higher marks are more likely to expect to complete a university degree. Beyond any standardised measure of performance and structural paths that enable access to and success in university, students still rely on their marks to form their expectations. Marks are positively related to the expectation of completing a university degree in all countries and economies that distributed the ECQ: students who receive higher marks have higher expectations. The magnitude of this relationship is such that students who receive marks that are one standard deviation above the national mean are, on average, as likely to expect a university degree as are students who score 34 points higher in the PISA mathematics and reading assessments.

The relationship between marks and expectations is especially strong in Hungary, Poland, Portugal, Serbia, Singapore and the Slovak Republic. Students with marks that are one standard deviation above the mean are more likely to expect to complete a university degree than students who score 50 points higher in mathematics and reading (roughly one half of a standard deviation in mathematics and reading performance). In Poland, for example, students who receive marks that are one standard deviation higher are as likely to expect to complete a university degree as students who score 84 points higher in the mathematics and reading assessments. For students in Serbia, the influence of marks that are one standard deviation higher is equivalent to the influence of 61 score points in the PISA mathematics and reading assessments when forming expectations of future education (Figure 3.1).

In countries where marks are strongly related to student expectations, marks may have particularly long-lasting consequences for students and may result in inequities in access to higher education if they are related to student background or school context. For example, as discussed in Chapter 2, in Poland, student marks are strongly related to gender, socio-economic status and contextual effects: boys, socio-economically disadvantaged students and students who attend high-performing schools are more likely to receive lower marks and therefore may be less likely to expect to complete a university degree, even if their performance in reading and mathematics is equal to that of girls or students attending poorer-performing schools.

In Austria, the Flemish Community of Belgium and Trinidad and Tobago, marks have a weaker relationship with educational expectations, after accounting for performance and ISCED programmes (Figure 3.1). These are school systems that differentiate students at an early age and, in this context, the characteristics of schools may provide additional information to students about their likelihood of succeeding in university.

■ Figure 3.1 ■

Relationship between marks and expectations of completing a university degree, after accounting for students' academic characteristics
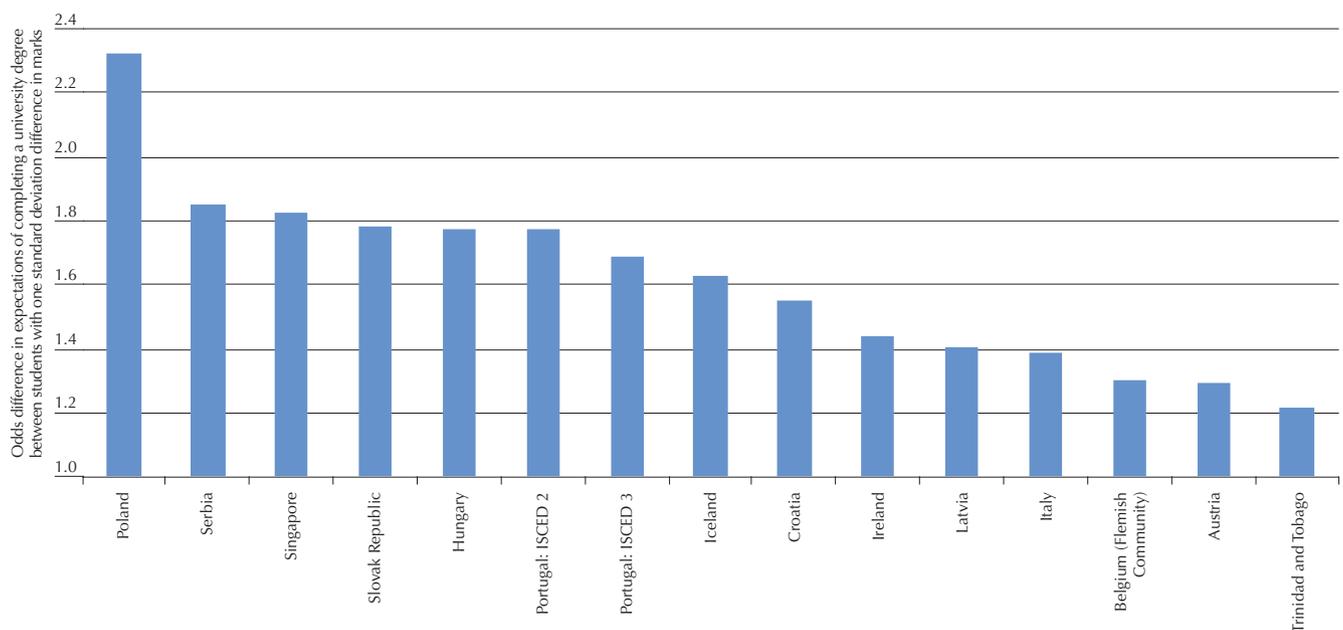
Note: Estimates correspond to the coefficient associated to marks in a logistic regression predicting whether students expect to complete a university degree. Marks are standardised at the country level so coefficients must be interpreted as the difference in the odds of expecting a university degree between students who have a one standard deviation difference in their marks. The logistic regression also includes students' scores in PISA reading and mathematics assessments as well as their programme orientation (academic or non-academic).
Countries are sorted in descending order of the size of the relationship between marks and university expectations.
Source: Table B3.1 (estimates from the tables have been converted from log-odds to odds).
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Marks remain an important influence on students' formation of educational expectations even after accounting for the school's academic context and students' background (see Table B3.1 and Table B3.3). In all countries and economies, marks are positively and significantly associated with students' expectation of completing a university degree, even after accounting for students' performance and backgrounds, as discussed in Chapter 1.

These analyses stress the importance of marks not only for motivating student attitudes and behaviours within the school, but for forming students' educational expectations. Students who receive higher marks are more likely to believe that they have the potential to succeed in completing a university degree; and teachers and schools thus have a responsibility to transmit reliable information to students about their potential to succeed in further education. This responsibility comes with a challenge: to provide reliable information about students' potential that helps to build realistic expectations, while at the same time maintaining students' motivation to learn in school, since students with higher expectations may have more motivation to put forth the effort into school work to meet those expectations. The burden of this challenge falls not only on teachers who award marks and design in-class assessments, but on education systems as a whole, as the value of different levels of educational attainment is meaningful only if

desirable employment and further educational opportunities are available to students at all performance levels and all attainment levels. School systems must also ensure that marking practices are consistent with broader assessment policies.

MARKS CAN REDUCE INEQUALITIES IN EDUCATIONAL EXPECTATIONS

Chapter 1 explored inequalities in educational expectations and finds that girls and socio-economically advantaged students are more likely than boys and socio-economically disadvantaged students to expect to complete a university degree. These inequalities in educational expectations remain when comparing girls and boys (and advantaged and disadvantaged students) who perform at the same level in reading and mathematics and who have the same attitudes towards learning and learning habits. One potential explanation for this is that students are generally unaware of their actual levels of skills as measured by a standardised assessment, such as PISA, and consequently, about their potential to enter and succeed in higher education. Marks are perhaps a more accessible source of information about students' performance and potential success in university and thus have more influence as students form their expectations.

In parallel, the results from Chapter 2 also highlighted that girls and advantaged students are more likely to receive higher marks, even after accounting for reading and mathematics performance. Since marks provide students with information that can influence their expectations, do inequalities in marks explain gender and socio-economic inequalities in expectations? These analyses are particularly important because marks are perhaps the primary source of information students have about their achievement and potential to complete a university degree. Greater equality in the awarding of marks may promote greater equality in students' expectations and, ultimately, in educational attainment if the structural features of access to and graduation from university are more equal too.

Gender differences in marks and expectations

In all countries and economies, and net of immigrant background, the language spoken at home, and socio-economic status, girls are more likely than boys to expect to complete a university degree, before accounting for their marks and mathematics or reading performance. In Poland, girls are at least 2.5 times more likely than boys to expect to complete a university degree (Figure 3.2).

■ Figure 3.2 ■

Change in the gender-related odds difference in expectations of completing a university degree, after accounting for students' academic characteristics
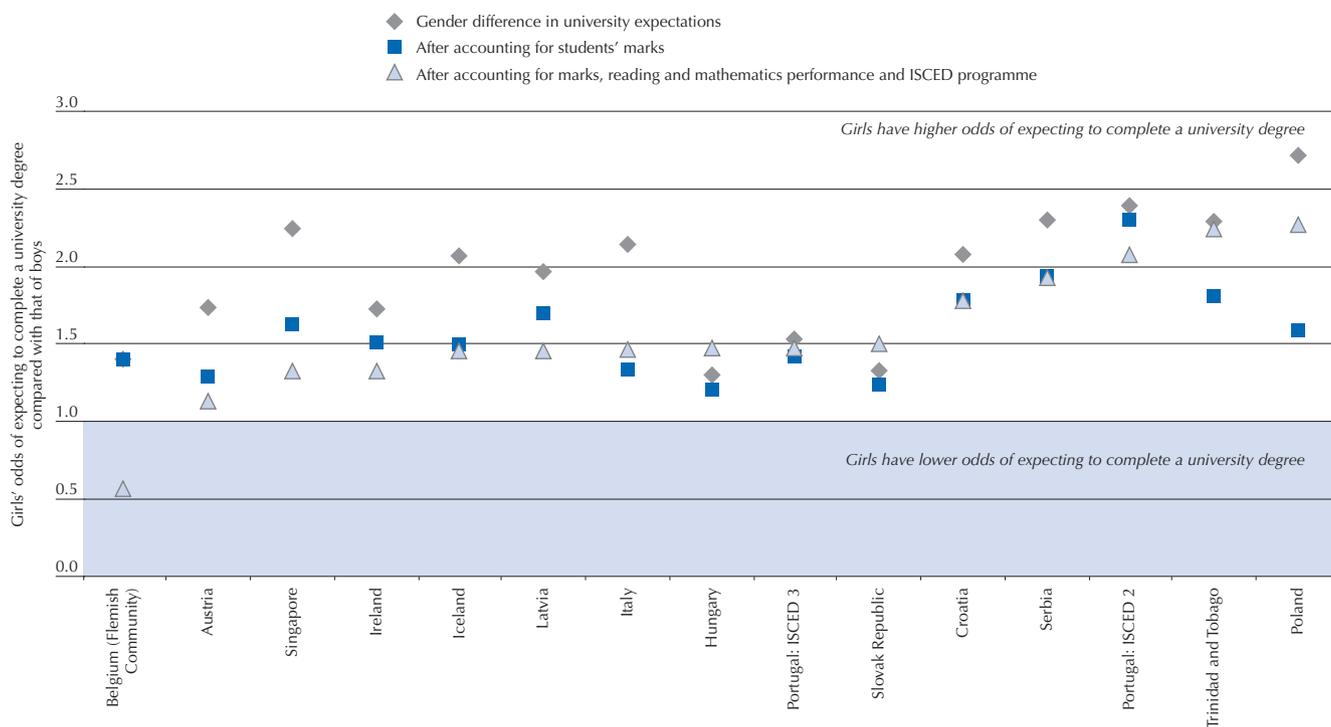
Note: Estimates correspond to the coefficient associated to being female in a logistic regression predicting whether students expect to complete a university degree. Coefficients must be interpreted as the difference in the odds of expecting a university degree between girls and boys. All models include controls for students' socio-economic status, immigrant background and language spoken at home.
Countries sorted in ascending order of girls' odds of expecting a university degree after accounting for marks, reading and mathematics performance and ISCED programme with respect to that of boys.
Source: Tables B3.5, B3.7 and B3.8 (estimates from the tables have been converted from log-odds to odds).
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As discussed earlier, these differences are related to the differences in performance between boys and girls. In all PISA countries and economies, girls outperform boys in reading; and in many countries and economies, boys outperform girls in mathematics (OECD, 2010a). In Latvia and Singapore, gender differences in expectations reflect gender differences in performance and ISCED programme: after accounting for reading and mathematics performance as well as ISCED programme, the gender difference in expecting to complete a university degree is no longer statistically significant (Figure 3.2). Although in the large majority of countries and economies gender differences in expectations persist after accounting for performance and ISCED programme, in Croatia, Iceland and Italy, a large part of the gender differences in expectations is explained by performance and ISCED programme. In these countries, performance and ISCED programmes account for at least a third of the gender differences in expectations.

After accounting for ISCED programme and reading and mathematics performance, the different marks boys and girls receive explains a large part of the gender differences in expectations to complete a university degree. Yet marks also convey information that students consider relevant. On average across countries and economies where differences were statistically significant, marks help to explain 17% of the strength of the relationship between expectations and gender among boys and girls who performed equally well and were in similar ISCED programmes. In Croatia, Hungary, Poland and the Slovak Republic, marks explain more than a quarter of the gender differences in expectations that remain after accounting for performance, suggesting that differences in marks explain at least some of the differences between boys' and girls' expectations to complete a university degree (Figure 3.2).

Socio-economic differences in marks and expectations

In all countries and economies, socio-economically advantaged students are more likely to expect to complete a university degree. This difference is especially pronounced in Austria, Hungary and Poland, where advantaged students (those with a score on the *PISA index of economic, social and cultural status* that is one unit higher than the OECD average) are at least three times more likely to expect to complete a university degree than a student whose socio-economic status is equal to that of the OECD average. This difference reflects the fact that socio-economically advantaged students in all countries and economies are more likely to perform better (OECD, 2010b). In fact, after accounting for students' reading and mathematics performance, around 30% of the difference in expectations related to students' socio-economic status is accounted for by the differences in performance related to socio-economic background and ISCED programmes. In Austria, Hungary and the Slovak Republic, around 40% of the difference in university expectations related to socio-economic status are explained by differences in performance that are related to socio-economic background.

The remaining differences in students' expectations of completing a university degree that are related to socio-economic status are not substantially explained by differences in the marks that advantaged and disadvantaged students receive. After accounting for performance in reading and mathematics, school marks account for a small part of the inequality in expectations related to socio-economic status. The remaining differences are still statistically significant in practically all countries and economies. They are particularly large in Croatia, Hungary, Iceland, Poland and Serbia, where a one-unit increase on the *PISA index of economic, social and cultural background* is seen to at least double the likelihood that a student will expect to complete a university degree. These remaining differences could be due to the influence of peers, parents and teachers who assume that students from advantaged backgrounds will have higher expectations; differences in access to curricula (academic or vocational) related to socio-economic background; or to the perception, held by disadvantaged students, that they are less likely to have access to and succeed in university, even if they have similar marks and performance levels, and follow the same academic curriculum as their advantaged peers (Tables B3.5, B3.6, B3.7 and B3.8) (Andrew and Hauser, 2012; Buchmann and Dalton, 2002; Buchmann and Park, 2009; Morgan, 2005).

CONCLUSION

Students' expectations of attending and completing university depend on their aspirations and the information they have regarding their ability to succeed in higher education. As discussed in Chapter 1, a student's actual level of skills – as measured by the PISA assessment – is highly related to that student's educational expectations: better-performing students are more likely to believe they will complete a university degree while poorly-performing students are more likely to believe that they will complete their formal education at the secondary level. Similarly, students in ISCED A-type programmes are more likely to expect to complete a university degree.

Yet students also rely on another source of information, perhaps one that is more readily available to them: school marks. In all the countries and economies that disseminated the ECQ in the PISA 2009 cycle and were asked about the marks they receive, students with higher marks were more likely to expect to graduate from university than students with lower marks. Marks are relevant in predicting students' expectations of graduating from university, even after accounting for student performance and ISCED programme. This means that students rely on the information about their performance that they receive in school to form their long-term expectations; and they should: research shows that marks are related to students' long-term outcomes, like earnings and university completion (Rosenbaum, 2001). Students do well to take this information into account. Teachers and schools would do well to understand that marks are more than an appraisal of skills and knowledge acquired; they provide information to the student about what is valued not only in school but in life in general.

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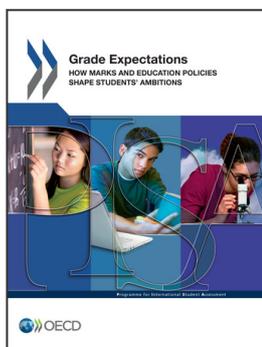
From:

Grade Expectations
How Marks and Education Policies Shape Students' Ambitions

Access the complete publication at:
https://doi.org/10.1787/9789264187528-en