SCHOOL OF
ECONOMICS AND
MANAGEMENT

Means Testing in BAföG

The Impact of Income Eligibility Thresholds on Student Labor Supply

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Contents

Abstract

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Keywords: 3 – 5 key words
JEL codes: Find appropriate codes all https://www.aeaweb.org/econlit/jelCodes.php?view=jel

1 Introduction

2 Related Literature

- What we provide to the literature (short)
  - What other studies have looked into

3 Data

- What source is the data from? - Describe the Sample - How many individuals in our sample? - Describe what data we have, what dataset, what variables from the dataset - Create a descriptive table over all variables used and the outcomes, sample sizes etcetera - Limitations of our data

4 The German Study Aid System

- Write about how pupils are funding their education

4.1 Federal Training Assistance Act ("Bundesausbildungsförderungsgesetz")

The **Federal Training Assistance Act** (DE: **Bundesausbildungsförderungsgesetz**) is a student loan supplied by the **Federal Ministry of Education and Research** (DE: **Bundesministerium für Bildung und Forschung**). BAföG is designed to financially support students, with the primary aim of ensuring equal access to higher education. The eligibility criteria for the loan is therefore very strict to make sure that only students who are genuinely in need of the loan gets access to it.

4.1.1 History and Reforms

The loan was introduced in 1971 in the form of a 100 percent grant and was generally very successful with almost half (44.6%) receiving the subsidy—a level never reached again. The early success of BAföG came with significant financial burdens for both the federal states and the federal government, prompting a series of reforms—particularly in response to the energy crises of the 1970s. In 1974, a mandatory loan component was introduced, and by 1977, the loan share had increased even further. By the 1980s, BAföG underwent a complete overhaul, transforming it into a fully subsidised loan program. As a result, the grant portion was eliminated, significantly reducing BAföG's appeal. Due to the rapid decline of students applying for BAföG it had to once again be overhauled in the 1990s and BAföG was now half a grant, and half a loan, where the loan part has zero interest – the structure of which is still in force today (Lost, 2025).

BAföG continues to face low interest among students today, with one of its major issues being that students are not utilizing it, as it lacks appeal (see table A1 and figure B1).

4.1.2 Two Loan Repayment Models

The two main ways of financing studies in higher education (HE) using a loan is to either use a traditional **time-based repayment loan** (TBRL) which is of the same style as standard "mortgage-loans" where the principal is amortized on a fixed reimbursement schedule.

The alternative to the TBRL plans are **income contingent loans** (ICL), where the principal you are allowed to borrow and the rate at which you amortize the principal is contingent on your financial status. The principal you are allowed to borrow and the rate at which you amortize the principal is contingent on your earned and capital income. In some systems, as in the German one, the household earnings and capital gains are also considered when applying for the income contingent BAföG loan.

An obvious benefit of the ICL loan structure is that it eliminates the likelihood of defaulting on your debt, as the reimbursement period (and rate of amortisation) is adapted to the individual (or household) income. Time based repayments are known to overburden the poorer part of the population which decides to educate themselves. For instance, among the 20% of the poorest graduates in South Korea and United States almost all students have a repayment burden exceeding 100% of their income (Chapman et al., 2022). Income contingent loans therefore provides an insurance against low income for the debtor and promotes social benefits such as mobility and human capital formation.

However, there are some important drawbacks to income-contingent loans that policymakers should consider when implementing them. One concern is that, as long as the borrower has an outstanding balance, the loan effectively acts as a marginal tax on income above the repayment threshold. This can potentially reduce the borrower's incentive to work more, as higher earnings lead to higher repayments. If borrowers respond by working less to avoid steeper repayment rates, the loan will be repaid more slowly, increasing the cost borne by the creditor — in this case, the state. Whether this is an actual problem is yet to be investigated further, but has been shown that for instance in the UK's income contingent repayment plan to not be an actual problem (Britton and Gruber, 2020).

In the case of BAföG, this issue is less pronounced, as the repayment system is only partially income-contingent. Repayments are capped at 130 EUR per month, and after a maximum of 77 installments (a total of 10,010 EUR), any remaining debt is forgiven (Studentenwerk Leipzig, nd).

4.2 Training Loans ("Bildungskredit")

5 Method

5.1 Requirement

$$\text{Requirement} = \text{Bedarfssatz} + \text{Accommodation} + \text{Health Insurance} + \text{Long Term Health Insurance} + (\text{Children} \times \text{No. of Child} \tag{5.1}$$

$$\text{Theoretical BAföG} = \text{Requirement} - \text{Anrechenbares Einkommen (student + parents)} \tag{5.2}$$

5.2 Anrechenbares Einkommen

5.2.1 Parental Contribution (Elternbeitrag)

5.2.2 Student's own Income (Eigene Einkünfte)

5.3 Construct Probit Model

Construct a probit model in order to find the probably of not taking up the BAföG loan. With this model we will get a non-take-up rate for bafög loans.

5.4 Individual Students' Monthly Requirement

The monthly requirement the student is eligible for is contingent on the financial support the student is currently receiving from his or her family. Firstly, the student receives a constant **requirement rate** (RR),[1] which is not contingent on the students' financial circumstances. To this basic amount the student receives requirements for **accommodation** (A), **health insurance** (HI), **long term care insurance** (LTCI) and an additional amount per the **number of children** (C) the student has. The requirement received for health insurance, long-term care insurance and accommodation is contingent on whether the parents are already providing these benefits. The total requirement the student will receive is therefore

$$\mathrm{R} = \mathrm{RR} + \mathrm{A} + \mathrm{HI} + \mathrm{LTCI} + \mathrm{C} \tag{5.3}$$

where

Variable	Provided by parents	Not provided by parents
A	59	380
HI	0	102
LTCI	0	35

Table 1: Benefits contingent on parental provision (values in EUR).

5.5 Deductions from Requirement

Parental and Student Income.

$$PR = \text{Parental Reduction} = \begin{cases} 0 & \text{if } E_5 \text{ or } (T_3 \text{ and } E_3) \\ 0 & \text{if } \text{Age}_{30} \\ 0.5 \times (\text{Parental Income} - \text{Exemption}) & \text{otherwise} \end{cases} \tag{5.4}$$

- E_5: Employed for 5 years after age 18
- T_3: Completed 3 years of vocational training

[1] Represents what BAföG calls "bedarfssätze" in German.

- E_3: Employed for 3 years after vocational training
- Age_{30}: Older than 30 at the start of training

Household Type	Exemption
Parents living together	2,540
Parents live separately	1,690
Spouse or Cohabiting Partner	1,690

Table 2: Tax-free amount contingent on household type (values in EUR).

Let

$$SR = \text{Student Reduction} = \begin{cases} 0.5 \times ((\text{Income} - 556) + \max(0, \text{Assets} - 15,000)) & \text{if } \text{Age}_{30} \\ 0.5 \times ((\text{Income} - 556) + \max(0, \text{Assets} - 45,000)) & \text{else} \end{cases}$$

$$\text{BAföG}_i^{\text{final}} = \max(0, R - (PR + SR))$$

Define a loss function out of the requirements and the deductions

$$L(R, PR, SR) = R - (PR + SR) \tag{5.5}$$

5.6 Construction of Fuzzy RD

Dummy variable for whether student loses any of his or her BAföG requirement

$$D_i = \begin{cases} 1, & \text{if } L(R, PR, SR) > 0 \quad \text{(Some BAföG deduction occur)} \\ 0, & \text{if } L(R, PR, SR) = 0 \quad \text{(No deductions, full requirement)} \end{cases} \tag{5.6}$$

REVISE THIS ENTIRELY! Use a logit/probit for the first step then use these fitted values as regressor for second stage! Look into assumptions of both models and determine according to the characteristics of our data.

First Stage (REVISE! Make into Logit/Probit)

$$\text{BAF}\ddot{\text{O}}\text{G}_i = \alpha + \beta D_i + \gamma X_i + \varepsilon_i$$

Second Stage

$$\text{LabourSupply}_i = \delta + \lambda \widehat{\text{BAföG}}_i + \mu X_i + \nu_i$$

λ coefficient for whether BAföG receipt reduces labour supply

References

Britton, J. and Gruber, J. (2020). Do income contingent student loans reduce labor supply? *Economics of Education Review*, 79:102061.

Chapman, B., Dearden, L., and University College London, UK, and IZA, Germany (2022). Income-contingent loans in higher education financing. *IZA World of Labor*.

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Studentenwerk Leipzig (n.d.). Information on BAföG-repayment. https://www.studentenwerk-leipzig.de/en/bafoeg-financing/information-bafog-repayment/. Accessed: 2025-04-13.

Appendix A: Tables

Year	BIL002	Supported Persons			Proportion Supported (%)		
		PER010	PER011	PER012	PER010	PER011	PER012
2023	2,868,311	501,425	245,255	256,170	17.5	8.6	8.9
2022	2,920,263	489,347	244,559	244,788	16.8	8.4	8.4
2021	2,941,915	467,595	200,369	267,226	15.9	6.8	9.1
2020	2,944,145	465,543	205,093	260,450	15.8	7.0	8.8
2019	2,891,049	489,313	212,217	277,096	16.9	7.3	9.6
2018	2,868,222	517,675	218,427	299,248	18.0	7.6	10.4
2017	2,844,978	556,573	229,053	327,520	19.6	8.1	11.5
2016	2,807,010	583,567	235,163	348,404	20.8	8.4	12.4
2015	2,757,799	611,377	231,477	379,900	22.2	8.4	13.8
2014	2,698,910	646,576	246,901	399,675	24.0	9.1	14.8
2013	2,616,881	665,928	253,371	412,557	25.4	9.7	15.8
2012	2,499,409	671,042	254,769	416,273	26.8	10.2	16.7
2011	2,380,974	643,578	246,895	396,683	27.0	10.4	16.7
2010	2,217,294	592,430	232,796	359,633	26.7	10.5	16.2
2009	2,121,178	550,369	211,881	338,488	25.9	10.0	16.0
2008	2,025,307	510,409	217,933	292,476	25.2	10.8	14.4
2007	1,941,405	494,480	191,268	303,212	25.5	9.9	15.6
2006	1,979,043	498,565	189,022	309,543	25.2	9.6	15.6
2005	1,985,765	506,880	193,285	313,595	25.5	9.7	15.8
2004	1,963,108	497,257	186,956	310,301	25.3	9.5	15.8
2003	2,019,465	481,594	179,755	301,839	23.8	8.9	14.9
2002	1,938,811	451,505	168,890	282,615	23.3	8.7	14.6
2001	1,868,331	406,776	134,933	271,843	21.8	7.2	14.6
2000	1,798,863	348,799	100,913	247,886	19.4	5.6	13.8
1999	1,770,489	338,427	103,239	235,188	19.1	5.8	13.3
1998	1,800,651	336,355	97,539.	238,810	18.7	5.4	13.3

Table A1: Number and percentage of students receiving BAföG support (BIL002). PER010: Total supported students, PER011: Fully supported students, PER012: Partially supported students.

Year	**CPI (PREIS1)**		**Average Payout**		**Fin. Exp. (EUR 1000)**	
	Index (2020)	Factor (2023)	Nominal	2023 Prices	Nominal	2023 Prices
1991	61	1.885	290	547	1,538,590	2,900,701
1992	65	1.795	290	521	1,539,929	2,764,764
1993	67	1.719	297	510	1,458,164	2,506,152
1994	69	1.674	295	494	1,257,002	2,104,621
1995	71	1.644	304	500	1,133,989	1,863,894
1996	72	1.621	322	522	1,059,270	1,716,900
1997	73	1.590	319	507	910,038	1,446,886
1998	74	1.577	316	498	861,688	1,358,905
1999	74	1.566	321	503	871,140	1,364,591
2000	75	1.546	326	504	906,857	1,401,724
2001	77	1.516	365	553	1,161,922	1,760,990
2002	78	1.494	371	554	1,350,543	2,018,032
2003	78	1.479	370	547	1,446,120	2,138,937
2004	80	1.455	371	540	1,513,641	2,202,517
2005	81	1.432	375	537	1,554,602	2,226,037
2006	82	1.409	375	529	1,538,770	2,168,773
2007	84	1.378	375	517	1,490,718	2,053,917
2008	86	1.343	398	534	1,590,638	2,136,104
2009	87	1.338	434	581	1,875,731	2,510,295
2010	88	1.325	436	578	2,019,078	2,674,533
2011	90	1.297	452	586	2,269,706	2,943,052
2012	91	1.273	448	570	2,364,963	3,009,718
2013	93	1.253	446	559	2,349,400	2,944,951
2014	94	1.241	448	556	2,280,748	2,831,524
2015	94	1.235	448	553	2,157,634	2,664,506
2016	95	1.228	464	570	2,099,110	2,578,590
2017	96	1.211	499	604	2,181,049	2,640,336
2018	98	1.190	493	586	2,001,732	2,381,265
2019	99	1.173	514	603	1,954,449	2,292,303
2020	100	1.167	574	670	2,210,920	2,580,143
2021	103	1.132	579	655	2,316,926	2,622,553
2022	110	1.059	611	647	2,454,392	2,599,161
2023	116	1.000	663	663	2,863,514	2,863,514

Table A2: Average nominal and real payout under the Federal Training Assistance Act (BAföG) for category students (pupils excluded). Table also shows the total Financial Expenditures (Fin. Exp.) in nominal and real prices.

Appendix B: Figures

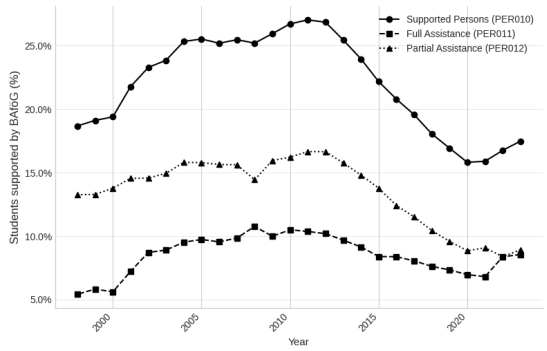
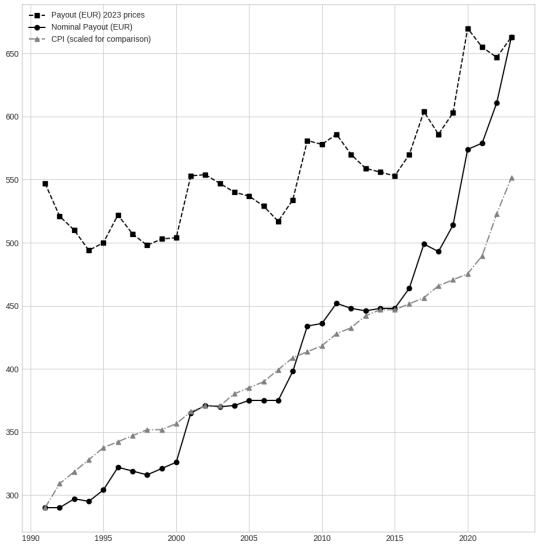


Figure B1: The figure illustrates the fraction of enrolled students in Germany receiving partial, full, or combined partial and full loans and grants over the same period.



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