

# A Appendix

## Additional Tables and Figures

Table A.1: Broad default – balancing properties

	Treatment	Control	p-value
	(1)	(2)	(3)
Age	21.50 (3.13)	21.60 (3.77)	0.79
Male	0.42 (0.50)	0.45 (0.50)	0.63
High school GPA	2.38 (0.47)	2.38 (0.47)	0.98
German citizenship	0.90 (0.30)	0.91 (0.28)	0.72
Completed university semester prior to current program	1.35 (0.84)	1.41 (0.89)	0.52
Enrollment day	11.51 (4.35)	11.62 (3.75)	0.80
Application day	38.30 (25.00)	37.71 (25.59)	0.83
<i>N</i>	175	174	349

*Note:* Columns (1) and (2) display the means in the control and treatment groups. Standard deviations (SD) in parentheses. Column (3) displays t-tests of equality of means. Completed university semester is coded so that 1 indicates that the student is in the first semester of university.

Table A.2: Variable description: broad default

Variable	Description
<i>Treatment Variables</i>	
Treatment	Random assignment to the treatment group.
<i>Stratification Variables</i>	
HS GPA	Indicators for final high school grade point average (1.0-1.9; 2.0-2.1; 2.2; 2.3; 2.4; 2.5; 2.6; >2.6)
<i>Control Variables</i>	
Age	Age in years at randomization.
Male	Indicator for being male.
HS GPA	Final high school grade point average (1=best, 4=worst).
German citizenship	Indicator for being a German citizen.
Completed university semester	Number of university semester completed prior to the start the study program.
Enrollment day	Higher value correspond to later applications during the application period (1=first day of enrollment period; 35=last day).
Application day	Higher value correspond to later applications during the application period (1=first day of application period; 75=last day).
<i>Outcome Variables</i>	
Sign-up sign-up period	Number of recommended exams signed up for during the sign-up period.
Sign-up sign-up period (individual exams)	Sign-up rate of each of the recommended exams after the sign-up period.
Sign-up exam day	Number of recommended exams still signed up for on the day of the exam.
Sign-up exam day (individual exams)	Sign-up rate of each of the recommended exams on the day of the exam.
Pass	Number of recommended passed exams in the first semester.
Pass (individual exams)	Pass rate of each of the recommended exams in the first semester.
Fail	Number of recommended failed exams in the first semester.
Fail (individual exams)	Fail rate of each of the recommended exams in the first semester.
Grade (individual exams)	Grade of each of the recommended exams in the first semester.
GPA	Grade point average first semester (1=best, 4=worst); failed exams are not included in calculation.
All CP	Number of overall credit points achieved in the first semester (net of recognitions). Also including exams that were not recommended by the university to be taken in the first semester.

Figure A.1: Timeline of broad default experiment

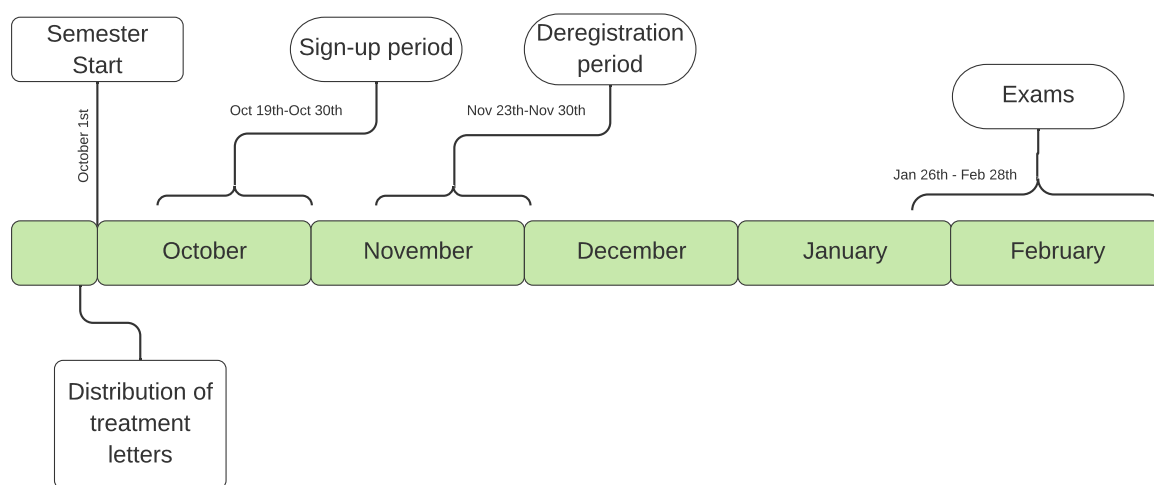
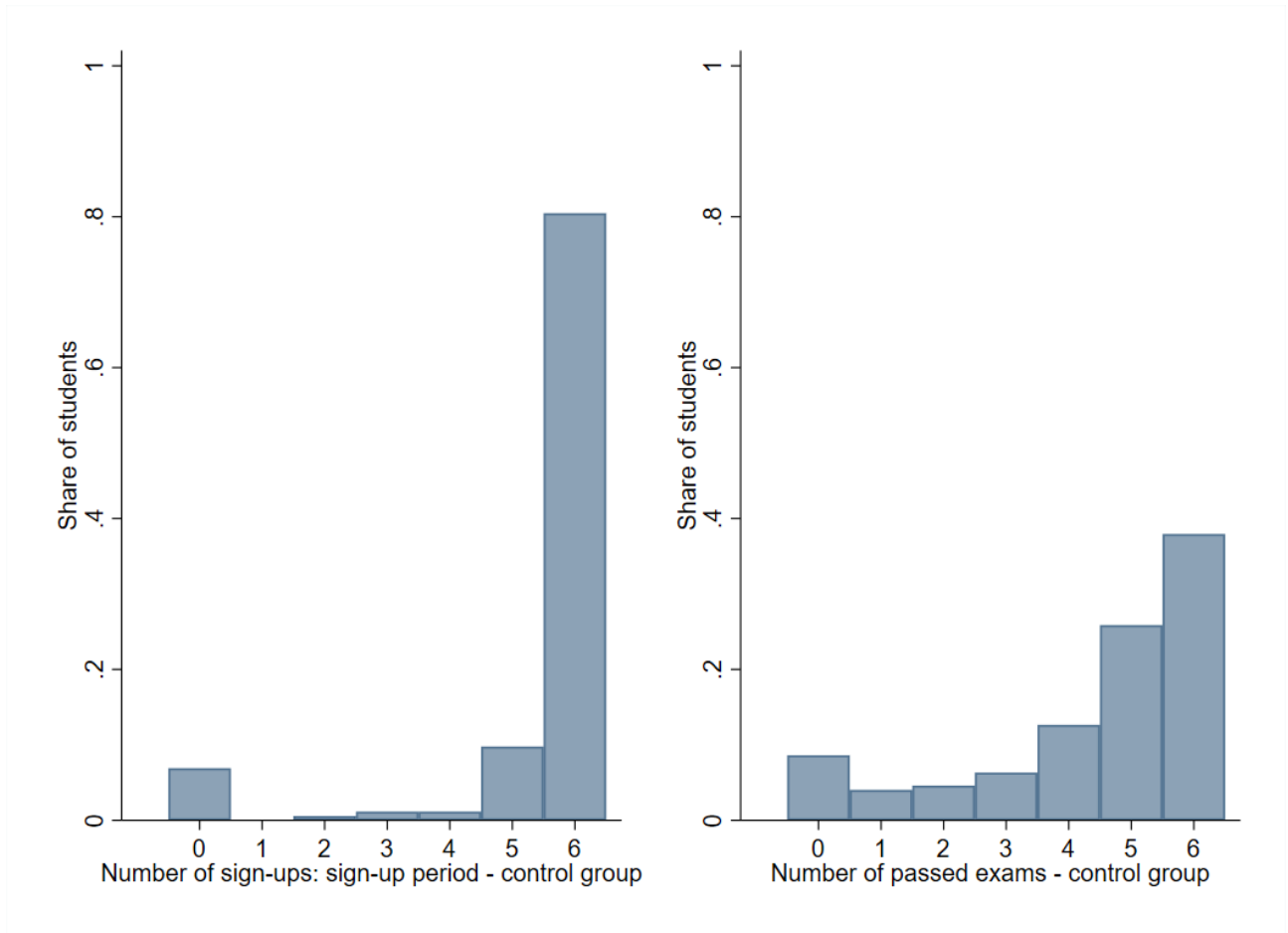


Figure A.2: Broad default – number of exam sign-ups and passes in the control group



*Note:*  $N = 174$ . The left panel displays the share of students that signed up for each number of the six exams recommended for the first semester. The right panel displays the share of students that passed each number of the six exams recommended for the first semester.

Table A.3: Targeted default (pooled sample) – balancing properties

	Treatment (1)	Control (2)	p-value (3)
Age	21.27 (3.40)	21.27 (2.80)	0.99
Male	0.44 (0.50)	0.46 (0.50)	0.71
High school GPA	2.38 (0.50)	2.38 (0.53)	0.87
Application day	45.13 (24.62)	44.46 (24.92)	0.78
Early/late application	0.50 (0.50)	0.50 (0.50)	0.92
<i>N</i>	215	213	428

*Note:* Columns (1) and (2) display the means in the control and treatment groups. Standard deviations (SD) in parentheses. Column (3) displays t-tests of equality of means. Early/late application is a dummy where 1 corresponds to a student who applied after the median application date.

Table A.4: Targeted default (BuA sample) – balancing properties

	Treatment (1)	Control (2)	p-value (3)
Age	21.47 (3.59)	21.49 (2.86)	0.94
Male	0.45 (0.50)	0.46 (0.50)	0.88
High school GPA	2.48 (0.44)	2.47 (0.46)	0.90
Application day	44.82 (24.92)	43.98 (25.39)	0.75
Early/late application	0.50 (0.50)	0.49 (0.50)	0.87
<i>N</i>	181	180	361

*Note:* Columns (1) and (2) display the means in the control and treatment groups. Standard deviations (SD) in parentheses. Column (3) displays t-tests of equality of means. Early/late application is a dummy where 1 corresponds to a student who applied after the median application date.

Table A.5: Variable description: targeted default

Variable	Description
<i>Treatment Variables</i>	
Treatment	Random assignment to the treatment group.
<i>Stratification Variables</i>	
1st semester CP	First semester credit points (3 blocks in each study program. BuA: <15CP; 15-30CP; 30-40CP. IB: <24CP; =24CP; >24CP).
Early/late application	Indicator for being a procrastinator (1 if someone applied in second half of the application period).
<i>Control Variables</i>	
Age	Age in years at randomization.
Male	Indicator for being male.
HS GPA	Final high school grade point average (1=best, 4=worst).
Application day	Higher value correspond to later applications during the application period (1=first day of application period; 75=last day).
<i>Outcome Variables</i>	
Sign-up: sign-up period	Indicator for being signed up for the statistics exam after the sign-up period.
Sign-up: exam day	Indicator for being signed up for the statistics exam on the day of the exam.
Pass	Indicator for passing of the statistics exam.
Fail all	Indicator for failing of the statistics exam.
Fail no show	Indicator for failing of the statistics exam due to not showing up to the exam.
Statistics grade	Grade of the statistics exam; only students who participated in the exam are included.
Doctor's note	Indicator for withdrawing from the exam with a doctor's certificate for being unfit to take the exam.
All exams without statistics: sign-ups sign-up period	Number of exam sign-ups during sign-up period (net of statistics).
All exams without statistics: pass GPA	Number of passed exams (net of statistics). Grade point average in the second semester (1=best, 4=worst); failed exams are not included in calculation.
All exams without statistics: CP	Number of overall credit points achieved in the second semester (net of statistics).
Dropout	Indicator for having dropped out of the study program after treatment.

Figure A.3: Timeline of targeted default experiment

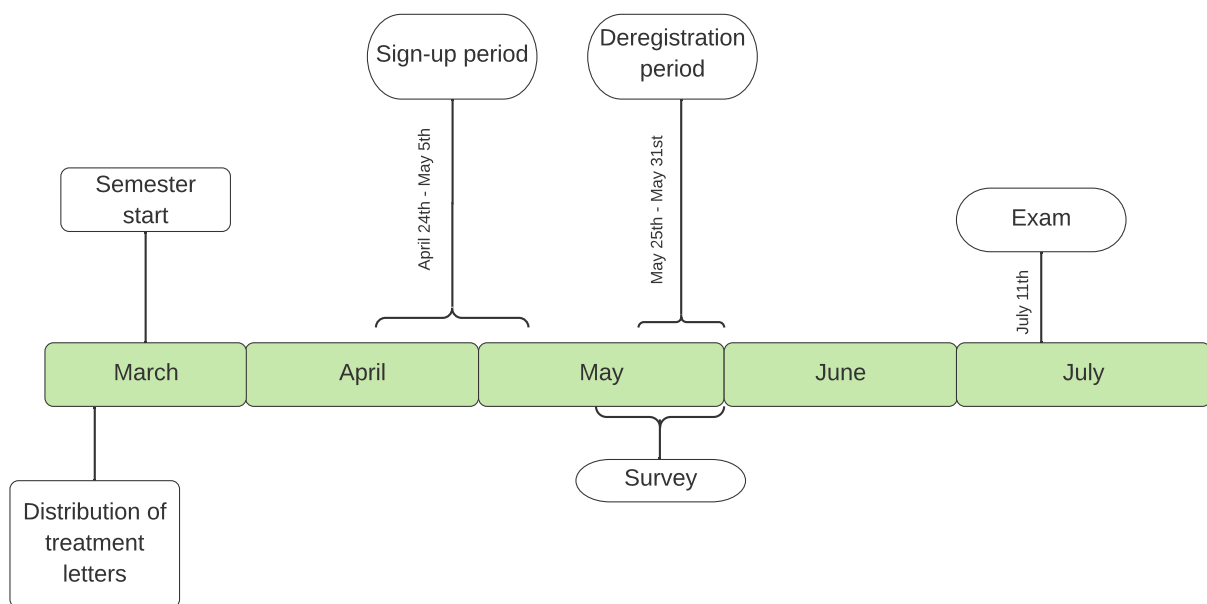


Table A.6: Targeted default – secondary outcomes – pooled sample

All exams without statistics										
	Sign-up sign-up period		Pass		CP		Overall GPA		Dropout	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatment (opt-out)	0.078 (0.142)	0.079 (0.142)	0.118 (0.133)	0.118 (0.134)	0.588 (0.666)	0.590 (0.672)	0.038 (0.056)	0.037 (0.053)	-0.009 (0.028)	-0.007 (0.028)
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean control		5.05	3.83		19.14		2.58		0.11	
(SD)		(1.69)	(1.77)		(8.84)		(0.63)		(0.31)	
<i>N</i>		428	428		428		382		428	

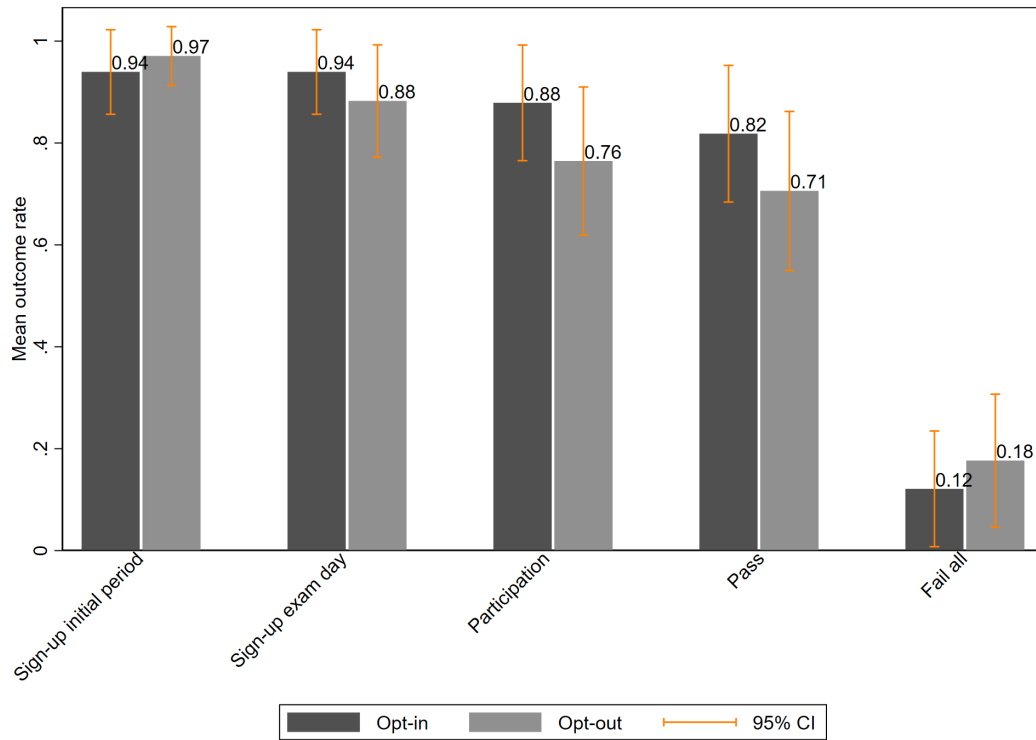
Note: OLS estimates. Dependent variables are the number of exams signed up for after the sign-up period, passed exams (net of recognitions), number of credit (CP) net of recognitions – all variables are net of statistics –, overall GPA (only passing grades), and a dummy for whether a student dropped out of the study program. Sign-ups, passes and GPA are weighted by the number of credits of the respective exams. Strata FE: 1st semester CP FE× dummy for early/late application; balancing variables: high school GPA, age, gender, application day. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table A.7: Targeted default – secondary outcomes

All exams without statistics										
	Sign-up sign-up period		Pass		CP		Overall GPA		Dropout	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatment (opt-out)	0.014 (0.155)	0.015 (0.156)	0.155 (0.143)	0.155 (0.144)	0.774 (0.715)	0.775 (0.721)	0.052 (0.062)	0.051 (0.058)	-0.021 (0.031)	-0.020 (0.031)
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean control	5.00		3.75		18.77		2.63		0.12	
(SD)	(1.71)		(1.79)		(8.96)		(0.63)		(0.32)	
<i>N</i>	361		361		361		321		361	

*Note:* OLS estimates. Dependent variables are the number of exams signed up for after the sign-up period, passed exams (net of recognitions), number of credit (CP) net of recognitions – all variables are net of statistics –, overall GPA (only passing grades), and a dummy for whether a student dropped out of the study program. Sign-ups, passes and GPA are weighted by the number of credits of the respective exams. Strata FE: 1st semester CP FE× dummy for early/late application; balancing variables: high school GPA, age, gender, application day. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Figure A.4: Targeted default (IB) – mean outcomes in the control vs. treatment group



Note:  $N = 67$ ;  $N(\text{opt-in}) = 33$ ;  $N(\text{opt-out}) = 34$ . The sum of "pass" and "fail all" differs from "sign-up exam day" due to rounding. "Fail all" consists of failed exams due to insufficient performance plus fails due to non-participation upon sign-up.



Table A.8: Targeted default (IB) – balancing properties

	Treatment (1)	Control (2)	p-value (3)
Age	20.21 (1.89)	20.06 (2.08)	0.77
Male	0.35 (0.49)	0.42 (0.50)	0.56
High school GPA	1.87 (0.53)	1.84 (0.58)	0.82
Application day	46.76 (23.19)	47.06 (22.39)	0.96
Early/late application	0.50 (0.51)	0.52 (0.51)	0.90
<i>N</i>	34	33	67

*Note:* Columns (1) and (2) display the means in the control and treatment groups. Column (3) displays t-tests of equality of means. Standard deviations (SD) in parentheses. Early/late application is a dummy where 1 corresponds to a student who applied after the median application date.

Table A.9: Targeted default (IB) – standard default effect

	Sign-up rate			
	Sign-up period		Exam day	
	(1)	(2)	(3)	(4)
Treatment (opt-out)	0.030 (0.047)	0.029 (0.047)	-0.059 (0.066)	-0.051 (0.063)
Strata FE	Yes	Yes	Yes	Yes
Balancing variables	No	Yes	No	Yes
Persuasion rate	0.50	0.48	0	0
Mean control (SD)	0.94 (0.24)		0.94 (0.24)	
<i>N</i>	67		67	

*Note:* OLS estimates. Dependent variables are the indicators for sign-up in statistics after the sign-up period and on exam day. Strata FE: 1st semester CP FE × a dummy for early/late application; balancing variables: high school GPA, age, gender, application day. The persuasion rate is calculated as  $\frac{y_T - y_C}{1 - y_C}$  where  $y_T$  and  $y_C$  are the outcomes in the treatment (T) and control (C) group. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table A.10: Targeted default (IB) – downstream default effect

	Participation <sup>1</sup>		Pass		Fail all		Fail no show		Statistics grade		Doctor's note	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Treatment (opt-out)	-0.112 (0.087)	-0.110 (0.087)	-0.106 (0.087)	-0.104 (0.085)	0.047 (0.082)	0.052 (0.083)	0.053 (0.071)	0.059 (0.074)	0.393 (0.320)	0.402 (0.317)	0.089* (0.051)	0.080* (0.045)
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Persuasion rate	0	0	-	-	-	-	-	-	-	-	-	-
Mean control	0.88		0.82		0.12		0.06		2.24		0.00	
(SD)	(0.33)		(0.39)		(0.33)		(0.24)		(1.35)		(0.00)	
<i>N</i>	67	67	67	67	67	67	67	67	61	67	67	67

Note: OLS estimates. The dependent variables are indicators for participation in, passing of, failing of the statistics exam and failing because of not showing up to the the statistics exam and the statistics grade (includes fails). Strata FE: 1st semester CP FE × a dummy for early/late application; balancing variables: high school GPA, age, gender, application day. The persuasion rate is calculated as  $\frac{y_T - y_C}{1 - y_C}$ , where  $y_T$  and  $y_C$  are the outcomes in the treatment (T) and control (C) group. There is no persuasion rate for pass as students can only be "persuaded" to sign up and participate. <sup>1</sup>The exam is graded as failed if students are signed up but do not show up, i.e. participation rate = pass rate + fail rate - fail rate no show. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table A.11: Targeted default (IB) – Secondary outcomes

All exams without statistics										
	Sign-up sign-up period		Pass		CP		Overall GPA		Dropout	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatment (opt-out)	0.423 (0.344)	0.416 (0.335)	-0.083 (0.365)	-0.113 (0.373)	-0.417 (1.825)	-0.566 (1.864)	-0.040 (0.135)	-0.034 (0.137)	0.053 (0.069)	0.057 (0.074)
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean control	5.38		4.23		21.15		2.34		0.06	
(SD)	(1.61)		(1.59)		(7.94)		(0.63)		(0.24)	
<i>N</i>	67	67	67	67	67	67	61	61	67	67

*Note:* OLS estimates. Dependent variables are the number of exams signed up for after the sign-up period, passed exams (net of recognitions), number of credit (CP) net of recognitions – all variables are net of statistics –, overall GPA (only passing grades), and a dummy for whether a student dropped out of the study program. Sign-ups, passes and GPA are weighted by the number of credits of the respective exams. Strata FE: 1st semester CP FE× dummy for early/late application; balancing variables: high school GPA, age, gender, application day. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table A.12: Treatment status and survey participation

	Survey participation	
	(1)	(2)
Treatment	-0.036 (0.049)	-0.035 (0.049)
Age	-	0.005 (0.008)
Male	-	-0.094* (0.051)
High school GPA	-	-0.078 (0.055)
Application day	-	-0.003* (0.002)
Strata	Yes	Yes
<i>N</i>	361	

*Note:* OLS estimates. The dependent variable is a dummy for survey participation.  $N(\text{survey participants}) = 145$ ; Strata FE: 1st semester CP FE  $\times$  early/late application indicator. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table A.13: Targeted default (responsives) – Balancing properties

	Treatment (1)	Control (2)	p-value (3)
Age	21.25 (4.55)	21.59 (3.23)	0.60
Male	0.38 (0.49)	0.37 (0.49)	0.92
High school GPA	2.40 (0.45)	2.42 (0.51)	0.79
Application day	35.06 (25.77)	37.58 (25.78)	0.56
Early/late application	0.35 (0.48)	0.37 (0.49)	0.80
<i>N</i>	69	76	145

*Note:* Columns (1) and (2) display the means in the control and treatment groups. Standard deviations (SD) in parentheses. Column (3) displays t-tests of equality of means. Early/late application is a dummy where 1 corresponds to a student who applied after the median application date.

Table A.14: Targeted default (non-respondives) – balancing properties

	Treatment (1)	Control (2)	p-value (3)
Age	21.61 (2.85)	21.42 (2.57)	0.62
Male	0.50 (0.50)	0.53 (0.50)	0.67
High-school GPA	2.53 (0.42)	2.51 (0.42)	0.77
Application day	50.83 (22.46)	48.65 (24.16)	0.49
Early/late application	0.60 (0.49)	0.59 (0.49)	0.86
<i>N</i>	112	104	216

*Note:* Columns (1) and (2) display the means in the control and treatment groups. Standard deviations (SD) in parentheses. Column (3) displays t-tests of equality of means. Early/late application is a dummy where 1 corresponds to a student who applied after the median application date.

Table A.15: Targeted default – robustness: allowing for treatment effect heterogeneity along other dimensions

	Participation				Pass			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment effect responsive students	0.163*** (0.052)	0.163*** (0.051)	0.194*** (0.054)	0.193*** (0.053)	0.112* (0.061)	0.110* (0.061)	0.139*** (0.064)	0.137*** (0.063)
Non-responsive	0.017 (0.059)	0.017 (0.059)	0.037 (0.059)	0.035 (0.058)	-0.013 (0.063)	-0.015 (0.062)	0.004 (0.063)	0.001 (0.062)
Treatment × non-responsive	-0.158** (0.075)	-0.158** (0.075)	-0.208*** (0.079)	-0.205*** (0.078)	-0.119 (0.084)	-0.115 (0.083)	-0.162* (0.088)	-0.157* (0.088)
Male (centered)	0.068* (0.038)	0.071 (0.056)	0.069* (0.037)	0.083 (0.056)	0.045 (0.042)	0.060 (0.060)	0.045 (0.041)	0.071 (0.060)
Application day (centered)	-0.001 (0.001)	-0.001 (0.001)	-0.003* (0.002)	-0.003** (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.004** (0.002)	-0.004** (0.002)
Treatment × male (centered)		-0.005 (0.075)		-0.029 (0.075)		-0.031 (0.082)		-0.052 (0.082)
Treatment × application day (centered)			0.004** (0.002)	0.004** (0.002)			0.003* (0.002)	0.003* (0.002)
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>			361	361		361		

*Note:* OLS estimates. The dependent variables are indicators for participation in and passing of the statistics exam. Strata FE: 1st semester CP FE × a dummy for early/late application; balancing variables: high school GPA and age. All specifications include an interaction between treatment and responsiveness. Columns (2) and (6) include an interaction between treatment and gender. Columns (3) and (7) include an interaction between treatment and application day, and Columns (4) and (8) include both interactions. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

*Interpretation:* These robustness checks show that the treatment effect for responsiveness remains stable, and that it is neither due to the higher share of females among the responsiveness, nor is it due to the responsiveness being on average earlier applicants. In fact, allowing for treatment effect heterogeneity with respect to the variable application day leads to slightly larger treatment effects in the responsive group because early applicants (for whom the treatment effects are smaller; see Table B.1 in the Online Material) are over-represented in the responsive group (see Table A.12). Columns (3), (4), (7) and (8) thus show that if responsiveness applied as late as the average student, the treatment effect for the responsiveness would be slightly larger (see also the section ‘Procrastinators’ in the Online Material on page 61, and the caveats mentioned therein regarding the interpretation of the variable application day).

Table A.16: Targeted default (responsive/non-responsive students) – secondary outcomes

All exams without statistics										
	Sign-up sign-up period		Pass		CP		Overall GPA		Dropout	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Responsive students</b>										
Treatment (opt-out)	-0.133 (0.160)	-0.139 (0.158)	0.249 (0.201)	0.238 (0.201)	1.247 (1.007)	1.189 (1.007)	-0.062 (0.092)	-0.065 (0.088)	-0.034 (0.038)	-0.033 (0.038)
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean control (SD)	5.25 (1.20)		4.23 (1.45)			21.17 (7.26)		2.57 (0.65)		0.08 (0.27)
<i>N</i>		145		145		145		142		145
<b>Non-responsive students</b>										
Treatment (opt-out)	0.154 (0.231)	0.158 (0.237)	0.120 (0.190)	0.134 (0.193)	0.600 (0.949)	0.672 (0.967)	0.143* (0.082)	0.147* (0.078)	-0.011 (0.044)	-0.002 (0.045)
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean control (SD)	4.81 (1.98)		3.40 (1.94)			17.02 (9.69)		2.68 (0.60)		0.14 (0.35)
<i>N</i>		216		216		216		179		216

*Note:* OLS estimates. Dependent variables are the overall number of exams signed up for after the initial sign-up period, passed exams (net of recognitions), number of credits (CP) net of recognitions – all variables are net of statistics – overall GPA (only passing grades), and a dummy for whether a student dropped out of the study program. Sign-ups, passes, and GPA are weighted by the number of credits of the respective exams. Strata FE: 1st semester CP FE×a dummy for early/late application; balancing variables: high school GPA, age, gender, application day. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

Table A.17: Targeted default – interaction with 1st semester CP, full BuA sample

	Standard default effect		Downstream default effect			
	Sign-up sign-up period (1)	Sign-up day of exam (2)	Participation <sup>1</sup> (3)	Pass (4)	Fail all (5)	Fail no show (6)
Treatment	0.233* (0.130)	0.271** (0.122)	0.029 (0.102)	-0.020 (0.088)	0.291** (0.120)	0.242** (0.101)
1st semester CP	0.030*** (0.007)	0.031*** (0.007)	0.031*** (0.007)	0.029*** (0.007)	0.002 (0.007)	0.000 (0.005)
Treatment* 1st sem CP	-0.008* (0.005)	-0.008* (0.004)	0.001 (0.004)	0.002 (0.004)	-0.010** (0.004)	-0.009** (0.004)
Strata	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	361	361	361	361	361	361

*Note:* OLS estimates. Dependent variables are the indicators for sign-up in statistics after the sign-up period and on exam day, for participation in, passing of, failing of the statistics exam and failing because of not showing to in the the statistics exam. The 1st semester CP variable is net of transferred credits. Strata FE: 1st semester CP FE×a dummy for early/late application; balancing variables: high school GPA, age, gender, application day. <sup>1</sup>The exam is graded as failed if students are signed up but do not show up, i.e. participation rate = pass rate + fail rate - fail rate no show. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .



Table A.18: Targeted default – interaction with 1st semester performance, (non)responsive students

	Standard default effect		Downstream default effect			
	Sign-up sign-up period	Sign-up day of exam	Participation <sup>1</sup>	Pass	Fail all	Fail no show
	(1)	(2)	(3)	(4)	(5)	(6)
Responsives						
Treatment	0.674** (0.283)	0.767** (0.320)	1.122*** (0.330)	0.677* (0.400)	0.090 (0.371)	-0.356 (0.225)
1st semester CP	0.029** (0.013)	0.031** (0.013)	0.039*** (0.011)	0.043*** (0.010)	-0.012 (0.013)	-0.009 (0.008)
Treatment* 1st sem CP	-0.023** (0.010)	-0.026** (0.011)	-0.036*** (0.011)	-0.021 (0.014)	-0.004 (0.013)	0.010 (0.008)
Strata	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	145	145	145	145	145	145
Non-responsives						
Treatment	0.160 (0.140)	0.195 (0.131)	-0.104 (0.106)	-0.103 (0.088)	0.298** (0.125)	0.299*** (0.104)
1st semester CP	0.033*** (0.008)	0.034*** (0.009)	0.032*** (0.009)	0.026*** (0.009)	0.008 (0.008)	0.002 (0.005)
Treatment* 1st sem CP	-0.005 (0.005)	-0.005 (0.005)	0.005 (0.004)	0.004 (0.004)	-0.009* (0.005)	-0.009** (0.004)
Strata	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	216	216	216	216	216	216

*Note:* OLS estimates. The dependent variables are indicators for participation in, passing of, failing of and failing because of not showing up in the the statistics exam. The 1st semester CP variable is net of transferred credits. Strata FE: 1st semester CP FE×a dummy for early/late application; balancing variables: high school GPA, age, gender, application day. <sup>1</sup>The exam is graded as failed if students are signed up but do not show up, i.e. participation rate = pass rate + fail rate - fail rate no show. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table A.19: Targeted default – survey answers

	Lecture attendance overall		Study time overall		Satisfaction with study program		Life satisfaction		Stress	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatment (opt-out)	0.201 (0.126)	0.206* (0.122)	0.377 (0.252)	0.360 (0.246)	0.286 (0.283)	0.275 (0.282)	0.184 (0.267)	0.200 (0.267)	0.034 (0.227)	0.058 (0.223)
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean control		3.68		1.46		6.46		7.28		3.77
(SD)		(0.80)		(1.28)		(1.57)		(1.74)		(1.36)
N		142		133		139		142		142

Note: OLS estimates. Dependent variables are the respective survey answers. Strata FE: 1st semester CP FE×a dummy for early/late application; balancing variables: high school GPA, age, gender, application day. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Questions: Lecture attendance overall: How often did you attend the lectures (including exercise classes and tutorials) in the current semester? [0 - never, i.e. 0 % of all classes, 1 - 1 % - 25 % of all classes, 2 - 26 % - 50%, 3 - 51 % - 75%, 4 - 76 % - 99 %, 5 - always, i.e. 100% of all classes]. Study time overall: On average, how many hours per week did you spend studying this semester, lectures, exercise classes and tutorials NOT included? [0 - up to 3 hours per week; 1 - over 3 up to 6 hours per week; 2 - over 6 up to 9 hours per week ; 3 - over 9 up to 12 hours per week; 4 - over 12 up to 15 hours per week ; 5 - more than 15 hours per week]. Satisfaction with study program: How satisfied are you with your studies, all things considered? [Scale from 0-10 (0=completely unsatisfied, 10=completely satisfied)]. Life satisfaction: Before we get to the actual topic of the survey, we would like to ask you about your satisfaction with your life in general: How satisfied are you with your life, all things considered? [Scale from 0-10 (0=completely unsatisfied, 10=completely satisfied)]. Stress: If you think of the current semester: To what degree do you agree with the following statements about your studies? With my studies I associate stress. [Scale from 0-6 (0=completely disagree, 6=completely agree)].

## B Online Material (not for publication)

### Procrastinators

In the targeted default, we also preregistered to analyze whether the default intervention is more beneficial for students who tend to procrastinate. Our hypothesis is that individuals who procrastinate may have a stronger tendency to defer deciding which exams they will take.<sup>40</sup> Therefore, we expected this group to be more likely to leave the default setting unchanged which would ultimately result in more exam sign-ups.

In the preregistration we stated to empirically identify procrastinators in our population by defining those students as procrastinators who applied for their programs late in the application period. This proxy has been proven to be a useful way to measure procrastination based on real data in the past (for similar approaches, see De Paola and Scoppa, 2015, Reuben et al., 2015, Brown et al., 2016, and Himmler et al., 2019). The application period lasted from May 2nd until July 15th. We consider everyone who applied in the second half (after June 7th) a procrastinator.<sup>41</sup>

Due to a change in the application process, which we were not aware of at the time of the preregistration, it is likely that some individuals who would have applied earlier under the old application rules now submit their applications later in the application period.<sup>42</sup> As a result, the application dates for this cohort may be an unreliable proxy for procrastination tendencies. We therefore decided to omit the preregistered analyses from the paper. For transparency reasons, we report them here.

We interact treatment with an indicator for application in the second half of the application period, and find that students who apply late in the period are indeed more likely to benefit from the default treatment. For the late-appliers parameter estimates for sign-ups in the initial sign-up period and on exam day are significantly different from zero, participation and passing are positive but imprecisely estimated; we see no effects for the early appliers except a negative effect on the statistics grade; see table (B.1).

<sup>40</sup>Authors who have described this mechanism for defaults are, for example, Sunstein (2013), Brown and Previtro (2014), and Blumenstock et al. (2018).

<sup>41</sup>Deviating from the preregistration, we inadvertently used the median application date to block non-procrastinators and procrastinators in the randomization. The median application date lies 13 days after the median of the application period.

<sup>42</sup>This is also reflected in the fact that the broad default cohort (which was subject to the previous application process) submitted their applications on average 7.27 days earlier than the targeted cohort (see Tables A.1 and A.4 in the Appendix).

Table B.1: Targeted default – interaction with procrastination indicator

	Standard default effect			Downstream default effect			
	Sign-up initial period	Sign-up day of exam	Participation <sup>1</sup>	Pass all	Fail no show	Statistics grade	
Opt-out procrastinators	0.064* (0.034)	0.081* (0.042)	0.070 (0.044)	0.040 (0.048)	0.041 (0.046)	0.010 (0.027)	0.044 (0.17)
Opt-out non-procrastinators	0.031 (0.041)	0.031 (0.052)	-0.012 (0.058)	-0.022 (0.061)	0.053 (0.047)	0.043 (0.034)	0.429** (0.176)
Control mean (procrastinators) (SD (procrastinators))	0.81 (0.39)	0.73 (0.45)	0.68 (0.47)	0.57 (0.50)	0.16 (0.36)	0.04 (0.21)	2.84 (1.43)
Persuasion rate (procrastinators)	0.34	0.3	0.22	-	-	-	-
Control mean (non-procrastinators) (SD (non-procrastinators))	0.87 (0.34)	0.82 (0.39)	0.79 (0.41)	0.73 (0.45)	0.09 (0.29)	0.03 (0.16)	2.48 (1.21)
Persuasion rate (non-procrastinators)	0.24	0.17	0	-	-	-	-
p-value interaction term <sup>2</sup>	0.542	0.462	0.260	0.428	0.853	0.457	0.116
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balancing variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	428	428	428	428	428	428	337

Note: OLS estimates. Dependent variables are the indicators for sign-up in statistics after the sign-up period and on exam day, the participation rate, pass rate, fail rate and the fail rate because of not showing up and the statistics grade (includes fails).  $N(\text{procrastinators}) = 223$ ,  $N(\text{non-procrastinators}) = 138$ . Strata FE: 1st semester GPA FE × a dummy for early/late application; balancing variables: high school GPA, age, gender, application day. The persuasion rate is calculated as  $\frac{y_T - y_C}{1 - y_C}$  where  $y_T$  and  $y_C$  are the outcomes in the treatment (T) and control (C) group. There is no persuasion rate for pass as students can only be "persuaded" to sign up and participate. <sup>1</sup>The exam is graded as failed if students are signed up but do not show up, i.e. participation rate = pass rate + fail rate - fail rate no show. <sup>2</sup>p-value of a t-test of the interaction of treatment and a dummy for procrastination. Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table B.2: Survey questions targeted default

No.	Question
1	<p><i>Before we get to the actual topic of the survey, we would like to ask you about your satisfaction with your life in general: How satisfied are you with your life, all things considered?</i></p> <p>[Scale from 0-10 (0=Completely unsatisfied, 10=Completely satisfied); -1 "No answer"]</p>
2	<p><i>Now we would like to know more about what it means to study at our faculty: How often did you attend the lectures (including exercise classes and tutorials) in the current semester?</i></p> <p>[0 - never, i.e. 0 % of all classes, 1 - 1 % - 25 % of all classes, 2 - 26 % - 50%, 3 - 51 % - 75%] [4 - 76 % - 99 %, 5 - always, i.e. 100% of all classes, -1 "No answer"]</p>
3	<p><i>On average, how many hours per week did you spend studying this semester, lectures, exercise classes and tutorials NOT included?</i></p> <p>[0 - up to 3 hours per week; 1 - over 3 up to 6 hours per week] [2 - over 6 up to 9 hours per week; 3 - over 9 up to 12 hours per week] [4 - over 12 up to 15 hours per week; 5 - more than 15 hours per week; -1 "No answer"]</p>
4	<p><i>If you think of the current semester: To what degree do you agree with the following statements about your studies? With my studies I associate...</i></p> <p>... Stress</p> <p>[Scale from 0-6 (0=Completely disagree, 6=Completely agree); -1 "No answer"]</p>
5	<p><i>Now we would like to ask you about your satisfaction with studying in general: How satisfied are you with your studies, all things considered?</i></p> <p>[Scale from 0-10 (0=Completely unsatisfied, 10=Completely satisfied); -1 "No answer"]</p>
6	<p><i>Do you visit the lecture and/or tutorial in Statistics in the current semester?</i></p> <p>[Yes (1), No (0); -1 "No Answer"]</p>
7	<p><i>How often have you attended the Statistics lectures (including exercises and tutorials) in the current semester?</i></p> <p>[0 - never, i.e. 0 % of all classes, 1 - 1 % - 25 % of all classes, 2 - 26 % - 50%, 3 - 51 % - 75%] [4 - 76 % - 99 %, 5 - always, i.e. 100% of all classes, -1 "No answer" ]</p>
8	<p><i>On average, how many hours per week did you spend studying [BW: Business-] Statistics this semester, lectures and tutorials NOT included?</i></p> <p>[0 - up to one hour per week; 1 - over 1 up to 2 hours per week] [2 - over 2 up to 3 hours per week; 3 - over 3 up to 4 hours per week] [4 - over 4 up to 5 hours per week; 5 - more than 5 hours per week; -1 "No answer" ]</p>

Figure B.1: Broad default: letter students in the control group received prior to the initial sign-up period

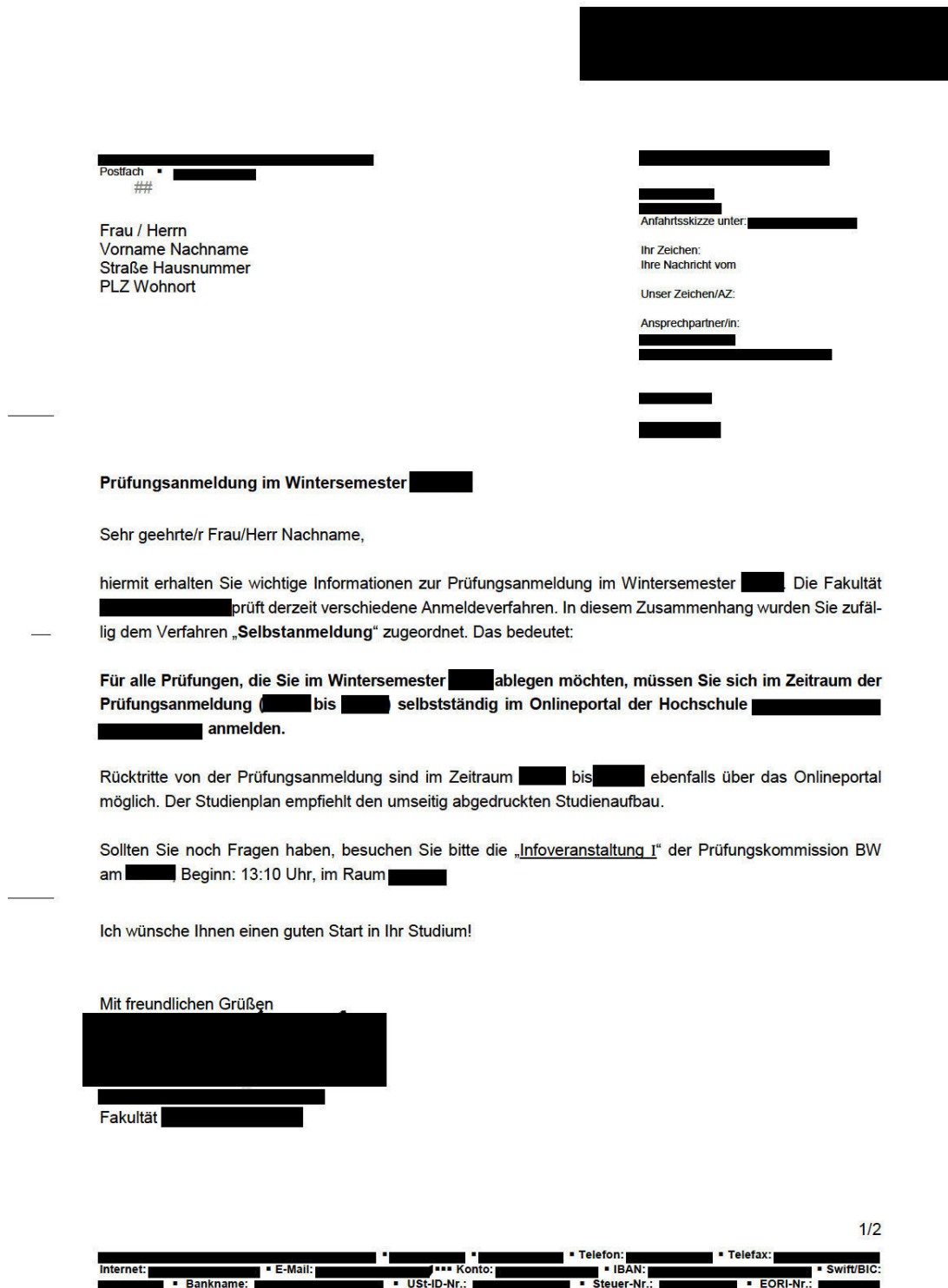


Figure B.2: Broad default: letter students in the control group received prior to the initial sign-up period - english translation

[REDACTED]

[REDACTED]  
[REDACTED] ■ [REDACTED]  
##

Frau / Herrn  
Vorname Nachname  
Straße Hausnummer  
PLZ Wohnort

Fakultät [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Ihr Zeichen:  
Ihre Nachricht vom

Unser Zeichen/AZ:

Ansprechpartner/in:  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

---

**Exam registration in the winter semester [REDACTED]**

Dear Mr/Ms,

This letter provides you with important information about the exam registration procedure in the winter semester [REDACTED]. The faculty of [REDACTED] is currently testing different registration procedures. In this context you were randomly assigned to the procedure „self-registration“. This means:

**For all exams, that you want to take in the winter semester [REDACTED], you have to self-register during the registration period ([REDACTED] bis [REDACTED]) via the web portal of the University [REDACTED]**

De-registrations from signed-up exams are also possible via the web portal during the time period between [REDACTED] bis [REDACTED]. The study plan recommends the study curriculum on the back site of this letter.

If you have any questions, please visit the “Information-event 1” of the examination board BW on [REDACTED] starting time: 01:10 pm, in [REDACTED]

---

I wish you a good start into your studies!

Yours sincerely  
[REDACTED]  
[REDACTED]  
Fakultät [REDACTED]

1/2

[REDACTED]  
[REDACTED]  
[REDACTED]





Figure B.4: Broad default: letter students in the treatment group received prior to the initial sign-up period - english translation



Figure B.5: Broad default: treatment and control letter - page 2

### Studienplan erster Studienabschnitt

Studienplan 1. Semester	
G1	Allgemeine BWL <sup>1)</sup>
G2	Wirtschaftsmathematik <sup>1)</sup>
G3	Buchführung und Bilanzierung
G4	Virtuelle Unternehmensführung
G5	Mikroökonomie
G6	Wirtschaftsinformatik

Studienplan 2. Semester	
G7	Betriebliche Steuern <sup>2)</sup>
G8	Betriebsstatistik
G9	Kosten- und Leistungsrechnung <sup>2)</sup>
G10	Wirtschaftsenglisch
G11	Makroökonomie
G12	Wirtschaftsprivatrecht

Nähere Informationen entnehmen Sie bitte der Studien- und Prüfungsordnung [\[Redacted\]](#) bzw. dem Studienplan, die Sie auf unserer Web-Seite finden.

---

1) Teil der Grundlagen- und Orientierungsprüfung nach § [\[Redacted\]](#).

2) Die Fächer Betriebliche Steuern sowie Kosten- und Leistungsrechnung werden auch im Wintersemester [\[Redacted\]](#) im Format der [\[Redacted\]](#) angeboten und können nach erfolgter Anmeldung bereits im 1. Semester abgelegt werden.


Figure B.6: Broad default: treatment and control letter - page 2 - english translation




**Study plan first study section**

Study plan 1. semester	
G1	Business Administration <sup>1)</sup>
G2	Math <sup>1)</sup>
G3	Accounting
G4	Management
G5	Microeconomics
G6	Informatics

Studienplan 2. Semester	
G7	Taxation <sup>2)</sup>
G8	Statistics
G9	Cost- and Activity Accounting <sup>2)</sup>
G10	Business English
G11	Macroeconomics
G12	Business Law

For more information, please find the study- and examination regulations  and the study curriculum, which you can find on our website.

1) Part of the orientation phase according to .


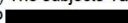
2) The subjects Taxation and Cost- and Activity Accounting will also be offered in the winter semester  according to  and can be already completed in the first semester upon successful registration.

Figure B.7: Targeted default: letter students in the control group received prior to the initial sign-up period

[REDACTED]

[REDACTED]

Fakultät [REDACTED]

[REDACTED]

Ihr Zeichen:  
Ihre Nachricht vom

Unser Zeichen/AZ: [REDACTED]

Ansprechpartner/in:  
[REDACTED]  
[REDACTED]  
[REDACTED]

**Prüfungsanmeldung im Sommersemester [REDACTED]**

Sehr geehrte Frau [REDACTED],

mit diesem Brief erhalten Sie wichtige Informationen zur Prüfungsanmeldung im Sommersemester [REDACTED]. Unsere Fakultät prüft derzeit im Rahmen der Veranstaltung Betriebsstatistik verschiedene Verfahren der Prüfungsanmeldung. Ihnen wurde per Zufallsauswahl das selbständige Anmeldeverfahren zugeordnet. Das bedeutet:

**Im Fach Betriebsstatistik sind Sie nicht zur Klausur angemeldet. Wenn Sie Betriebsstatistik im Sommersemester [REDACTED] ablegen möchten, können Sie sich im Zeitraum der Prüfungsanmeldung über [REDACTED] anmelden.**

Für alle anderen Fächer gilt ebenfalls das selbständige Anmeldeverfahren. Dies bedeutet, Sie müssen sich über [REDACTED] auch für alle weiteren Prüfungen anmelden, die Sie ablegen möchten.

Im Zeitraum der Prüfungsanmeldung ([REDACTED] bis [REDACTED]) können Sie sich über [REDACTED] zu Prüfungen anmelden oder von Prüfungen abmelden. Rücktritte von der Prüfungsanmeldung sind zudem im Zeitraum [REDACTED] bis [REDACTED] über [REDACTED] möglich.

Ich wünsche Ihnen einen guten Start ins 2. Semester!

Mit freundlichen Grüßen  
[REDACTED]

[REDACTED]

---

Figure B.8: Targeted default: letter students in the control group received prior to the initial sign-up period

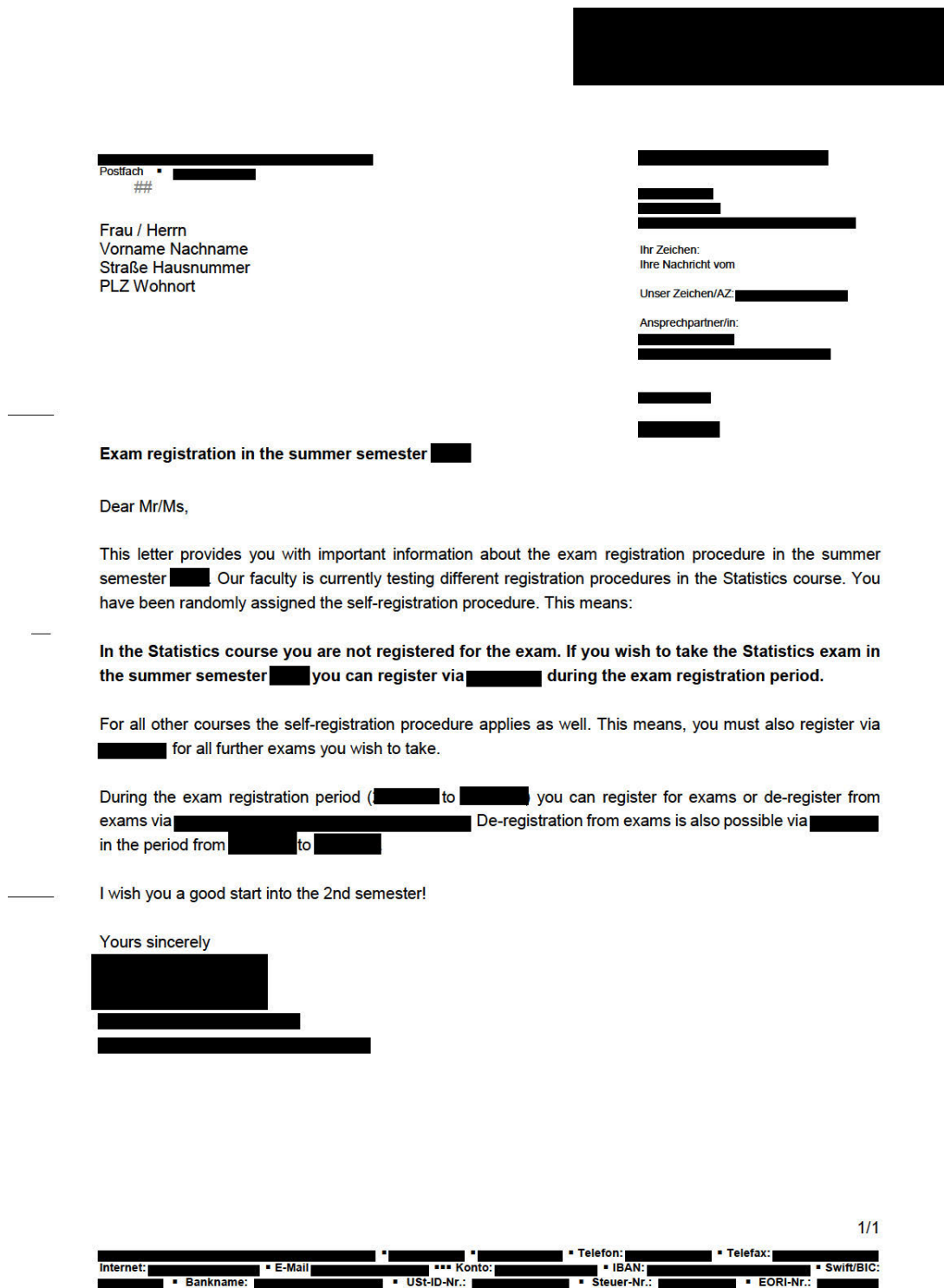


Figure B.9: Targeted default: letter students in the treatment group received prior to the initial sign-up period

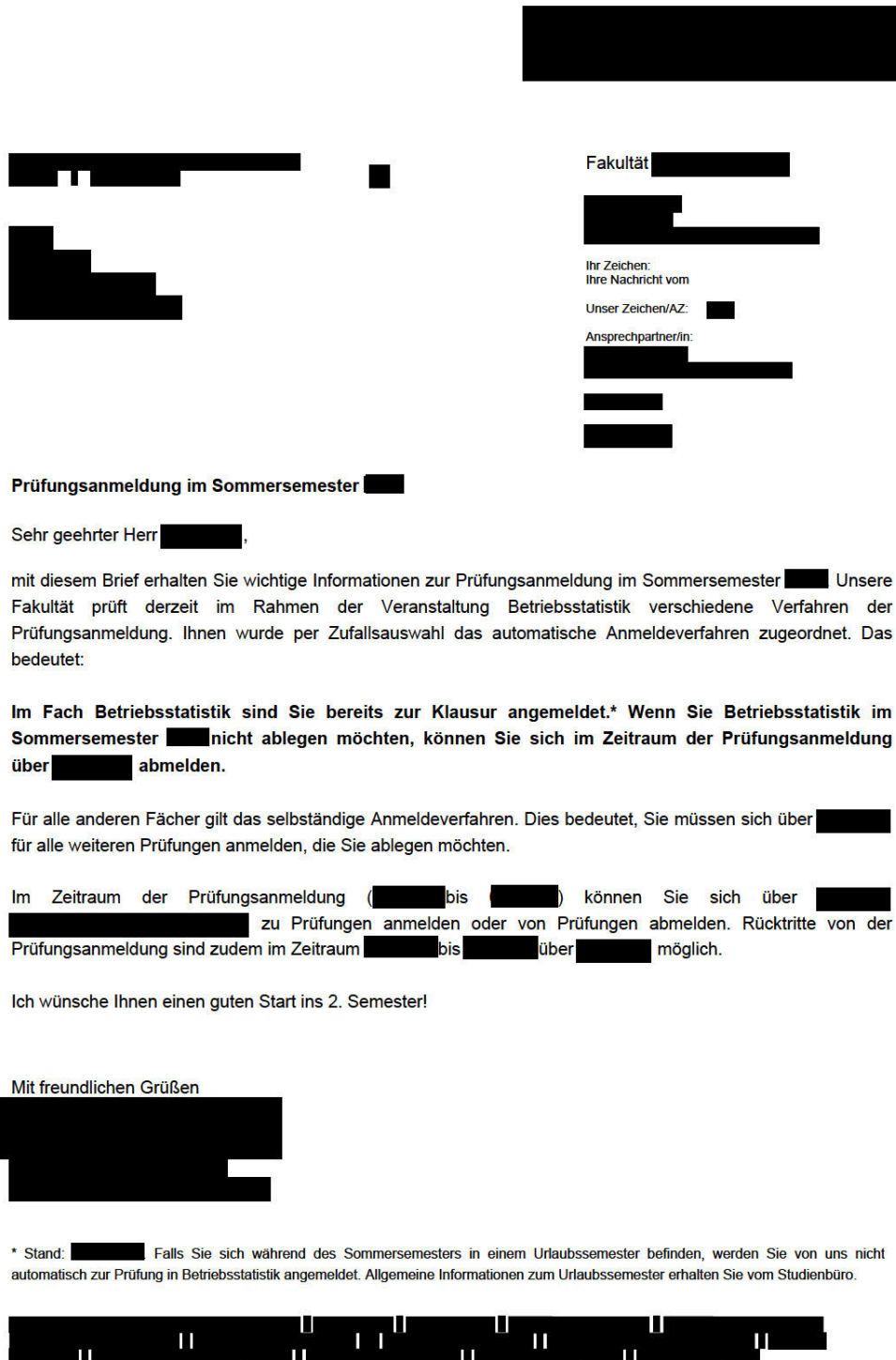


Figure B.10: Targeted default: letter students in the treatment group received prior to the initial sign-up period

