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# Identifying the Information Gap: Measuring the Role of Misperceptions in Student Aid Non-Take-up

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## Abstract

This paper investigates the role of misperceptions in the non-take-up for the means-tested federal student aid/ loan combination in Germany using a dataset of 22,000 students collected by the authors in 2023. Using the self-reported parents' income, we simulated the student aid amounts. A Probit regression on non-take-up shows significant results for age, migratory background, living with parents, and acquaintances receiving BAföG which had the same effect directions but were not all significant in prior studies. Beyond these causes, we show other student grants and debt aversion as significant. For the first time, the central role played by misperceptions of entitlement and aid conditions is presented as we show a majority of non-take-up students do not believe that they are eligible. We show this group to significantly underestimate the income required to be eligible while non-take-up students who consciously do not take up student aid do not. The main non-take-up reasons reported by the latter group are application effort and debt aversion.

**Keywords:** Non-take-up, Federal student aid, Means-tested benefits, Educational mobility

**JEL-Classification:** I22; I23; I24; I28

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# 1. Introduction

Can you imagine that approximately two-fifths of eligible students reject free money of up to 30,000 euros from the state? This is what Herber and Kalinowski (2019) and Fidan and Manger (2022) have shown for federal student aid in Germany (BAföG). These students are offered monthly payments of up to 934 euros during their studies. 50 % of this is an interest-free loan, of which a maximum of 10,010 euros has to be repaid. A back-of-the-envelope calculation shows that a bachelor student is already forgoing up to 23,614 euros<sup>3</sup> of free money. This economic puzzle of why this happens drives the interest in the non-take-up of student aid.

Furthermore, research in the area of student aid non-take-up is important for at least three reasons: First, students not having enough resources can lead them to not choose their optimal level of education, which in turn, can have negative effects on society (See Dynarski, Page and Scott-Clayton (2022) for a thorough overview). More concretely prior research has shown that forgoing student aid during a university education leads to prolonged studying (Avdic and Gartell, 2015), lower grades (Callender, 2008; Stinebrickner and Stinebrickner, 2003), and higher dropout rates ((Triventi, 2014) provides an extensive overview). Glocker (2011) shows that this is also the case in Germany. All in all, forgoing student aid leads to a decline in the long-term economic outcomes of students (Bettinger *et al.*, 2019). Second, understanding why students' non-utilization of student aid could explain why enrolments have a low elasticity to the amount of aid offered in industrialized countries (Dynarski, 2002; Rubin, 2011; Steiner and Wrohlich, 2012). Third, understanding the non-take-up of student aid has relevance for policymakers looking to anticipate the costs of reforms. As shown by Wiemers (2015) an overestimation of potential caseloads can lead to exaggeration of expected costs. This may lead to reforms being reduced in size or not being implemented in the first place, which in turn is not optimal for society.

The international literature shows the main drivers of non-take-up of student aid and social benefits more generally, to be unawareness about eligibility and transaction costs (Currie, 2006; Eurofound, 2015; Konijn, Visser and Zumbuehl, 2023). Student aid councillors prescribe this to the student's misperception of the amount of income their parents are allowed to earn (McKinney and Roberts, 2012). For student loans debt- and risk-aversion also play a significant role (Cadena and Keys, 2013; Cho, Xu and Kiss, 2015; Oosterbeek and van den Broek, 2009). Within Germany, research on the non-take-up of BAföG has been mainly descriptive (Kroher *et al.*, 2023). Exceptions are microsimulations

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<sup>3</sup> 934 Euros \* 12 Months \* 3 Years – 10.010 euro debt maximum

that estimate the non-take-up rate of the BAföG to be between 40% and 67 % (Fidan and Manger, 2022; Herber and Kalinowski, 2019). They show that the level of benefits, information constraints about BAföG and social benefits, in general, play a significant role. Fidan and Manger (2022) show that information constraints have a particularly significant negative effect on students from lower-income families.

This study contributes to the literature in three areas: First, it adds to the literature on misperceptions of social benefits and student aid by showing the extent and kinds of misperceptions in student aid. Second, by setting up a new dataset and a detailed microsimulation we are able to extend the previous literature on the determinants of student aid non-take-up. Third, it contributes to the literature on the non-take-up of social benefits by showing that the main reasons for not applying, given by students that have never applied for BAföG but correctly believe to be eligible, are complexity/administrative costs, debt aversion, and negative experiences.

Our research shows these main findings: First, our estimation results show the significant effect of misperceptions of entitlement and aid conditions on non-take-up as a majority of non-take-up students do not believe that they are eligible which has only been presumed by experts in previous studies. Second, we show significant negative effects of debt aversion as well as students living with their parents as the positive effects of migration background on take-up that were partially insignificant in the previous literature. Third, within the small group that has never applied for BAföG but correctly believes to be eligible application effort and debt aversion are the main non-take-up-reasons given, whereby this is possibly driven by their misperception.

This paper is organized as follows: Section 2 shows the literature on the extent of determinants of non-take-up and Section 3 gives an overview of the way BAföG is structured and how it has developed in the past years; Section 4 goes over the main reasons for non-take-up of social benefits in general and student aid in particular. Sections 5 and 6 describe our microsimulation, regression models, data, and variable construction. We then present first robustness checks in section 8 and our results in section 7. We end by discussing our result and presenting our conclusion.

## **2. Literature on non-take-up**

### **2.1. Social benefits**

The literature on the determinants of social benefits is wide-ranging and the topic has been worked on for many years (For an overview see Ko and Moffitt (2022)). Here follows a short overview of these determinants. First of all, the level and duration of a benefit that would be paid to an individual drives take-up. Together these findings are used to argue that the degree of needs which is strongly correlated

with take-up (Riphahn (2001); Whelan (2010); Bruckmeier and Wiemers (2012)). However, the inverse relationship between the amount of benefits and non-take-up has been called into question by studies of the lowest income groups, where it has been shown that the relationship does not hold (Tempelman and Houkes-Hommes, 2016).

The idea that there is a social stigma plays a role in the non-take-up of social benefits has been discussed for many decades (see Moffitt (1983)) and a review of non-take-up literature by Andrade (2002) goes as far as to say that “there is some evidence that the psychological cost of claiming benefits, also known as welfare stigma, is probably the main determinant of low take-up rates”.

Riphahn (2001) finds a negative effect of the application costs on the readiness of people to apply for German social assistance. Fuchs *et al.* (2020) find that simplifying the application process led (among others) to a reduction of non-take-up.

Eurofound (2015) carried together the results from several studies that asked eligible nonrecipients why they did not apply and unawareness about eligibility with “lack of knowledge” was the most common reason given. More broadly this can be described as information costs that represent a wide range of reasons why people do not apply for a social benefit. The core is the time and effort that a person has to bring up to obtain the knowledge required to find out about a social benefit and then understand if one is eligible for it. Daponte, Sanders and Taylor (1999) found that families whose benefits are high spend more time acquiring information on the programs than families whose potential benefits are low, thereby making the amount of information about the program endogenous. This information has been used in experiments to show that reminding people that they are eligible raises take-up (Armour, 2018); (Finkelstein and Notowidigdo, 2019).

## **2.2. Student aid/loans**

In recent years, non-take-up of (means-tested) student aid and government-provided student loans gained growing attention in the literature.<sup>4</sup> Using a microsimulation based on German survey data Herber and Kalinowski (2019) and Fidan and Manger (2022) estimate the non-take-up rate of the BAföG to be between 40% and 67 %. Using administrative data in the Netherlands Konijn, Visser and Zumbuehl (2023) find the non-take-up rate for a needs-based grant to be 24 %. In the United States Bird and Castleman (2016) use survey data to study students receiving a need-based grant (Pell Grant) in their first and second year of studies. They find that of students with good grades and thus good chances to receive a renewal, 10 % fail to resubmit their FAFSA application in the second year.

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<sup>4</sup> See Dynarski et al. 2023 give a thorough overview

Bettinger *et al.* (2012) show in an RCT that providing information together with assistance in filling out the forms with the parents of the students had the greatest effects on the take-up of the FAFSA.

Research around the student grant reform in the Netherlands in the year 2015 finds the non-take-up rate to be highest among students who come from social groups that are overall less likely to receive financial aid and that information costs may be a key determinant of non-take-up. More generally, “a lack of understanding or knowledge about the eligibility and/or the application procedure play[s] a role in explaining” non-take-up of student aid (Konijn, Visser and Zumbuehl, 2023). This lack of knowledge is also the reason that most student aid councillors gave, that were asked what they saw as the main reason for non-take-up. To be precise they state “that students do not think they will qualify because they incorrectly assume their parents make too much money” (McKinney and Roberts, 2012). First signs that this may also be the case in BAföG are brought forward by Fidan and Manger (2022) that non-take-up increases with parental income and attribute this to possibly be due to misperceptions about eligibility.

BAföG represents a special case of the non-take-up literature, as it is objectively more generous than student loan programs from the United States and the United Kingdom due to 50 % of BAföG being a grant and the rest an interest-free loan. Yet some students may not want to incur debt during their studies at all as previous literature has shown, that students forgo loans as not bear the psychological costs of incurring debt without having a certain future (Booij, Leuven and Oosterbeek, 2008; Cho, Xu and Kiss, 2015; Field, 2009; Oosterbeek and van den Broek, 2009). BAföG gives an interesting insight into how strong debt aversion in students can be when they forgo a 50 % grant. For interest-free loans, Cadena and Keys (2013) have also shown, that some students who were offered a Stafford loan were inclined to decline the loan to limit overspending if they lacked self-control and regarded different assets as nonfungible (e.g. mental accounting). Herber and Kalinowski (2019) show this to hold true for very impulsive and very impatient students in the non-take-up of BAföG.

### **2.3. Student Aid in Germany**

Most of the literature in the field of BAföG-non-take-up remains descriptive and uses answers from all non-BAföG-receiving students as it is not possible to identify who is eligible. The most comprehensive survey on reasons for non-take-up of student aid in Germany is the Sozialerhebung (Kroher *et al.*, 2023). Of the students that have never applied for student aid 74 % stated that they did not apply for or receive BAföG due to the income of their parents or partners being too high, followed by the height of their own income or wealth with 30 %. The third most sighted reason was a reluctance to take up any debt (22 %). In the previous survey of 2016, it was found that for students with lower educational backgrounds, the percentage rose from 25 % to 37 % (Middendorff *et al.*, 2017). Using the

Sozialerhebung it is not possible to perform a means test and thereby estimate a non-take-up rate, as there is no information on the income of parents, therefore this literature remains descriptive. Exceptions to the descriptive literature are microsimulations that use the German Socio-Economic Panel. Herber and Kalinowski (2019) estimate the non-take-up rate to be 40%. They show that information constraints about BAföG and social benefits in general (modelled on siblings receiving BAföG and parents' history of social benefits) play a significant role and Fidan and Manger (2022) show that they have a particularly significant negative effect on students from lower-income families. A more nuanced estimation of information constraints and non-take-up determinants is not possible, due to a lack of BAföG-related questions.

The access to information on BAföG is open for all to access and many websites and institutions inform about it. However, experiments have shown that information treatments about funding and benefits have positive effects on college students' intentions (in Germany) to enrol in higher education (Peter, Spieß and Zambre, 2021; Peter and Zambre, 2017). This seems to show that information problems seem to persist.

### **3. Background**

The German student aid scheme was introduced in the year 1971 as part of the law named Bundesausbildungsförderungsgesetz (Federal Training Assistance Act) which also gives it its name, BAföG. It aims to ensure equal educational opportunities for all German students (Deutscher Bundestag, 2023). However, only 11% of students receive BAföG with a decreasing tendency (BAföG-Statistik 2024).

In the year 2023, the maximum amount of BAföG (including health insurance) for single childless students who are not living with their parents was 934 euros per month. For students, BAföG consists to 50 % of a grant and 50 % of an interest-free loan. The maximum loan amount that must be repaid is 10,010 euros, with repayments beginning five years after the end of the first degree. Different deferral options are possible if the income is insufficient at the point of repayment and after a maximum of 20 years, the remaining loan is forgiven.

To qualify for BAföG students must be pursuing an initial degree at a tertiary education institution and meet specific nationality or residency prerequisites. Furthermore, they are not allowed to be over the age of 45 when beginning their degree and must be within their respective standard period of study (Regelstudienzeit). Students falling within this group are called institutionally eligible.

The information on BAföG is freely available and the students can apply for BAföG locally and digitally. Based on the information in the application the needs of the student are determined using fixed rates

for base needs and living circumstances as well as additional financial necessities e.g. grants are possible for their own children. Students are permitted to earn 330 euros net income per month and own wealth of up to 15,000 euros<sup>5</sup>. Any additional money is deducted from the student's needs.

As BAföG is targeted at students whose parents cannot fulfil their legal obligation to grant child support until the child has obtained its first professional qualification, the primary means test is done on the parent's income. After accounting for a wide range of economic and social circumstances the amount of child support payable by the parents is determined and deducted from the students' needs.

In further steps deductions for the student's own income and wealth as well as their spouse's income take place.

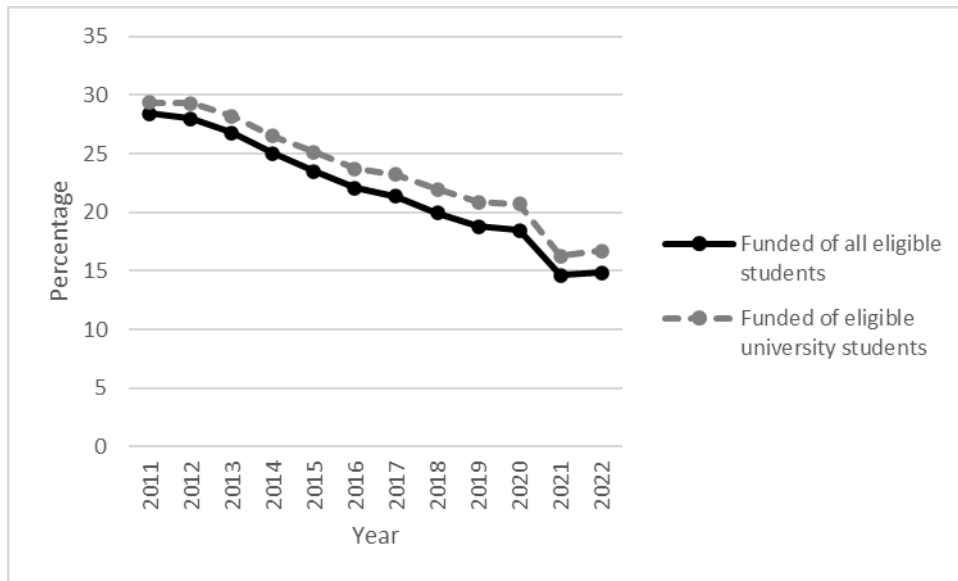
The final BAföG amounts paid out on average in the year 2023 were 611 euros. In the year 2023, BAföG was paid out to a monthly average of 335,000 students with the scheme costing 1.3 billion euros in grant payments and 1.2 billion euros in granted loans (Destatis, 2023). 11.7 % of all students (2.87 million) in higher education received BAföG. To correct for aspects such as the growing number of international students the average number of BAföG-recipients can be divided by the institutionally eligible students. These are 2.25 million students and therefore the rate of BAföG-recipients rises to 14.9 % (Destatis, 2023; Deutscher Bundestag, 2023).

Since the year 1996, no larger reform has taken place. In this year BAföG was changed from a full loan to 50 % grant (18. BAföGÄndG 1996). Only minor amendments have made sure that the levels of BAföG paid to each student rose roughly with inflation and the BAföG became incrementally more attractive. Since 2011, both participation rates have been dropping and no reform of the BAföG-rates (25. BAföGÄndG 2014; 26. BAföGÄndG 2019; 27. BAföGÄndG 2022) has managed to reverse this decline. Figure 1 shows the participation rates for all students and university students in particular, as these are the focus of this paper.

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<sup>5</sup> For students above an age of 30 the wealth threshold is 45,000 Euro.





**Figure 1: Funded students as a percentage of formally eligible students for university students and all students in higher education**

Notes: Own figure based on statistics provided by German Bundestag (2020) and German Bundestag (2023).

The main effect seen in Figure 1 is after the year 2020 where changes in the BAföG-regulations to accommodate for complications due to the Covid-19 pandemic led to more students receiving BAföG for longer. At the end of 2022, a greater reform was introduced which raised the allowances for parents' income and students' wealth significantly, as well as extending the age limit.

#### 4. Possible reasons for non-take-up

When following standard economic theory, the decision of a rational, utility-maximizing student, on whether to take up BAföG or not, is clear. The student would take it. The loan is interest-free, and the repayment is capped at 10,010 euros. This loan is matched at least 1:1 with a grant. This amounts to thousands of euros of risk-free income for which the price is applying for BAföG. Such the expectation for non-take-up would be 0%. As has been shown in Herber and Kalinowski (2019) and Fidan and Manger (2022) this is not the case. Therefore, there must be other reasons that lead to the non-take-up of BAföG.

##### Standard determinants

Student aid is different from most kinds of social benefits as the receiving party is investing in their human capital by obtaining a university degree. Therefore, the standard theory of non-take-up does not always apply as aspects such as stigma and expected duration differ from standard social benefits. For this, we analyse standard determinants of non-take-up from a student aid perspective.

Stigma has been shown to hinder eligible people from taking up their right to a social benefit (Riphahn, 2001). However, as large representative surveys have continually shown, stigma does not play a role (Kroher *et al.*, 2023; Middendorff *et al.*, 2017). This can also be shown in our data, where overall 4 % of non-BAföG-recipients select stigma as a reason for not applying for Bafög, and even in the group that believes to be eligible this rises to only 9 %, see Table 5 for a full list of reasons provided by students for not applying for Bafög.

Centrepiece to the determinants of non-take-up is the expected duration (Riphahn, 2001). This has also been shown to hold in the area of Bafög (Herber and Kalinowski, 2019). We include the level of simulated Bafög, age, and semester of studies as controls.

To control for the needs of the student we follow the literature (Bruckmeier and Wiemers, 2012; Whelan, 2010) among others) and use the simulated potential benefit level before the deduction of their own income as a proxy for their needs. This simulated Bafög amount is expected to decrease non-take-up. Additionally, the parents' transfers lower the need of a student for additional support. While previous literature had to implicitly control for this via the parents income (Fidan and Manger, 2022; Herber and Kalinowski, 2019) this paper uses the proxy via the student's alimony from their parents, as this also controls for the degree that the parents are prepared to pay money to the children. We expect the non-take-up to decline in the payments of the parents.

When students live with their parents, they do not always fully bear the cost of accommodation. Furthermore, they do not bear additional costs that may be incurred by living on your own, which are not fully accounted for by the Bafög needs calculation. The clearest one of these is the rent which could be higher than the fixed amount set aside for rent in Bafög. "Living with their parents" is therefore included as a dummy as it has also been shown to be significant in previous studies (Fidan and Manger, 2022; Herber and Kalinowski, 2019). We expect non-take-up to be higher in this group.

Income from other student grants can alleviate the need for additional funding to a great extent. In the Bafög calculation, 300 euros of income from other grants does not lead to a reduction in the Bafög amount paid. However, the amount of the grant above this value is deducted from the Bafög payment. As the simulated Bafög amount for all in the sample is still positive it shows that non-take-up students are still leaving additional money on the table if they are in the non-take-up group. This can be due to their needs being adequately covered or them thinking that the grant has made them ineligible for Bafög cannot be clearly defined, both would however be expected to lead to a higher non-take-up by students receiving grant payments. Similar to the variable "other student grants" having completed vocational training prior to your university studies has been shown to lead to higher non-take-up (Herber and Kalinowski, 2019). Therefore, we also include this in our regression.

Parents having an academic degree can lead to the student having more assistance in finding their way around in university life. Furthermore, they may have assistance in the filling out of complex application forms (Herber and Kalinowski, 2019).

Students living in East Germany may have a different relation to state aid as their families may have grown up under communism. Prior literature suspected the non-take-up to be high due to rents being lower in East Germany (Fidan and Manger, 2022; Herber and Kalinowski, 2019). The expected effect is therefore unclear.

Debt aversion is a clear candidate for non-take-up of BAföG as it includes a 50 % loan. Cadena and Keys (2013) have shown debt-averse students to be less likely to take up loans. We expect to see similar results.

### **Knowledge and Misperceptions of BAföG**

Daponte, Sanders and Taylor (1999) show that not knowing that a social assistance program exists can be a driver of non-take-up. This may hold true for other more specialised social assistance programs, however, as is the case with stigma this does not hold true for BAföG. Studies have shown, that within the student population, the existence of BAföG itself is well known. Herber and Kalinowski (2019) show that having a sibling is a strong and significant factor in take-up. In this case, the sibling signals to the sibling that they are eligible and can help them in filling out relevant forms. To control for this influence, we include the question of knowing a BAföG-recipient. This can be expected to have similar but not as strong effects.

Expert interviews have shown that perceived ineligibility due a misperception of income thresholds is thought to be a main driver of non-take-up in student aid. Furthermore, experiments show qualitatively, that information treatments have an effect. Yet most do not have the size that it can be differentiated, what specific piece of information the treatment had the greatest effect. In BAföG we see three main areas of possible misperception (The detailed construction of the variables is presented in section 6.2).

1. Eligibility: A student may know of BAföG yet misperceive the eligibility criteria. These are described in detail in section 2. We split eligibility into two areas. First, formal criteria (e.g. within the correct study period or university). Here we intend to perform robustness checks by using open questions of “Other reasons for non-take-up”, however, the date is still being processed. Second, the group that believe not to be eligible due to financial criteria (e.g. own or parents’ income is too high even though it is not). Here we include the amount a student underestimates how much parents are allowed to earn for their child to receive a certain amount of BAföG. We hypothesise that non-take-up and the misconception of not being

eligible will be higher the greater the level of misconception. However, for students who believe to be eligible, we hypothesise that they may not differ from BAföG-recipients in their estimated amounts, as they correctly perceive themselves as eligible. To control for a misperception of income levels, we also use a question in which the participants estimated students BAföG when given a certain income level. We hypothesise that the greater this estimated amount deviates from the correct value, the greater non-take-up will be. We expect this effect to be exponential.

2. Generosity: The amount of BAföG that a student expects can be received influences the incentive that the student perceives to apply for BAföG. The lower the students estimate the amount the higher we expect the chances of non-take-up to be. We expect this effect to be exponential. However, for students who believe to be eligible, the expected effect is unclear.
3. Repayment: A deterrent from taking up BAföG is an overestimation of the amount that has to be repaid. We expect three levels of misperception. First, is no misperception. The student knows about the maximum repayment of 10,010 euros. Second, the student knows that only fifty percent of BAföG has to be repaid (possibly with interest), but not the maximum. Third, a full misperception of the repayment is the amount being more than half. We expect non-take-up to be stronger with each level of misperception.

**Table 1: Overview of Variables and expected effects on non-take-up**

	Non-take-up		
	Overall	believers	non-believers
<b><u>Sociodemographic Background</u></b>			
Age of Individual (Standardized)	+	+	+
Female (0/1)	?	?	?
Student has direct migration Background (0/1)	-	-	-
Live in east Germany (0/1)	-	-	-
Acquaintances receive BAföG (0/1)	-	-	-
Semester (Standardized)	+	+	+
<b><u>Degree of needs</u></b>			
Simulated BAföG (per 100 €)	-	-	-
Lives with parents (0/1)	+	+	+
Alimony Parents (€; Standardized)	-	-	-
Prior vocational Training (0/1)	-	-	-
Other grant (0/1)	-	-	-
<b><u>Parent controls</u></b>			
At least one parent has a collage degree (0/1)	-	-	-
<b><u>Behavioural Preferences</u></b>			
Debt affinity (Scale 0-10)	-	?	-
<b><u>Estimation of survey examples</u></b>			
Maximum Amount BAföG deviation (Cont. €/ 100)	+	?	+
Maximum Amount BAföG deviation (Cont. €/ 100 squared)	-	?	-
Amount to repay (Cont. €/ 1.000)	+	+	+
Amount for student deviation (Cont. €/ 100)	-	?	-
Amount for student deviation (Cont. €/ 100 squared)	+	?	+
Parents' income (Cat. of 15.000 €)	-	?	-

Note: The sign for each variable indicates the expected effect. + denotes that a higher non-take-up is expected for a positive dummy or a higher value. - denotes the opposite. A ? represents expectation that the overall effect will be ambiguous.

## 5. Methodology

### 5.1. Non-take-up simulation

Non-take-up is defined as a person who would receive a positive BAföG-amount if they applied but they have not done so. Eligibility for BAföG is not observable in any data set, therefore the amount of BAföG each student has to be simulated. This is done in our microsimulation model that reflects the full means test performed within the BAföG-application process as described in section 3 and in further detail in section 6.1.2.

In the final step of setting up the dataset, the simulated BAföG-amounts are compared to the directly observed students reported BAföG-income. Following Frick and Groh-Samberg (2007), Bruckmeier *et al.* (2013), Harnisch (2019) and Herber and Kalinowski (2019) this comparison leads to two main groups of students and four sub-groups. The two main groups are eligible and ineligible, with students that have a positive simulated BAföG-amount being classified as eligible. The classification of the four subgroups depends on the observed BAföG-income: (1) Take-up, students who are eligible and have reported to have BAföG-income; (2) non-take-up, students who are eligible but report to have no BAföG-income, (3) misclassified or beta error, students that have a BAföG-amount of zero but report to have BAföG-income, (4) ineligible, student that are ineligible and report no BAföG-income.

**Table 2: Classification of Non-take-up and Beta Error**

		Eligibility (simulated)	
		yes = 1	no = 0
Take-up (Observed)	yes = 1	Take-up	<b>Beta Error</b>
	no = 0	<b>Non-take-up</b>	Ineligible

Source: Own representation based on Harnisch (2019)

Effects that could inflate non-take-up are the possibility that administrators may wrongfully decline an application (van Oorschot, 1991) and an underreporting due to stigmatization as discussed by Harnisch (2019). Especially the latter is not to be expected in this study, as the survey took part in an anonymous online survey.

The groups of take-up and non-take-up are testable as the BAföG-income is reported and can be compared to the results of the simulation. Therefore, these groups need no further discussion. The group of ineligibles is defined by the simulation. All students with a BAföG-income of zero could possibly be eligible, however, the actual eligibility is not observed in the data. Therefore, the best estimation of eligibility is the microsimulation used in this paper. How good this estimation is, can be tested by the last group and the beta error identified for that group, which is discussed in the following.

The beta error rate (BER) is defined as the group of ineligible students that report a take-up divided by the full group of take-up students (Frick and Groh-Samberg, 2007; Harnisch, 2019; Herber and Kalinowski, 2019).

$$\text{Beta Error Rate (BER)} = \frac{\text{Take-Up} = 1 \ \& \ \text{Eligibility} = 0}{\text{Take-Up} = 1}$$

Primarily this is seen as a measure of the quality of the simulation used. In a setting where the administrative processes were without error and had the correct information of the students applying

the simulated BAföG should always be positive when BAföG-income is reported. The consequence would be a beta error of zero. However, the application process is not flawless. As van Oorschot (1991) and Frick and Groh-Samberg (2007) discuss the beta error could be interpreted as revealing the overconsumption and fraud by the students. However, they see this effect as being minimal. The use of survey data also provides an error due to inaccuracies in the reported amounts of income. In the used survey data, there is an additional explanation for the beta error. The students estimate their parents' income. Especially in the case of eligibility for a low actual BAföG-amount, an estimation error of the student of a few hundred euros is enough to misclassify an ineligible student as eligible or vice versa. Furthermore, additional factors such as the disabilities of siblings are not reported in the survey. On the other hand, the beta error doubles as a test for the quality of estimated parents' income.

## **5.2. Base model**

Our models treat the decision of non-take-up as a binary decision, where the outcome is one if the utility of take-up is greater than the disutility experienced from the same. This follows the approach set forward by Moffitt (1983) and Blundell, Fry and Walker (1988) for non-take-up in general and Herber and Kalinowski (2019) for BAföG. Our base model is a Probit regression on the outcome variable of non-take-up that controls for the variables described in section 4 and additionally for age (centred within the relevant sample) and gender<sup>6</sup> of the student to account for possible heterogeneity in this regard. The full list of variables and their expected effect is listed in Table 1.

# **6. Data and variable construction**

## **6.1. Dataset**

### **6.1.1. Data collection**

The basis of this paper is a dataset of 22,243 German university students who participated in an incentivized online survey in the year 2023. The survey was jointly conducted by the authors and their respective institutions which are the Max Planck Institute for Research on Collective Goods and Fraunhofer Institute for Applied Information Technology FIT. Within the survey, the students answered questions on their socioeconomic and educational background, including self-assessed income and parent's socioeconomic status. Additionally, participants answered questions on their understanding of BAföG and their reasons for applying or not.

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<sup>6</sup> Dummy variable for Female was chosen leading to 340 "Other" being dropped.

The survey was conducted in two rounds. The first took round place in May of 2023. Here the students were contacted via three channels: First, email lists containing all students of three universities. Second, email lists and social media of student unions and councils. Third, email lists of prior participants of the behavioural economics research labs at the Universities Bonn and Cologne. In all settings, the students were offered the chance to win 25 euros. The first round produced a net sample of 22,243 students. 17,921 of these gave their consent to be recontacted. The second round took place in November and December 2023 where 10,510 students took part. In the second round, the students were contacted via their desired email address and offered the chance to win 50 euros.

### **6.1.2. Sample selection and simulation**

The sample used was set up by performing the following three steps. First all formally not eligible students were dropped. These students include but are not limited to internationals, long-term students and students that exceed the age restriction for BAföG. This reduced the number of observations from 22,243 to 16,766. Then 611 students receiving other forms of social benefits or had any other clear reason why they were not eligible for BAföG were dropped. In a final step, all students (1,222) were dropped where relevant variables for performing a means test and simulating the possible BAföG-amount were missing. The missing parents' income did not lead to exclusion from the data set if the student stated that one or both parents had passed away or the student fulfilled the criteria for which the parents' income does not play a role in the student aid calculation. The full sample therefore consists of 16,155. Of these 7,799 participated in the second wave of questioning.

When calculating the amount of student aid aspects are relevant that were not part of the questionnaire. These variables were imputed or selected systematically where necessary. The main case is the imputation of the student's wealth. Whether the student receives health insurance through his parents or not influences the amount of BAföG he is eligible for, therefore it is imputed via the age of the students, as over the age of 25 you are no longer eligible to be covered by the parent health insurance. Additionally, the form of education in which the siblings find themselves is relevant for the calculation of the respective BAföG amount. In the base case, the values were chosen to calculate the aid amount as low as possible.

#### **Base Sample**

The group with the least heterogeneity is students with their first university degree and within the standard study time. For this, we examine the cohort of students in their first to sixth semesters. To filter for differing effects of master students and students with BAföG non depending on their parents were dropped. After the construction of all necessary variables, a usable dataset of 3,588 observations of formally eligible students remain. 1,564 of the sample are BAföG-recipients (44 %). The group of



interest in this paper are the non-BAföG-recipients (66 %) of which 443 are simulated as eligible with a positive BAFöG-amount.

The comparison of simulated BAFöG-amounts to the amounts self-reported by the students. Of the 1,564 of students receiving BAFöG 14,19 % are simulated with a BAFöG-amount of zero. This beta error shows the precision of the simulation.

### **Subgroups of Believers and non-Believers**

The question of non-take-up determinants is dependent on whether the student believes themselves to be eligible. For this, the base group is split into three groups. BAFöG-recipients, and non-take-up-believer (Believers) and non-take-up-non-believers (non-Believers).

## **6.2. Variable construction**

In this work, different kinds of BAFöG-misperceptions are studied. These are the amount of BAFöG they received, the income that parents are allowed to earn for a student to receive a certain amount of BAFöG and the amount of BAFöG that must repaid. The order in which the questions were presented was generated randomly to counter possible dependencies in the questions.

### **Misperceptions and beliefs about eligibility**

To measure the degree of misperception in a certain area, example cases were set up in which a specific family and income situation of a student's family was described. All relevant information for estimating the BAFöG amount of the student in the example e.g. the parents' income, the number of siblings and the living situation of the student, was provided (See appendix 11.2 for the full list of questions). Based on this information the participants had to provide an estimate for the amount of BAFöG the students would receive.

### **Maximum BAFöG for a standard student**

In this question, the students were asked to state the amount of BAFöG a student receiving full BAFöG receives. The correct amount was 812 euros. For non-take-up, it is relevant, if the participant underestimates the amount of BAFöG, as this would discourage the application for BAFöG. Too high estimations may even encourage an application.

### **Debt-repayment**

To measure the misperception of the debt-repayment conditions, the participants were shown an example case of a student and how much BAFöG had been paid during their studies. Here the question was asked how much the student would have to repay, in the case where a monthly repayment option

was chosen. The amount of BAföG received is 30,000 euros which is capped in the repayment at 10,010 euros. Therefore, the higher the amount stated, the higher the misperception.

### **Estimation of BAföG amounts and parents' incomes**

To measure the degree of misperception in the financial eligibility criteria, the participants were shown to examples. In the first example, the amount of BAföG received by the student was provided but the income earned by the parents was not given. This was then estimated by the participants. The answers were sorted into 5 categories on a scale from 1 to 5. With 1 being values below 27,500 euros, the categories being 15,000 euros wide, and the correct answer of 50,000 euros being in category 3.

To give a second measurement of the misperception, the participants were given an example with the parents' income and asked to estimate the students BAföG amount. The misperception is measured by deviation from the correct value of 762 euros. Underestimates of the amount of BAföG, should lead to higher non-take-up, as this would discourage the application for BAföG. Too high estimations may even encourage an application. The effect of misperception is possibly exponential in its effect on non-take up. Therefore, the deviation of the estimated result for 762 euros was added in the quadratic form.

### **Debt aversion**

To estimate the effect of the student's debt aversion the following question was introduced in the survey: "How do you rate yourself: Are you generally a person, who is prepared to take up debt or do you try to avoid debt?". The answers were given on an 11-point Likert scale from 0 "not at all prepared to take up debt" to 10 "very prepared to take up debt". The variable was included as a standardized variable.

### **Eligibility**

Students who did not state to receive BAföG were asked if they perceived themselves as eligible on a scale from 1 [Definitely yes] - 5 [Definitely No]. Three was "Cannot give a clear answer". Categories one and two were put into the group "presumes themselves to be eligible", which will be referred to "Believers" in the following.

### 6.3. Descriptives

Table 3 shows the description of the regression variables.

**Table 3: Descriptive statistics by students' take-up and own eligibility belief**

	Non-Take-Up and BAföG	Non-Take-Up		BAföG	
	Mean	All Mean	non-believers Mean	believers Mean	Mean
<b><u>Sociodemographic Background</u></b>					
Age of Individual	22.1	22.2	22.2	22.0	22.1
Female (0/1)	0.69	0.68	0.68	0.70	0.69
Student has direct migration Background (0/1)	0.08	0.14	0.12	0.22	0.06
Live in east Germany (0/1)	0.31	0.24	0.24	0.23	0.34
Acquaintances receive BAföG (0/1)	0.64	0.47	0.46	0.51	0.69
Semester	3.89	3.72	3.78	3.50	3.94
<b><u>Degree of needs</u></b>					
BAföG (simulated €)	709	621	635	568	737
Lives with parents (0/1)	0.14	0.20	0.18	0.28	0.13
Alimony Parents (€)	200	408	433	315	134
Prior vocational Training (0/1)	0.08	0.06	0.06	0.07	0.09
Other grant (0/1)	0.03	0.08	0.06	0.16	0.02
<b><u>Parent controls</u></b>					
At least one parent has a collage degree (0/1)	0.44	0.62	0.62	0.63	0.39
<b><u>Behavioural Preferences</u></b>					
Debt affinity (Scale 0-10)	2.88	2.67	2.62	2.86	2.95
<b><u>Estimation of survey examples</u></b>					
Maximum Amount BAföG (812 € correct)	817	776	772	794	830
Amount to repay (10.010 € correct)	12,708	15,187	15,519	13,964	11,914
Amount for student (761 € correct)	430	396	380	457	441
Parents' income (50.000 € correct)	47,236	43,887	42,169	50,213	48,308
Observations	2,065	501	394	107	1,564

## 7. Results

In the following section, our results are presented. These are split into three parts. In the first part, we present the results of our baseline regression which compares the group of non-take-up students with the student aid recipients. This embeds our research with previous literature and shows what role misperceptions play on an aggregate level. Part two compares the take-up group with the two non-take-up subgroups of non-believers and believers. This provides insights into how non-take-up believers and non-believers differ from one another. In the third part, we provide first insights into reasons for non-take-up given by non-take-up believers and how they differ from the whole group of students without BAföG.

## 7.1. Base model

Our baseline model results are presented in column 1 of Table 4. The estimation results mostly confirm our hypotheses and expectations.

In the area of socioeconomic background, we find significant results for age, migratory background, student lives in east Germany, acquaintances receiving BAföG and semester. Gender is not significant, which was expected. Age and semester are both a sign of the student being further along in their studies. The duration for which BAföG is still to be received is then shorter.

The determinants of non-take-up in the area of student needs are all statistically significant except for having completed a prior vocational training. Living with their parents, a higher amount of alimony and receiving a different grant, all significantly greater non-take-up. This is in line with expectations. The simulated BAföG amount before the deduction of student income significantly reduces non-take-up.

The dummy variable for at least one parent having completed a degree in higher education counterintuitively shows a significant effect for higher non-take-up. This is not in line with expectations. As expected, debt affinity is significant for the take-up of BAföG.

In the area of misperceptions, we find different effects for the kinds of misperceptions analysed (BAföG eligibility, repayment, and payment criteria). The higher the maximum BAföG amount was estimated be the participant the lower the non-take-up. This points towards non-recipients believing BAföG to be less generous than BAföG-receivers. Also significant was the misperception that BAföG has to be paid back more than the 10,010 euros in the example. This fits to result of the estimation of the BAföG amount, as the more someone expects to have to repay, the worse the offer of the student aid is. The misperceptions of the financial eligibility criteria were only partially significant. This points to an effect of knowledge on BAföG for non-take-up. This is investigated further by comparing students who believe to be eligible and who do not believe to be so, to the BAföG-recipients.

**Table 4: Predicted probability of non-take-up by own eligibility belief**

Dependant variable: Non-take-up = 1	Take-up vs.		
	non-take-up	believers	non-believers
Regressors	odds ratio (SD Error)	odds ratio (SD Error)	odds ratio (SD Error)
<b><u>Sociodemographic Background</u></b>			
Age of Individual (Standardized)	1.503*** (0.123)	1.266* (0.180)	1.503*** (0.130)
Female (0/1)	1.095 (0.208)	1.126 (0.353)	1.075 (0.220)
Live in east Germany (0/1)	0.831** (0.0677)	0.830 (0.109)	0.857* (0.0754)
Acquaintances receive BAföG (0/1)	0.655*** (0.0483)	0.732*** (0.0852)	0.634*** (0.0506)
Semester (Standardized)	0.920** (0.0360)	0.869** (0.0543)	0.956 (0.0408)
<b><u>Degree of needs</u></b>			
Simulated BAföG (per 100 €)	0.968** (0.0125)	1.004 (0.0210)	0.967** (0.0135)
Lives with parents (0/1)	1.681*** (0.170)	2.141*** (0.311)	1.455*** (0.165)
Alimony Parents (€; Standardized)	2.344*** (0.122)	1.754*** (0.140)	2.434*** (0.137)
Prior vocational Training (0/1)	0.792 (0.113)	0.804 (0.192)	0.790 (0.122)
Other grant (0/1)	3.460*** (0.581)	5.107*** (1.085)	2.355*** (0.466)
<b><u>Parent controls</u></b>			
At least one parent has a collage degree (0/1)	1.206*** (0.0695)	1.228** (0.0981)	1.175** (0.0766)
<b><u>Behavioural Preferences</u></b>			
Debt affinity (Scale 0-10; Standardized)	0.916** (0.0327)	0.930 (0.0519)	0.914** (0.0356)
<b><u>Estimation of survey examples</u></b>			
Maximum Amount BAföG deviation (Cont. €/ 100)	0.940** (0.0234)	1.014 (0.0378)	0.924*** (0.0248)
Maximum Amount BAföG deviation (Cont. €/ 100 squared)	1.018*** (0.00586)	1.021** (0.00842)	1.017*** (0.00604)
Amount to repay (Cont. €/ 1.000)	1.036*** (0.00554)	1.019** (0.00857)	1.039*** (0.00581)
Amount for student deviation (Cont. €/ 100)	0.947 (0.0342)	1.038 (0.0784)	0.925** (0.0348)
Amount for student deviation (Cont. €/ 100 squared)	1.006* (0.00339)	0.998 (0.00751)	1.008** (0.00349)
Parents' income (Cat. of 15.000 €)	0.943* (0.00339)	1.068 (0.00751)	0.908*** (0.00349)
Number of obs	2,065	1,671	1,958
Pseudo r-squared	0.3074	0.2523	0.3226

\*\*\* p<.01, \*\* p<.05, \* p<.1

## **7.2. Base model – Believers and non-Believers**

For both regressions of the Believers vs. BAföG-recipients and non-Believers vs. BAföG-recipients, we find the socio-demographic factors to stay generally aligned to our base sample with only the determinant “lives in east Germany” losing its significance for the believers, but the effect direction staying the same.

For the group of the Believers following changes take place: In the area “Degree of Needs” we see that the determinant “Simulated BAföG” becomes fully insignificant and the coefficient changes. This gives the impression that the group of Believers does not react to the amount of BAföG offered them. Furthermore, debt aversion is no longer significant, but the repayment amount is still significant. This points to a misperception of the repayment rules as the knowledge about BAföG in general seems to be better, as the amount of BAföG that can be received has become insignificant. Finally, both questions on the estimation of the BAföG amount and parents’ income in the example are highly insignificant.

For the non-Believers, both questions on the estimation of the BAföG amount and parents’ income in the example have become highly significant. This points to a difference in understanding of the BAföG eligibility criteria when compared with BAföG-recipients.

## **7.3. Evaluation of Reasons for not applying for BAföG**

Table 5 shows the answers given to the question “Please state the reasons why you have not yet submitted a BAföG application for this semester/study year.” In the following table all answers that were “applies fully” and “likely to apply” we coded as 1 and the rest as 0. Eligible non-take-up believers give the reason “Application effort too high” the most, followed closely by debt. Also named often are “Negative experiences among acquaintances” and “Family situation too complex”.

**Table 5: Reasons for not applying for BAföG by simulated eligibility and self-belief to eligible (Base sample)**

	All incl.	Non Eligible		Eligible	
	non-eligible	Non Believers	Believers	Non Believers	Believers
<b>BAföG stigma</b>	0.04	0.03	0.05	0.03	0.09
<b>My parents say: Parental income too high</b>	0.60	0.68	0.19	0.51	0.10
<b>I think: Parental income too high</b>	0.64	0.75	0.16	0.49	0.07
<b>Debts</b>	0.42	0.40	0.54	0.45	0.56
<b>Own income too high</b>	0.20	0.21	0.31	0.11	0.16
<b>Application effort too high</b>	0.41	0.36	0.46	0.51	0.62
<b>Previous education</b>	0.09	0.09	0.04	0.16	0.03
<b>Expected funding amount too low</b>	0.10	0.10	0.03	0.13	0.07
<b>Family situation too complex</b>	0.25	0.23	0.34	0.27	0.35
<b>Disclosure of income information</b>	0.11	0.09	0.11	0.17	0.22
<b>Sufficient support from parents</b>	0.09	0.09	0.08	0.09	0.16
<b>Negative experiences among acquaintances</b>	0.70	0.77	0.51	0.56	0.43
<b>Own assets too high</b>	0.08	0.07	0.05	0.08	0.14
<b>Observations</b>	2171	1574	96	394	107

## 8. Robustness Checks

We employ the following robustness checks:

### Full sample regression

The sample of non-take-up believers is relatively small with 107 observations. This is due to the sample for the base model being restricted by the design of the data collection process. The variables of Migration background, parents' college degrees and debt affinity of the student were only collected in the second wave. Dropping these controls from the regression allows the regression to be performed solely with data from the first wave. We drop these variables and rerun our baseline model. The descriptive statistics for this sample are presented in Appendix 11.1. The regressions in Table 6 show all the variables and controls to remain significant or even to become more significant.

**Table 6 Predicted probability of non-take-up by own eligibility belief (Full Sample)**

Dependant variable: Non-take-up = 1	Take-up vs.		
	non-take-up	believers	non-believers
Regressors	odds ratio (SD Error)	odds ratio (SD Error)	odds ratio (SD Error)
<b><u>Sociodemographic Background</u></b>			
Age of Individual (Standardized)	1.385*** (0.0743)	1.153 (0.102)	1.418*** (0.0804)
Female (0/1)	0.998 (0.0504)	0.928 (0.0731)	1.021 (0.0557)
Lives with parents (0/1)	2.066*** (0.136)	2.890*** (0.288)	1.714*** (0.125)
Live in east Germany (0/1)	0.898** (0.0468)	1.026 (0.0843)	0.868** (0.0489)
Acquaintances receive BAföG (0/1)	0.623*** (0.0295)	0.673*** (0.0505)	0.609*** (0.0310)
Semester (Standardized)	0.888*** (0.0227)	0.841*** (0.0346)	0.913*** (0.0252)
<b><u>Degree of needs</u></b>			
BAföG before student deductions (simulated €)	1.001*** (9.42e-05)	1.001*** (0.000176)	1.001*** (9.90e-05)
Alimony Parents (€; Standardized)	2.531*** (0.0909)	1.829*** (0.102)	2.623*** (0.0998)
Prior vocational Training (0/1)	0.913 (0.0840)	0.811 (0.132)	0.946 (0.0916)
Other grant (0/1)	3.130*** (0.374)	4.222*** (0.651)	2.374*** (0.323)
<b><u>Estimation of survey examples</u></b>			
Maximum Amount BAföG deviation (Cont. €/ 100)	0.923*** (0.0132)	0.944*** (0.0202)	0.918*** (0.0140)
Maximum Amount BAföG deviation (Cont. €/ 100 squared)	1.011*** (0.00257)	1.010*** (0.00375)	1.010*** (0.00270)
Amount to repay (Cont. €/ 1.000)	1.019*** (0.00272)	1.013*** (0.00354)	1.019*** (0.00281)
Amount for student deviation (Cont. €/ 100)	0.934*** (0.0233)	1.015 (0.0431)	0.912*** (0.0238)
Amount for student deviation (Cont. €/ 100 squared)	1.007*** (0.00249)	1.000 (0.00414)	1.009*** (0.00260)
Parents' income (Cat. of 15.000 €)	0.919*** (0.0189)	0.971 (0.0313)	0.911*** (0.0203)
Number of obs	4,321	3,337	4,066
Pseudo r-squared	0.2749	0.2347	0.2868

\*\*\* p<.01, \*\* p<.05, \* p<.1

## 9. Discussion and Conclusion

The paper investigates the effects of misperceptions of student aid conditions on non-take-up. Our research question is twofold - firstly, we investigate standard determinants of student aid non-take-up. In the second step, we investigate whether misperceptions prevent students from not applying for BAföG because they mistakenly assume that they have little or no entitlement. Finally, we present



preliminary results on the reasons for non-take-up by students who believe to be eligible but do not apply.

When interpreting the results, it has to be taken into consideration that we do not use administrative data but survey data. Furthermore, the students have to estimate their parents' income. This brings further uncertainty to the results. However, our Beta error is in line with similar simulations.

To set our work and new dataset in the context of the wider literature on the determinants of student aid non-take-up we control for known determinants. We show the determinants age, migratory background, living with their parents, and acquaintances receiving BAföG to be significant in non-take-up. This corroborates findings by Herber and Kalinowski (2019) where age and migratory background were not significant but had the same effect directions. This could be due to our sample selection being more precise as we have the student's self-reported full university background, which was not the case in the previous study.

Another point of interest shown by our work is the role of alternative student grants in the non-take-up. These significantly raised the probability of non-take-up even though the amount paid by most alternative grants is not high enough to lead to a reduction in the amount of student aid paid. As 16 % of non-take-up students that believed to be eligible for BAföG receive a different grant, further research will be required in this area. More specifically, it will need to show if this is driven by another misperception in that other student grants lead to a larger deduction for student aid than is actually the case or the other grants lead to the needs of the students to be well enough covered that they no longer require the states' assistance.

Splitting the group of non-take-up students into whether they believed themselves to be eligible (Believers) or not (non-Believers) we showed that a majority incorrectly did not believe to be eligible. This could be an explanation of the finding of Konijn, Visser and Zumbuehl (2023) who found that about one-third of the non-take-up students "take on a student loan while leaving the grant on the table." Furthermore, Daponte, Sanders and Taylor (1999) found that families spend more time acquiring information on a social benefit than families whose potential benefits are low. When most students do not believe to be eligible this could explain why recent student aid reforms in Germany have not shown an effect.

We showed that the misconceptions relevant to financial eligibility criteria (especially parents' income) are highly significant for non-take-up students who do not believe to be eligible. This was not the case for students that correctly believed to be eligible. This shows that students many misunderstand the financial eligibility criteria for student aid. Consequentially they do not actively decide not to take up

student aid, but rather do not have a choice. This shows that future information treatments should be on the income levels of parents that are eligible for student aid.

For Believers, we showed the misconception of the amount of student aid, that has to be repaid to be significant for non-take-up. As debt-aversion is a factor in non-take-up, the misperception of the repayment amount may further non-take-up by students who would be prepared to take on a small amount of debt, but not the amount they misperceive. This also shows that an information treatment on debt repayment could increase take-up.

The preliminary descriptive results of the reasons for non-take-up given by students who believe to be eligible but have not applied for BAföG also fit the work by Currie (2006) and Eurofound (2015) where transaction costs and debt aversion have been shown to be main drivers.

Overall, this work shows the importance of information on eligibility in non-take-up of student aid specifically but also social benefits more generally. It is relevant for researchers when designing information treatments, as we give first insights into the misperceptions of eligibility in student aid non-take-up. This work also has implications for policymakers as they suggest that communicating the eligibility for means-tested student aid should be put into greater focus in communication. By expanding the pool of students who know of the eligibility conditions for and repayment conditions of student aid more can choose whether they would like to receive the assistance they are entitled to, thereby furthering the economic and social well-being of university students.

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## 11. Appendices

### 11.1. Descriptive Statistics Full Sample Regression

Table 7: Descriptive statistics by students' take-up and own eligibility belief (full sample)

	All	Non-Take-Up		BAföG	
	Mean	All	non-believers	believers	Mean
<b>Sociodemographic Background</b>					
Age of Individual	22.1	22.3	22.4	22.0	22.1
Female (0/1)	0.68	0.67	0.69	0.63	0.69
Student has direct migration Background (0/1)	0.08	0.13	0.12	0.22	0.06
Lives with parents (0/1)	0.17	0.22	0.18	0.36	0.14
Live in east Germany (0/1)	0.32	0.26	0.27	0.28	0.34
Acquaintances receive BAFöG (0/1)	0.62	0.46	0.43	0.48	0.69
Semester	3.80	3.63	3.83	3.35	3.86
<b>Degree of needs</b>					
BAföG before student deductions (simulated €)	702	629	636	561	732
Alimony Parents (€)	201	370	420	262	133
Prior vocational Training (0/1)	0.08	0.07	0.07	0.06	0.08
Other grant (0/1)	0.03	0.07	0.06	0.12	0.02
<b>Parent controls</b>					
At least one parent has a collage degree (0/1)	0.44	0.60	0.62	0.62	0.38
<b>Behavioural Preferences</b>					
Debt affinity (Scale 0-10)	2.90	2.70	2.63	2.90	2.97
<b>Estimation of survey examples</b>					
Maximum Amount BAFöG (812 € correct)	810	764	759	763	828
Amount to repay (10.010 € correct)	12,975	15,422	15,723	15,790	11,983
Amount for student (761 € correct)	419	384	366	428	434
Parents' income (50.000 € correct)	45,447	40,626	39,308	42,588	47,400
Observations	4,496	1,292	881	265	3,204

### 11.2. Survey Questions for misperceptions

#### 11.2.1. BAFöG amount depending on parents` income

Now consider the following basic scenario, which is the same for all three questions:

Anna (22) is studying and lives in student accommodation. Her father is an employee and two years ago had a gross annual income of €60,000. Her mother is a housewife and had no income. Anna has free health and care insurance through her parents. She has no assets of her own. Her little sister Sophie (14) is still at school.

For the BAFöG calculation, the income from two years ago is considered.

How much BAFöG do you think Anna receives per month (in EUR per Month  $\pm 100\text{€}$ )?

### **11.2.2. Parents income depending on BAföG amount provided**

Now consider the following basic scenario, which is the same in both question tabs:

Max (20) is studying in his first semester and lives in a shared flat. He has no siblings. His mother is single and employed. His father has broken off contact and cannot be reached. Max has free health and care insurance through his mother. He has no assets of his own. Max receives €360 a month in BAföG.

For the BAföG calculation, the income from two years ago is considered.

"Unavailable" means that neither Max nor the BAföG office can find his father and he is therefore not included in the BAföG calculation.

What do you think Max's mother's gross annual income was 2 years ago (in EUR per year  $\pm$  €7500)?

### **11.2.3. BAföG repayment**

Sara (29) started working after completing her bachelor's degree. During her 3-year degree programme, she received €250 BAföG per month. In total, she received €9,000. Sara is paying back her BAföG loan in instalments.

How much do you think Sara has to pay back in total (in EUR  $\pm$ 500€)?

Now imagine that Sara studied for 5 years and received €500 per month in BAföG, so that she received a total of €30,000.

How much do you think Sara has to pay back in total (in EUR  $\pm$ 500€)?

### **11.2.4. Maximum regular BAföG-amount**

What is the current maximum BAföG rate?

Please enter the maximum rate for a student if they have free health and long-term care insurance through their parents. health and long-term care insurance through their parents. This answer has no influence on your lottery tickets.

In EUR per month