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## THE EFFECTS OF COLLEGE COST AND FINANCIAL AID IN GERMANY

*Why Are Students Sensitive to College Costs in a Low-Cost / High-Aid System?*<sup>1</sup>

### INTRODUCTION

Over the last decades, educational research in Europe has paid little attention to the costs of higher education and how they affect students' decisions on whether to enroll in higher education. Researchers and policy makers seem to assume that the costs of a college degree play a minor role in enrollment decisions, and that other factors such as information and academic preparation are more important explanations for why some high school graduates enroll in higher education and some do not (e.g. Winter et al., 2010). The situation is very different in the U.S. and other countries discussed in this volume where the effects of college costs have been a prominent and well-researched issue for many years (e.g. Leslie & Brinkmann, 1987; Heller, 1997). One explanation for the scant attention to the effects of college costs in Europe is that the costs a student has to pay for college are much lower in Europe than in many other parts of the world. Unlike the situation in the U.S., European higher education is characterized by relatively low personal costs, high financial aid, and high public subsidies.

In Germany, for example, almost all universities are public and most states do not charge tuition fees for public higher education; those who do only charge a moderate amount of 1,000 Euros (\$1,200) per year. A grant/loan program covers about 30 percent of the living expenses for most students of low socioeconomic status<sup>2</sup> (low-SES students).<sup>3</sup> The average student from a low socioeconomic background can therefore finance his or her college education with a combination of grant/loan aid, employment and parental support (Isserstedt, Middendorf, Kandulla, Borchert, & Leszczesky, 2010). The majority of students do not need to take out additional student loans; those who do can borrow money through a subsidized loan program and therefore are not credit constrained.

Given that personal college costs are very low, it is often assumed that costs are not an important factor to explain the stark underrepresentation of low SES students in higher education in Germany. Among students who have qualified to enter higher education and have obtained the *Abitur* degree, 85 percent move on to a full-time college if the parents have a college degree, compared to 70% if the parents do not

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have a college degree (Heine, Spangenberg & Lörz, 2007). Scholars often argue that the existence of vocational training, which pays a monthly stipend, and the desire to have a secure income immediately after graduating from secondary school explain why low-SES students are less likely to pursue higher education than their higher-SES peers (e.g. Müller & Jacob, 2008).

However, recent research shows that despite being relatively low, college costs have a noticeable influence on low-SES students' enrollment in higher education (Kroth, 2013; Quast et al., 2012). Other factors, such as differences in academic achievement or expectations about employment are less important mediators for the relationship between social background and college access (Kroth, 2013). The importance of costs is furthermore underlined by the fact that even a small increase in actual costs due to the introduction of tuition fees has a substantial effect on students' decision to enroll in higher education (Kroth, 2013). The probability that *Abitur* recipients of low parental education enroll in higher education dropped by 7 percentage points from a baseline of 52 percent after tuition fees were introduced in some states.<sup>4</sup> High school graduates whose parents have a college degree were not affected by tuition fees.

The strong influence of cost on students' decision to enroll is unexpected given that the increase in costs is negligible compared to the high returns from higher education and that grant and loan programs are available for students who lack the financial means to pay for their college degree. This chapter addresses the question of why students of low socioeconomic background in Germany are very sensitive to small cost increases for higher education against the backdrop of an overall generous funding system. I first describe the system of college costs and financial aid in Germany. Then, I review the empirical findings about the effects of costs and financial aid on college enrollment, especially for low-SES students. To conclude, I discuss four potential explanations for the high price-sensitivity among low-SES students and review the empirical evidence. I will discuss the explanatory power of credit constraints, low net monetary benefits, misinformation about net benefits, and loan aversion.

## COLLEGE COSTS AND FINANCIAL AID IN GERMANY

### *College Costs*

College costs are generally comprised of direct costs (e.g. tuition fees and costs for books) and indirect costs (e.g. foregone income). From 1970 until recently, German higher education institutions did not charge tuition fees. Students were only required to pay an administrative fee of approximately 100 Euros per semester. In 2006, seven German states introduced tuition fees for all public higher education. Students in these states pay 1000 Euros (ca. \$1300) per academic year. Students with disabilities or students with children (or other family circumstances) are exempt from tuition fees in some of these states. Tuition fees have been a controversial hot button issue in Germany, and five states have abolished tuition fees after a change in government.<sup>5</sup>

Living expenses are, strictly speaking, not part of college costs because they need to be paid regardless of whether a person enrolls in higher education or not. Yet in an analysis about the effects of college costs on enrollment it is important to consider them because students can only succeed in higher education if they have enough money to cover their living expenses. Monthly costs for rent, food, transportation, health insurance, telecommunications and other expenses are on average 779 Euros (Isserstedt et al., 2010). It is important to note that these are average costs which vary considerably across cities and are strongly dependent on students' life circumstances.

#### *Financial Aid*

Compared to other nations, Germany has a generous financial aid system. The largest financial aid program in Germany is the federal BAFöG program (*Bundesausbildungsförderungsgesetz*). Introduced in 1971 to support low and middle income students, BAFöG aid consists of 50 percent grant and 50 percent no-interest loan for a period until the expected time to degree. Eligibility and amount of aid depend on students' income and savings as well as on the income and savings of their spouse and parents. The number, age, and income of students' siblings and other household members also affect the amount of BAFöG aid. In general, students whose parents combined income is below 1,605 Euros per month after taxes are eligible for maximum BAFöG aid; students whose parents earn more are eligible for incrementally smaller amounts. On average, 23 percent of students receive BAFöG grants and loans; 41 percent of the students from the lowest SES quartile receive BAFöG aid, compared to 11 percent of students from the highest SES group (Isserstedt et al., 2010). Most students who do not receive BAFöG are not eligible because their income is too high. Among the students who have lost their eligibility, 53 percent lose it because they study longer than the expected time to earn a degree or because they have changed their major.

In 2009, the maximum amount of BAFöG aid was 512 Euros per month; the average amount is about 414 Euros (Isserstedt et al., 2010). For a student with a low-SES background whose average costs are 779 Euros per month (tuition fees are excluded), BAFöG pays, on average, 32 percent of the college costs. The repayment for the loan part of BAFöG program begins after graduation. Individuals who earn less than 960 Euros per month after taxes following college graduation can defer repayment.

In addition to the BAFöG program, the German government subsidizes college costs indirectly. Students receive free or reduced-cost health insurance and, if their parents are employed, they are covered by their parents' long-term care insurance. In addition, they receive discounts for many public services and for public transportation. Parents of students receive large tax exemptions and deductions along with add-ons to their pensions and unemployment benefits (Schwarzenberger & Gwosc, 2008).

Beyond the need-based BAFöG program, there are a number of merit-based programs, which support relatively few students. A national foundation funded

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by the federal and state governments, as well as private donors (Studienstiftung des Deutschen Volkes), award fellowships for gifted students. Furthermore, the foundations of the five major political parties award fellowships for students who have excelled academically and are engaged in political work or community service. A recent study found that these six merit programs rarely support students from low-SES families (Middendorff, Isserstedt & Kandulla, 2009). The German government introduced a new merit aid program in 2010 which supports high achieving students regardless of their financial background (Deutschland-stipendium). Fellowships from private foundations are rare, and almost no financial aid is awarded by the higher education institutions directly.

#### *Loans*

Student loans are offered by private and government-owned banks. The government-owned KfW Bank offers the most popular loan program and provides about 92 percent of student loans in Germany (Müller, 2012). The KfW loan program offers up to 650 Euros per month regardless of the students' or their parents' income or savings. The nominal interest rate is currently 3.36 percent and interest begins to accrue immediately. Students can defer repayment for two years after graduation. The KfW loan program is available to students who study full-time towards their first degree, are younger than 35, are EU citizens who graduated from a German high school or lived in Germany three years prior to college enrollment, or are Non-EU citizens who graduated from a German high school (which makes most high school graduates from immigrant families eligible for the KfW loan program).

Few German students use private loans to finance their college education. Between 5 and 6 percent of students take out loans in addition to the BAFöG aid (Ebcinoglu & Gersch, 2008; Isserstedt et al., 2010). Despite their higher financial need, low-SES students are not more likely to take out loans than high-SES students (Ebcinoglu & Gersch, 2008). Students who take out loans, on average take 400 Euros per month which covers about half of their average monthly costs (Isserstedt et al., 2010).

#### *Financial Packages and Unmet Financial Need*

**Table 1** summarizes the average distribution of income sources for low and high-SES students. As described above, the sources of income vary considerably by socioeconomic background. On average, low-SES students receive support from their parents (26%), from BAFöG (32%) and from their own employment (30%). High-SES students receive a much larger proportion from their parents (63%) and a much smaller amount from BAFöG (6%) and from their own employment (21%).

The amount of unmet financial need, which is defined as the amount not covered by BAFöG, employment, parental support and other sources, is low on average.

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As described in Table 1, the average low-SES student can pay college costs and living expenses with a combination of BAFöG, employment, parental support, and other sources and does not need to take out an additional loan. However, since financial needs are barely met, the average low-SES student does not have sufficient resources to pay the tuition fees charged in some states in the amount of 1000 Euros (83 Euros per month). Students in these states have to work more hours or receive more financial support from their parents to make ends meet.

It is important to stress that these numbers are averages across a heterogeneous group of students. Unmet financial need is likely to be much higher for students who are not eligible for BAFöG because their parental or own income is just above the eligibility cut-off, because they have studied longer than the expected time to degree, or have changed their major. Unmet financial need is also higher for students who receive no support from their parents or who cannot work while in college. The next section will review the empirical evidence on how college costs and financial aid influence matriculation decisions in Germany, with particular focus on the decisions of low-SES students.

Table 1. Average sources of income per month by SES background

Sources of income	Lowest SES-Quartile		Highest SES-Quartile	
	In Euro	Percent of Income	In Euro	Percent of Income
Parents	204	26 %	525	63 %
BAFöG aid (50% loan, 50% grant)	251	32 %	50	6 %
Employment	234	30 %	175	21 %
Other (eg. savings)	94	12 %	83	10 %
Average income per month	783		833	
Average need (excl. tuition) per month	779		779	
Average unmet need per month	-4 (none)		-54 (none)	
Loans outside of BAFöG	5% of students take out these loans, on average 400 Euros per month. Loans are not included in average income breakdown because few students take out loans.			

Source: Isserstedt et al. (2010), 19. Sozialerhebung

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College Costs

Several recent studies show that college costs significantly influence the decision of students to pursue higher education regardless of social background (Becker, 2000;

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Becker & Hecken, 2009b; Heine, Quast & Beusse, 2010; Kroth, 2013). One part of the research is based on survey data regarding students' perceptions about the influence of college costs on their college-going decision. Based on a 2008 survey of high school graduates, Heine et al. (2010) report that 77% of *Abitur* recipients who do not plan to enter college mention costs as the most important reason for their decision; 60 percent state that their career goal does not require a college degree, 43 percent that they feel they are unprepared for college, and 43 percent that they are uncertain about the employment prospects of college graduates. Viewing college costs as influencing the college-going decision is also negatively associated with actual college enrollment. Heine, Quast and Beusse et al. (2010) found that viewing costs as influential is associated with a lower probability of college enrollment when other student characteristics are held constant. Measured at the mean, a one point increase (on a five point scale) in viewing costs as influential on the college going decision is associated with a 2 percentage points drop in enrollment probability after adjusting for gender, parental education, migration background, type of high school, *Abitur* grade, expected career prospects for college graduates, number of books in the household, and difficulty of obtaining information about higher education. Similar results were found in a study based on high school students in the state of Saxony in the years 2000 to 2006 (Becker, 2000; Becker & Hecken, 2009b).

However, Heine et al. (2010) found concerns about costs to be a less important predictor for college enrollment than a number of other factors. Grades, interest in academic work, expected career prospects, and type of school all had a stronger effect on actual college enrollment a year later. Since this finding runs counter to the results described above, it may be that students tend to overstate the influence of college costs on their college-going decision, although costs are still part of the decision.

The results above pertain to students regardless of their social background, but the existing research suggests that low-SES students are more strongly affected by college costs than their high-SES peers. Heine et al. (2010) found that 79 percent of students whose parents do not have a college degree see costs as a very important reason to forego a college education, compared to 71 percent of students whose parents went to college. Kroth (2013) found that concerns about college costs function as a key mediating factor for the effect of social disparities on college enrollment. Other factors, such as differences in academic achievement or expectations about the employment prospects of college graduates were less important in explaining this association.

In summary, the existing research suggests that costs influence the college going decision in Germany and that low-SES students are more strongly affected by college costs than their high-SES peers. Most of these studies are based on students' perceptions of how costs influence their intention to go to college, not how actual college costs influence students' actual enrollment behavior. Recent studies about the influence of tuition fees provide more direct evidence about the influence of college costs on actual enrollment behavior.

*Tuition Fees*

Two recent studies found that tuition fees, which were introduced in some German states in the amount of 1,000 Euros per year, discourage students of low parental education from enrolling in college. There is conflicting evidence whether tuition fees also affect the general student population and students of high parental education, respectively. Hübner (2009) investigated the impact of tuition fees using a natural experiment approach. He compared how college enrollment rates developed in states with and without tuition fees in the years after fees were introduced. He found that the probability of college enrollment for high school graduates from fee-states went down 2.8 percent between 2006 and 2007 relative to the change observed in states without tuition fees. The study is based on data from the Federal Office of Statistics on all high school graduates who passed the *Abitur* exam in Germany between 2002 and 2007. This study might, however, overestimate the effect of tuition fees because the data also include high school graduates who enroll only in order to receive the financial benefits (reduced fares and cheap health care), not for the purpose of learning. It can be expected that enrollment declines with the introduction of tuition fees simply because the additional costs outweigh the fringe benefits. Another limitation of Hübner's study is that states which introduced tuition fees had already announced this policy at the beginning of 2005. A comparison of the enrollment rates of the years 2004 to 2005 would therefore be more appropriate.

Kroth (2013) studied the effects of tuition fees on enrollment using a similar approach to the one used by Hübner but comparing the years 2004 and 2005 and excluding enrollees who enroll just for the financial side-benefits. Contrary to Hübner (2009), Kroth found no evidence that tuition fees affect enrollment of high school graduates in general. Her study shows, however, that *Abitur* recipients with low SES background were substantially affected by tuition fees; their probability to enroll in higher education six months after graduation dropped by 7 percentage points from a baseline of 52 percent after tuition fees were introduced relative to the change in the states without tuition fees. A preliminary analysis comparing the years 2005 to 2006 found no effects of tuition fees on enrollment intentions (Helbig, Baier & Kroth, 2012).

In another study, Heine, Quast and Spangenberg (2008) found that 4 percent of the *Abitur* recipients agreed with the statement that they had given up their college plans because of tuition fees. The authors also found that 6 percent of the high school graduates whose parents had no college or only basic vocational training stated they had given up their college plans because of tuition fees compared to 3 percent of students whose parents have a university degree. Female students were more likely than male students to state they had given up their college plans because of tuition fees. These results need to be interpreted with caution because they are based on students' perceptions about tuition fees and not their actual behavior.

Taken together, the existing research suggests that college costs and tuition fees negatively affect college access, and that low-SES students are particularly affected.

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Tuition fees might explain why low-SES students have a much lower probability of accessing higher education even when they are academically prepared. More research about the effect of college costs and tuition fees is necessary, however, because most studies only investigated how students perceive the influence of college costs—not how they affect their actual decisions.

*Financial Aid (The BAFöG program)*

One of the main goals of financial aid is to break the link between students' social background and their opportunity to enroll in higher education. The following section reviews the literature about the degree to which financial aid achieves this objective in Germany. As with the research on college costs, empirical findings about the effect of financial aid are scarce in Germany. So far, the only aid program studied has been the BAFöG program.

The existing research suggests that both eligibility for the BAFöG program and the amount of aid provided have a positive impact on college enrollment. Steiner and Wrohlich (2008) found that the amount of BAFöG aid provided has a positive effect on college access. They estimated the BAFöG amount offered to individual high school graduates with a detailed tax benefit microsimulation model based on data from the German Socioeconomic Panel (SOEP). To account for the fact that college access decisions are made in a time span of several years after high school graduation and to account for the right-censored character of the observations, Steiner and Wrohlich estimated a discrete-time hazard rate model with the competing risks "vocational training" and "enrollment into university." They found that the amount of BAFöG aid positively affects college enrollment rates. An increase in BAFöG aid by 1000 Euro per year is associated with an increase in the higher education enrollment rate of 2 percentage points, from a baseline of 76 percent. Steiner and Wrohlich conclude that the BAFöG program has a strong effect on enrollment because of this finding and also because an increase in the BAFöG amount has a stronger effect on enrollment than a 1000 Euro difference in parental income. In a more detailed follow up study, the authors estimated that an increase of the monthly BAFöG amount by 100 Euros increases the transition rate into higher education by 2.9 percentage points (Steiner & Wrohlich, 2012).

In an earlier study, Baumgartner and Steiner (2006) did not find that an increase in BAFöG aid had a positive effect on enrollment rates. Their study, also based on SOEP data, uses an increase in BAFöG aid by 10 percent in the year 2001 as a "natural experiment." The authors caution, however, that their estimates might be inefficient because they only use eligibility status for the identification of BAFöG effect and use relatively small samples. Lauer (2002) investigated the impact of BAFöG using microeconomic modeling, also using SOEP data. She found that being eligible for BAFöG aid had a very strong positive effect on the probability of pursuing a college degree. The amount of grant aid offered was found to affect enrollment decisions as well but to a lesser degree than whether or not a student is eligible.



Taken together, the findings suggest that eligibility for the combined grant/loan program significantly increases college access among low-SES students in Germany. The research also suggests that even small increases in the amount of BAFöG aid increase the college enrollment among low-SES students.

#### *Student Loans*

The existing research suggests that private student loans are not very effective at opening the way to higher education for low-SES students in Germany. As described above, only 5 to 6 percent of students use loans outside of the BAFöG program to finance their college education (Ebcinoglu & Gersch, 2008; Isserstedt et al., 2010). On average, these students take out 400 Euro per month, which covers about half of their monthly income (Isserstedt et al., 2010). It seems reasonable to assume that for those students who take out money to finance their college degree, the absence of those loan options would reduce their inclination to pursue a higher degree.

The existing evidence suggests that a key problem with loans in Germany is their low acceptance. The vast majority of *Abitur* recipients are not willing to take out loans in addition to those provided by the BAFöG program. Among *Abitur* recipients who decided against pursuing a college degree, 71 percent stated that not wanting to take out loans was an important reason (Heine et al., 2010). In comparison, only 60 percent stated they did not need a college degree for their career goals. Low-SES students seem particularly “loan averse”; despite facing considerably higher unmet financial need, they are not more likely to take out additional loans than more affluent students (Ebcinoglu & Gersch, 2008). Among both groups, only 22 percent of low-SES students considered financing their costs with loans (Ebcinoglu & Gersch, 2008).

Two studies investigated the effects of student loans on college enrollment. Lauer (2002) found that grant offers increased college access while loan offers had a less positive impact on college access decisions. While there is evidence that *Abitur* recipients usually reject student loans, one study found that loans and grants have a similar impact on college access. Baumgartner and Steiner (2005) pursued this question using a reform of the BAFöG systems as a natural experiment. Since 1990, half of the BAFöG was given as a loan and half as a grant, whereas before 1990 it was entirely a loan. Baumgartner and Steiner (2005) found that this reform had no influence on college enrollment rates. Based on this study, it appears that low-income students react similarly to grants and loans. The findings of this study might be of limited use, however, because they are based on enrollment decisions twenty years ago and the student population and the financial situation has changed since then.

Ebcinoglu and Gersch (2008) investigated the reasons students reject private student loans. In a survey of 4700 German college students, they found that on average 57 percent of the students rejected loans because they saw them as hindering investments after college. Twenty-eight percent rejected loans because they were

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concerned they would not be able to repay them, a concern found to be stronger among low-SES students among whom 35 percent rejected loans because they did not think they could pay them back compared to 25 percent of high-SES students.

Taken together, the existing research suggests that private loans are not an effective strategy for making higher education accessible for low-SES students in Germany. German students, especially if they are from low-SES families, are very averse to taking out loans for higher education. However, it is important to note that private student loans were not available prior to 2005, and it seems possible students will become less averse to loans in the future.

To conclude, the existing literature shows that college costs have a strong influence on the enrollment decisions of low-SES high school graduates in Germany. Fourteen percent gave up their plans to enroll in higher education when they had to pay 1,000 Euros in tuition fees per year (Kroth, 2013). Furthermore, concerns about college costs are an important mediator of the relationship between socioeconomic background and college access. They were found to be more important explanations than SES-differences in academic preparation or expectations about the employment prospects of college graduates (Kroth, 2013). The price sensitivity also becomes evident considering the fact that the financial aid program BAFöG positively affects enrollment decisions while loan programs are less effective in supporting low-SES students. The following section will discuss why students of low socioeconomic background in Germany are very price-sensitive.

#### WHY ARE LOW-SES STUDENTS SENSITIVE TO SMALL INCREASES IN COLLEGE COSTS?

The finding that low-SES students in Germany are very sensitive to small increases in college costs is surprising for several reasons. First, by international standards tuition fees are low in Germany. The fees make up merely 10 percent of a students' annual income while in college, which is a much lower fraction than in many other countries.<sup>6</sup> They also make up only a small fraction of the additional lifetime income of 107,000 Euro that college graduates earn compared to *Abitur* graduates who do not complete higher education (Anger & Plünnecke, 2010). Second, the high price sensitivity is surprising because students from low-SES backgrounds on average have access to sufficient financial resources to pay for tuition fees either through additional employment or subsidized federal loans.

The following section will discuss why a substantial proportion of low-SES students give up their college plans because of tuition fees despite the fact that these fees are negligible in comparison to the high returns to education and that they can be financed rather safely with subsidized loans. Four explanations are discussed frequently in the literature: credit constraints, low net monetary benefits, misinformation about net benefits, and loan aversion.

The explanations 'credit constraints', 'low net monetary benefits' and 'misinformation about net benefits' are suggested by a rational choice perspective

such as human capital theory (Becker, 1962; 1993) or sociological rational choice theory (Erikson & Jonsson, 1996). In short, a rational choice perspective assumes that individuals act completely rationally and enroll in higher education if the long-term benefits exceed the costs. Tuition fees should only affect enrollment if students do not have sufficient funds (credit constraints) or receive very low net returns from investment in a college degree, so that even a small price increase turns a college degree to a financial loss. The mechanism ‘loan aversion’ is suggested by a psychological perspective such as behavioral economics. This perspective assumes that psychological mechanisms, such as an aversion to loans, make individuals deviate from rationality and make decisions which do not maximize their lifetime income (Kahnemann & Tversky, 1979; Shefrin & Thaler, 1988).

#### *Credit Constraints*

One potential explanation for why low-SES students are affected by relatively low tuition fees is credit constraint – an argument that is clearly not supported by the empirical evidence. As has been shown in the previous section, students on average have enough financial resources to cover their living expenses with BAFöG, parental support and employment. Furthermore, students who do not have enough financial resources are, with a few exceptions, eligible for the subsidized KFW-loan-program. The loan conditions are very favorable as the maximum loan amount exceeds tuition costs and interest rates are subsidized.

It is likely that some *Abitur* graduates in Germany do not enroll in higher education because they cannot pay their living expenses, mostly due to ineligibility for the BAFöG program or inability to work while attending college. But the vast majority of students who can pay for their college attendance in the absence of tuition fees are able to pay the additional 3,500 Euro for a Bachelor’s degree, for example, by taking out a small loan. Credit constraints are thus not the main reason why 14 percent of low-SES students gave up college enrollment after tuition was introduced. A small group of students might be genuinely credit constrained because they are not eligible for the KFW loan program, for example because they are not a first time enrollees or due to a bad credit rating.

#### *Low Net Monetary Benefit*

A second potential explanation for why low-SES students are sensitive to relatively low tuition fees is that the fees exceed the net monetary benefits of a college degree. If the net monetary benefits from a college degree were below the cost increase (3,500 Euro in tuition fees for a Bachelor’s degree), then even a cost increase of this small amount would turn a college degree from a net benefit to a net loss. Rational choice theories argue that prospective students are deterred by tuition increases if the fees mean they do not benefit financially from a college degree. However, research on the returns to education suggests that the vast majority of low-SES students in Germany

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receive a net monetary benefit from a college degree that far exceed the tuition costs of 3,500 Euros (Lauer & Steiner, 2000; Schnabel & Schnabel, 2002). Low net monetary benefits are, therefore, not a viable explanation for why a considerable share of low-SES students reacts to small cost increases.

Research on the returns to education unanimously shows that the returns from higher education in Germany regardless of socioeconomic background on average are substantial (Anger & Plünnecke, 2010; Lauer & Steiner, 2000). There is heterogeneity and risk in the returns to education, but only very few prospective students expect a net benefit of just 3,500 Euro. In Germany, the discounted additional lifetime income of college graduates (compared to vocational education graduates with *Abitur*) minus the direct and indirect college costs on average is 107,000 Euro (Anger & Plünnecke, 2010).

A few factors might lower the returns to a college degree for low-SES students. First, low-SES students face higher costs because they receive less financial support from their parents and need to pay interest on loans. Second, the monetary benefits from a college degree are less certain for low-SES students because they are less likely to successfully complete a college degree (Ulrich, Hutzsch, Schreiber, Sommer, Besuch, 2009). Third, the risks and the negative consequences of failing in higher education are higher for low-SES students because they often cannot rely on the financial support of their parents if they fail to complete their degree. On the other hand, two factors might lead to higher returns to education for low-SES students. These are the shorter time to degree and the lower income prospects without a college degree compared to high-SES students (Anger & Plünnecke, 2010; Schnabel & Schnabel, 2002). The latter two factors seem to predominate. Empirical data suggest that returns to education are 3 percentage points higher for students of little parental education than for their peers whose parents have a college degree (Schnabel & Schnabel, 2002). U.S. research also suggests that students of low parental education receive higher or as high returns from higher education as their peers with high parental education (Ashenfelter & Rouse, 1998; Brand & Xie, 2010). To conclude, the existing evidence suggests that the vast majority of low-SES students in Germany receive net monetary returns from a college degree that is higher than 3,500 Euro. Low net monetary benefits are not the main explanation for why a considerable share of low-SES students gives up their college plans because of tuition fees.

#### *Misinformation about the Net Benefits of a College Degree*

A third potential explanation for the price-sensitivity among low-SES students is that low-SES students are misinformed or underestimate either their monetary gains from a college degree or their ability to graduate successfully. If low-SES students expected their monetary gains from a college degree would be 3,500 Euro, then a cost increase of this amount would turn a college degree to a net loss and might lead them to give up their college plans. However, the empirical evidence suggests that

the vast majority of low-SES students in Germany are reasonably well informed and neither underestimate the monetary benefits of a college degree nor their possibilities for successfully completing a college degree. Two studies based on different data sources found that low-SES students, just like their high-SES peers, expect that college graduates have better job prospects than graduates from vocational training programs (Becker & Hecken, 2009a; Schindler & Reimer, 2010).

Similarly, low-SES students do not seem to underestimate their abilities to succeed in higher education. Students whose parents have little education are as likely as high SES students to cite uncertainty about their abilities as a reason for foregoing a college degree. In both groups, 18 percent of the students stated that they do not pursue higher education because they are doubtful about their abilities (author's calculations).<sup>7</sup> Given that low SES students on average have a lower probability of graduating from higher education, it seems they are not underestimating their academic abilities compared to students with a high SES family background.

Overall, there is little evidence that misinformation about the benefits of a college degree or about the abilities to succeed in higher education is able to explain the high cost-sensitivity among low-SES students.

#### *Loan Aversion*

A fourth potential explanation for why low-SES students are sensitive to relatively low tuition fees is that they are averse to taking out loans. As the overview about students' budget in [Table 1](#) shows, low-SES students on average need to take out a loan in the amount of 3,500 Euro to pay for tuition fees because they (on average) cannot finance the fees with parental support or employment. If low-SES students were averse to loans, they would lack the necessary financial resources to pay tuition fees and might forgo higher education as a consequence.

A rational choice perspective suggests that loan aversion should not be a concern because it is rational for students to take out a loan if necessary. A student loan in all likelihood allows students to achieve a higher income over their lifetime. In the unlikely case that students do not achieve a higher income with a college degree, the consequences of having a loan in the amount of 3,500 Euro are not very grave as interest rates are low and repayment can be deferred. Not finding a higher paying job with a college degree or failing in college results in a substantial financial loss because students have lost forgone income and fees and not received benefits, but having a loan in the amount of 3,500 Euros objectively worsens the situation only marginally.

Theories based on psychological concepts suggest, however, that low-SES students might deviate from rationality and be averse to loans even though loans allow them to increase their income in the long run. Behavioral economics suggests individuals are averse to loans because they experience displeasure in spending money they have not earned yet (Shefrin & Thaler, 1988; Thaler, 1999). Individuals

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are expected to engage in ‘mental accounting’ and experience more displeasure from spending from the ‘future income account’ than from current assets.

The empirical evidence suggests that, in fact, low-SES students in Germany are averse to taking out loans. As described in the second section, only 5 to 6 percent of low-SES students use loans outside the BAFöG program to finance their college education (Ebcinoglu & Gersch, 2008; Isserstedt et al., 2010). This percentage is no higher in states with tuition fees. Low-SES students seem particularly averse to loans. Despite facing higher unmet financial need, they are not more likely to take out loans than more affluent students (Ebcinoglu & Gersch, 2008). Furthermore, only 22 percent of them consider financing their costs with loans (Ebcinoglu & Gersch, 2008). Survey results also underline the negative attitude of low-SES students towards loans. Among *Abitur* recipients who decided against pursuing a college degree, 71 percent of them stated that not wanting to take out loans was a very important reason for forgoing a college education (Heine et al., 2010). Thirty-five percent of them reject loans because they did not think they could pay them back (Ebcinoglu & Gersch, 2008).

The empirical research thus shows that low-SES students in Germany are averse to taking out loans beyond a level that is rational. Displeasure at spending money not earned yet, as suggested by behavioral economics, is one plausible explanation for students’ loan aversion. It thus seems likely that a strong aversion towards loans is an important explanation for why a considerable part of low-SES students are affected by college costs despite the fact that these costs are negligible in comparison to the long-term monetary returns from education.

#### CONCLUSION

This chapter reviewed the literature about the effects of college costs and financial aid on students’ college enrollment decisions in the context of a financing system of comparatively low private costs and generous financial aid in Germany. The empirical evidence strongly suggests that costs and, in particular, tuition fees have an important influence on the decision to pursue a college degree for low-SES students in Germany. The federal financial aid system – BAFöG – has a profound stimulating effect on high school graduates’ inclination towards college education. Costs thus seem to be partly responsible for the stark social disparities in college access in Germany. The strong influence of costs and financial incentives is somewhat surprising from a rational choice perspective given that college costs are very low in comparison to the returns from education and subsidized loans are available.

The chapter further inquired why students of low socioeconomic background are sensitive to college costs despite a generally generous funding system. A review of the empirical literature showed that credit constraints, low monetary net benefits, and misinformation are not important explanations for the high cost-sensitivity among low-SES students. While there are exceptions, most students have sufficient funds and are aware of the monetary opportunities a college degree offers them.

## THE EFFECTS OF COLLEGE COST AND FINANCIAL AID IN GERMANY

Loan aversion is arguably a more important explanation for the high cost sensitivity among low-SES students in Germany. The amount of money students need to borrow for a college degree is relatively small, yet without a loan even a small amount of unmet need can put a college education out of reach for a sizable share of low-SES students in Germany.

### NOTES

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- <sup>2</sup> Calculation based on Isserstedt et al. (2010).
- <sup>3</sup> Most research studies the effect of costs on students of low parental education or on students of low social class. The term students of low socioeconomic status (low-SES) is used here as a collective name when this research is referred to in general. When I refer to a specific study, I will indicate whether the study relates to students of low parental education or of low social class.
- <sup>4</sup> This is a decline in enrollment six months after graduation from high school relative to states which did not introduce tuition fees.
- <sup>5</sup> Currently (July 2012) only Bavaria and Lower Saxony charge tuition fees for public higher education.
- <sup>6</sup> Author's calculations based on an estimated monthly income of low-SES students of 783 euros (Isserstedt et al., 2010).
- <sup>7</sup> Calculations are based on the survey of *Abitur* graduates of the year 2008 conducted by Higher Education Systems, Hannover.

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