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SUCCESS

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# The Consequences of Academic Dismissal for Academic Success \*

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## Abstract

Academic dismissal policies make it possible for universities to dismiss students from an educational program based on their first-year performances. This study examines the long-term academic effects of academic dismissal for two cohorts of Dutch students who started a bachelor program in 2009 or 2010. These students are academically dismissed when they are below a predetermined academic threshold level at the end of their first year. The empirical results show no significant differences in obtaining a degree or study duration between students around the academic dismissal threshold. Of the students who are observed below the academic dismissal threshold, 85.3 percent switch to the same (43.4%), or to an adjacent (41.9%) academic program. Hence, even though academic dismissal induces switching behavior, it does not prevent students from obtaining an academic degree, nor delay students.

These results indicate that AD policies force students out of their preferred university without realizing their intended purpose of redirecting students to a different field of study more aligned with their preferences/capabilities. By transferring a selective student sub-population to the same -or adjacent- educational program, AD does not realize the intended efficiency or effectiveness gains. If anything, AD operates as a warning system that induces students to put in more effort after switching to still be academically successful.

JEL-codes: I21; I22

Keywords: Academic Dismissal, Higher Education, Educational Attainment, Student Graduation

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# 1 Introduction

Enrollment in higher education has increased substantially around the world. Over the course of the first decade of the 21st century, tertiary education participation rates rose by 10 percentage points or more in several regions including the US, Europe, East Asia, and Latin America (Scott-Clayton and Sacerdote, 2016; Van Klaveren et al., 2018). This is accompanied by a substantial increase, in absolute figures, in the number of incoming students who do not successfully finish their higher educational program. For example, the rate of completion across OECD countries in tertiary education is around 70% (OECD, 2010). It is in this respect that so-called academic dismissal (AD) policies can play an important role. Academic dismissal is a performance-based "after the gate" selection mechanism used to remove students who do not make satisfactory academic progress already early on from the educational program. Academic dismissal is often preceded by a process of academic warning, probation and/or suspension. The purpose of AD policies is ostensibly to benefit not only the teacher and institution (i.e. retaining only talented and motivated students), but also the student (i.e. guiding a student to a program in which one is more likely to succeed) (Onderwijsraad, 2008; Koning de et al., 2013). Yet, emerging (quasi-)experimental results with respect to academic probation are negative with respect to both retention and graduation (Sneyers and De Witte, 2018).

Although AD can have a large impact on selection, motivation and the overall academic career of students, only a handful of evaluations have been performed. In a literature review, Sneyers and De Witte (2016) found that AD increased first-year drop out, but had little positive effect on student learning outcomes. In the Netherlands, AD policies have been installed since 1998. The credits-threshold at which a student receives a positive advice varies per university and even per study program, but is usually set around two thirds of the number of credits students should attain in the first year. Upon receiving a negative advice, the study must be terminated. Arnold (2014) found that the introduction of an academic dismissal policy in the Netherlands increased first year dropout with 6 – 7%, and concluded that student dropout is not reduced by an academic dismissal policy, but rather bringing it forward. Koning de et al. (2013) found the number of students in the Netherlands that were cleared to enter their second year was the same as before the introduction of the AD, even though student's overall credits were lower after AD was introduced. Eijsvogels et al. (2015) also assessed the effect of the implementation of AD. The average number of credits was equal before and after the introduction of AD, implying little effect. For medical students in the Netherlands, it was found that AD does not lead to earlier dropout rates or higher completions and study rates in the following two years (Stegers-Jager et al., 2011). Finally, comparing trends in programs with or without AD, Sneyers and De Witte (2016) find that introducing AD increased first-year dropout and overall graduation, but that student satisfaction reduced after the installment of AD policies.

The aforementioned evaluations are all performed at the program-level and do not take into account that individual students differ importantly both between and within programs. In partic-

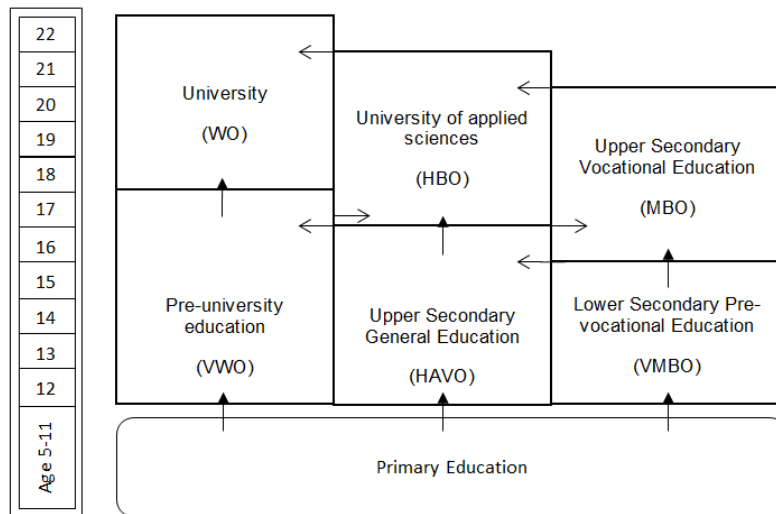
ular, whether or not a (strict) AD policy is in place can have important implications for the pool of students a program attracts in terms of academic ability and motivation. Furthermore, within a particular program, students who fail to meet the credits-threshold will likely also differ from students who pass; for example in terms of general academic ability. A significant reason for first-year dropout is that entering students, despite having graduated from secondary or high school, nonetheless lack the specific skills required for success in their chosen field of study (Scott-Clayton et al., 2014). Therefore, this study departs from recognizing that observed first-year switching behavior may reflect the iterative process of making an optimal higher education decision. Switching towards a different educational programs might then be more optimal than continuing with the current educational program and will be more beneficial to both student and university. Academic Dismissal (AD) policies importantly influence this switching process. On the one hand, when the credit-threshold applied is appropriately chosen -as to distinguish students who will succeed from those that will eventually fail-, it serves as additional information to the student in optimizing the switching process (i.e. bringing forward the correct decision to switch or drop out). On the other hand, problems occur when credit-thresholds are determined more arbitrarily. For example, when the credit-threshold is too lenient, some students will wrongly perceive that they possess the specific skills required for the program (i.e delay the correct decision to switch or drop out). However, if the threshold is too strict, some students will be wrongly forced to quit the program (i.e. bring forward the wrong decision to switch or drop out). We apply this to explain patterns of success in higher education, by comparing students within programs who are positioned just around the academic dismissal threshold at the end of year one on long-term academic outcomes (i.e. propensity to graduate, study duration). Furthermore, we examine whether AD-policies primarily foster drop-out, switches within the initial field of study or switches to a different field fo study.

This paper proceeds as follows. Section 2, outlines the Dutch education system. Section 3 describes the data used and the specific system of academic dismissal in place. Section 4 shows the descriptive statistics and the estimation and findings are discussed in Section 5. Finally, Section 6 concludes.

## **2 Dutch Higher Education System**

The general structure of the Dutch educational system is shown in Figure 1. Dutch compulsory schooling law requires children to start with primary education in the year they turn five years old. Children are tracked into different secondary education levels upon finishing primary education (grade six). This decision is based on the test scores achieved on a standardized nation-wide test and on the advice of the primary school teacher. Children can be tracked into three secondary education levels: (1) pre-vocational education (4 years), (2) general secondary education (5 years), and (3) pre-university education (6 years). Pre-vocational education prepares children for vocational education, secondary general education prepares children for

**Figure 1.** Dutch education system



Note: This Figure is taken from Cornelisz and Van Klaveren(2018)

universities of applied sciences, and pre-university education prepares children for universities.

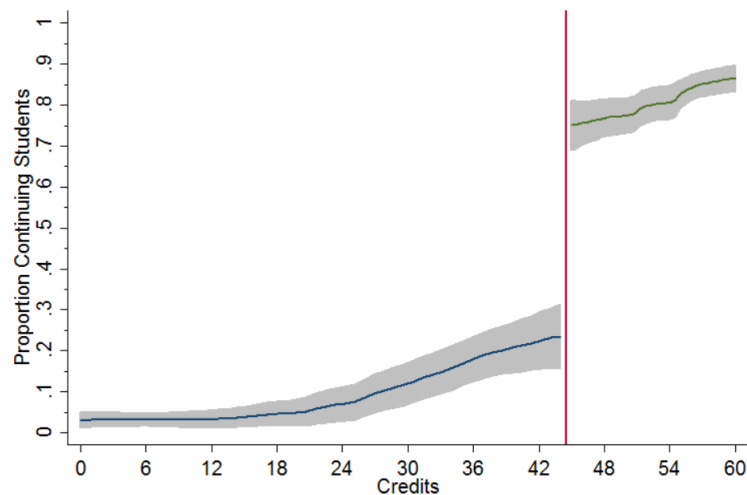
In general, students can enter university if they have passed the national exam in pre-university education or when they have successfully finished the first year of a university of applied sciences. There are some uncommon exceptions which also make students eligible for university (e.g. colloquium doctum), which are described in detail in (Sneyers and De Witte, 2017). Students who enter university start with a bachelor’s program (typically 3 years), after which they either enroll in a 1 (or 2) year(s) master’s program or enter the job market. Students who receive their master’s degree have the opportunity to start with a PhD or can enter the labor market.

### 3 Data and Academic Dismissal in the Netherlands

#### 3.1 Data

This study combines administrative data of the Economics and Business Faculty of the University of Amsterdam with registration data of Statistics Netherlands. The university data contain information on academic dismissal, student enrollment and performance in the first year for the academic years 2009/2010 and 2010/2011. The data of Statistics Netherlands provide background characteristics of all students in the Netherlands, such as age, gender, ethnicity and SES. These data furthermore provide longitudinal information on graduation status and study duration, together with the educational program and institution. A total of 1707 first-year students entered the educational programs offered by the aforementioned faculty in the academic year 2009/2010 and 2010/2011. For these students, we measure the graduation and study duration

**Figure 2.** Student proportion that continues the educational program after year 1



outcomes until August 2017, which implies that we observe 8 (7) academic years for students who started in 2009/2010 (2010/2011). This observation window is sufficient to observe completed education spells, given a nominal three-year duration of a bachelor program.

### 3.2 Academic Dismissal in the Netherlands

The 1998 Law *Higher Education and Scientific Research* requires all government-funded Dutch universities to advise students at the end of the first year on whether to continue in the program. This advice can be non-binding at some programs, but educational programs have increasingly installed a binding version, the so-called binding study advice (BSA). The objectives of this *selection after the gate* policy are twofold in that it aims to ensure that higher education programs can continue with a group of talented and motivated students after the first year, and also to advise students already at an early stage whether or not the program is appropriate for them (Onderwijsraad, 2008; de Koning et al., 2014).

Dutch students in higher education can earn in total 60 credits each academic year. Setting the academic dismissal threshold is at the discretion of the institution (de Koning et al., 2014), varies across educational programs, but is usually around two-thirds of the total (i.e. 40 credits) (van het Onderwijs, 2010). For the educational programs considered in this study, students receive academic dismissal if they obtain less than 45 credits in their first year. When academically dismissed, students have the option to either enroll in another higher education program -at the same or different institution-, or to drop out from higher education altogether.

**Table 1.** Description of Student Characteristics

	Population			
	N	Range	Mean	SD
Cohort 2009	1,707	{0,1}	0.49	0.50
Female	1,707	{0,1}	0.29	0.46
Age	1,707	{16,35}	19.03	1.75
Dutch background	1,707	{0,1}	0.81	0.39
Credits	1,707	{0,60}	35.60	22.83
GPA Secondary School	1,079	{5.6,8.7}	6.78	0.53
Academic Dismissal threshold	1,707	{0,1}	0.48	0.50
Number of students	1,707			

*Note:* *N* for the indicator variables cohort, female, Dutch and Negative advice represent the number of students who have a certain characteristic.

## 4 Descriptive Statistics

Table 1 describes the student population of the Economics and Business Faculty of the University of Amsterdam considered in this study. Both student cohorts are of equal size and only the pooled descriptive statistics are shown, as there were no significant differences in background characteristics between both cohorts. Students are predominantly male, are on average 19 years old, and 81 percent of the students have a Dutch background. Background is defined using the definition of the Netherlands Statistics, which labels students as Dutch if *both* parents were born in the Netherlands. Students obtained, on average, 35.6 of the 60 credits in their first year. For the 1,079 students who started with the bachelor program directly after finishing pre-university education, we could retrieve the Grade Point Average of the school-leaving exit examination. The grading scale of this examination is for each subject from 1 (lowest) to 10 (highest), and the table shows that the average GPA is 6.8.

Table 1 shows that 48 percent of the first-year students who started at the Economics and Business Faculty obtained fewer than 45 credits at the reference date of credits obtained in June. Figure 2 shows, for the student population considered here, the proportion that continues the educational program after year one. The figure reveals a relatively fuzzy discontinuity, even though the academic dismissal policy stipulates that students who obtained less than the required threshold of 45 credits ought to be academically dismissed. This fuzziness is due to (1) the right students have to appeal for a dismissal waiver, and (2) potential delays in grade reporting. Appeals for academic dismissal waivers are only occasionally granted by the Board of Examiners, such that the bulk of observed continuations to the left of 45 credits can be explained by the relatively early announcement date of academic dismissal at which teachers still had to enter and report (some) grades (e.g. from resit exams). What is important for the objective of this study is the first-stage result that -indeed- a strong discontinuity does exist around the academic dismissal threshold in terms of continuation of the bachelor program in year 2.

**Figure 3.** Observed transitions for students below and above the academic dismissal threshold

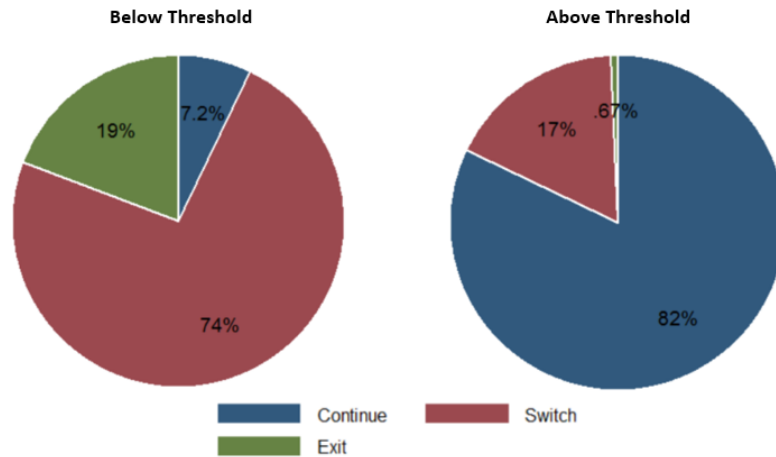


Figure 3, shows -separately for the group who did and did not meet the academic dismissal (AD) threshold in June- whether students continued the educational program, switched to another educational program or dropped out from higher education entirely. Of the 811 students who scored below the AD threshold, 74 percent switched to another program in higher education and 19 percent dropped out of higher education entirely. Around 7 percent of these students could continue the educational program due to receiving late course credits or resits or the aforementioned exemption possibilities. Students who met the AD threshold in June of the first year mostly continued the educational program in year 2, but 17 percent of the students still chose to switch to a different educational program. There are a few students (.67%) who decided to leave higher education entirely, despite having passed the AD threshold in year 1.

Figure 4 shows the relationship between student characteristics and credits earned. The figure shows that the background characteristics of students are to some extent related to credits earned when comparing averages of the groups on both sides of the academic dismissal threshold. Yet, around this cutoff none of these background characteristics are statistically significantly different. Therefore, estimated outcome differences around the cutoff are not driven by observed differences in student background characteristics.

## 5 Estimation strategy and Findings

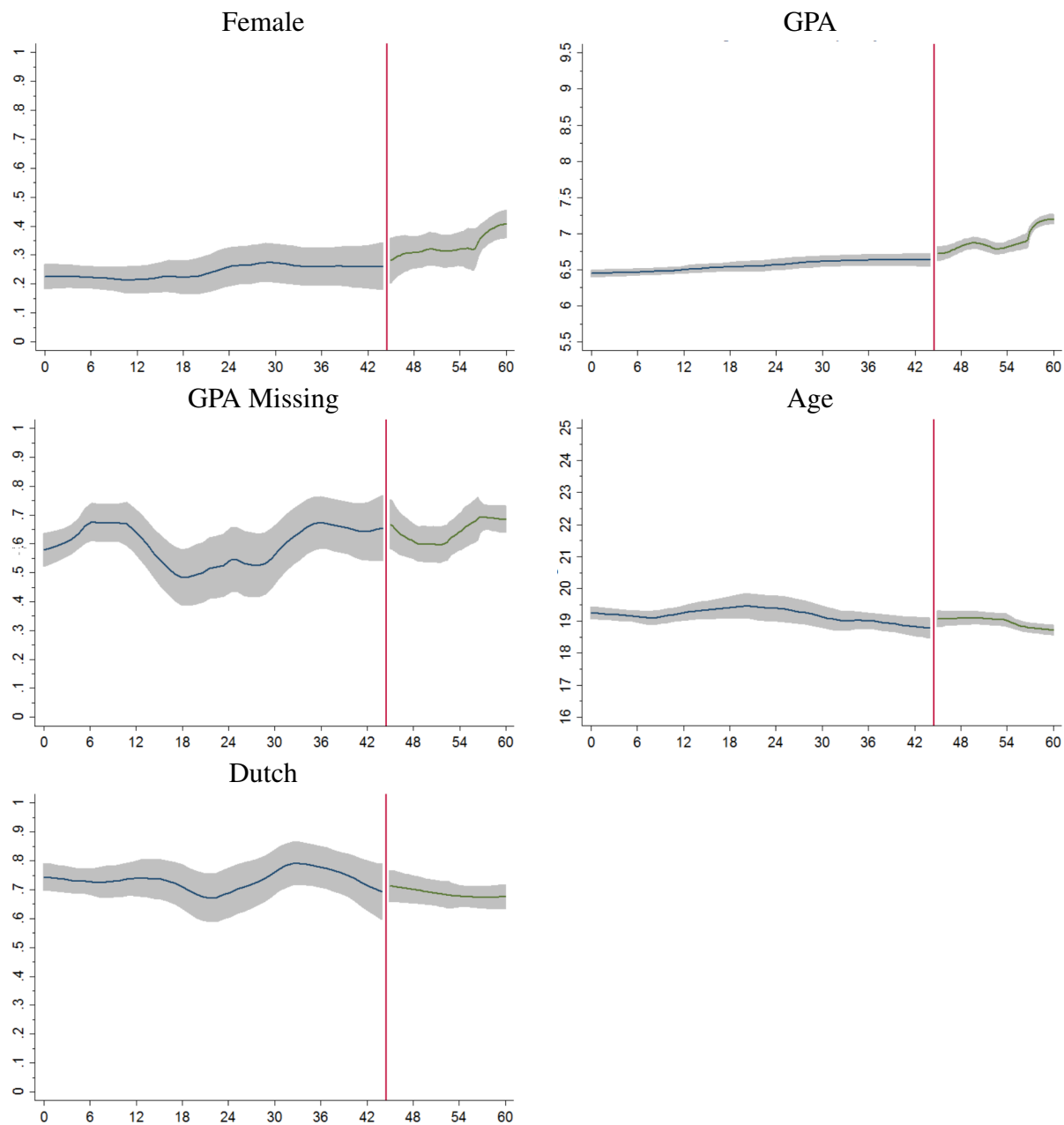
### 5.1 Estimation Strategy

We start with estimating an Ordinary Least Squares (OLS) model and compare graduation status and study duration between students who are and are not academically dismissed:

$$Y_i = \delta_0 + \delta_1 T_i + \delta_2 GPA_i + \delta_3 x_i + v_i. \quad (1)$$



**Figure 4.** Student Characteristics by Credits Obtained



Indicator variable  $T$  equals 1 when the student has earned fewer than 45 credits and zero otherwise,  $GPA_i$  represents the GPA-score achieved in pre-university education, and  $x_i$  represents a set of student and faculty controls. To control for student background and ability differences we estimate the outcome-difference at the cutoff by estimating the following regression discontinuity models (Angrist and Pischke, 2009; Imbens and Lemieux, 2008):

$$Y_i = \alpha_0 + \alpha_1 T_i + \alpha_2 GPA_i + \alpha_3 x_i + g^-(\cdot) + g^+(\cdot) + \varepsilon_i. \quad (2)$$

In this equation, function  $g$  represents the linear, quadratic or cubic trend relationship of the forcing variable  $C$ (redits) that best fits the observed trend relationship to the right and left of the cutoff. We consider a particular trend relationship as best fit when all higher order polynomials are significant in the Wald estimation model.

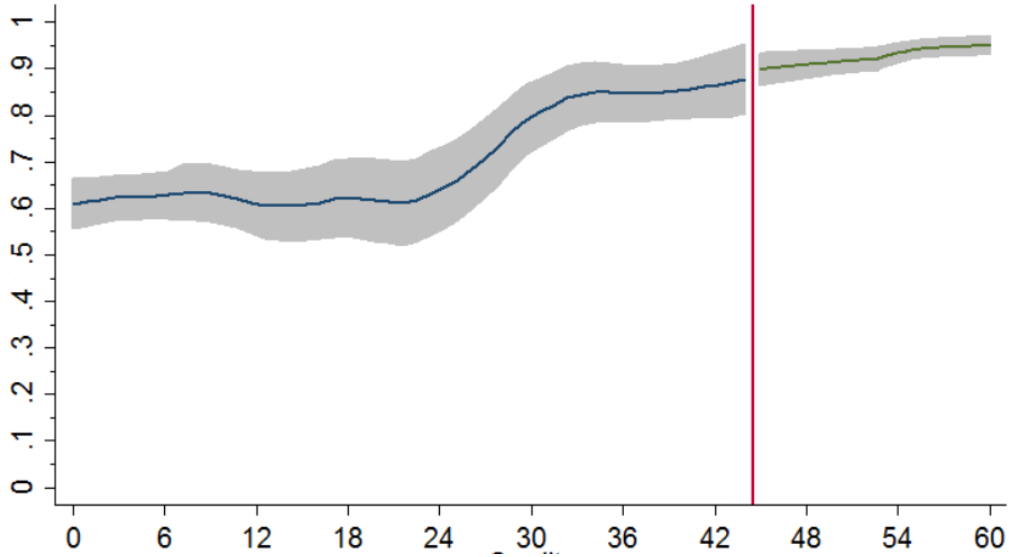
In contrast to a regression discontinuity evaluation design, variation around the academic dismissal threshold is not exogenous. Students and teachers are well aware that continuation in the educational program after the first year is contingent on surpassing the pre-established credit threshold. Presumably, it is the group of relatively better students who -when just below the academic threshold near the end of the year- will display such beneficial behavior and will be more likely to end up just above the cutoff after doing the retake exams. In this study, we should therefore recognize that a negative and significant  $\alpha_1$  can indicate that students are selectively surpassing the threshold and -hence- does not only represent the effect of academic dismissal. Then, if  $\alpha_1$  is found to be zero (or positive), this implies that the potential negative selection bias assumption above -with respect to receiving academic dismissal- either is not present or that the endogenous selection bias is (more than) offset by a positive effect of receiving academic dismissal (e.g. by enforcing a switch to a program which better suits their ability or preferences or by acting as an important wake-up call). The latter outcome could be perceived as relatively desirably. Yet, if  $\alpha_1$  is found to be negative, it is not clear to what extent there is either a negative selection bias and/or whether the effect of receiving academic dismissal is negative, making it more difficult to assess this result from a policy-perspective.

Furthermore, given the explicit intention of the academic dismissal policy to reallocate students to an academic program more suited to individual capacities and preferences, we also empirically examine in which fields of study and programs students are observed in the year after having received academic dismissal.

## 5.2 Findings Academic Degree

Figure 5 shows a kernel-plot of the proportion of students who have obtained a degree by the running variable credits earned. The Figure, shows that the student proportion obtaining a degree is - from 24 credits onward- an increasing function of credits earned. As expected, the proportion of students with a degree is on average lower for students who failed to meet the academic threshold in year 1, but around the cutoff this difference is not significantly different.

**Figure 5.** Obtained Degree by Obtained Credits



To obtain more accurate and precise estimates of the outcome difference -both at the cutoff and between both academic dismissal groups-, we estimate Equation 1 and 2. Let  $z$  represent the re-scaled running variable (i.e.  $z = C - 45$ ). The Wald estimation model indicated that the quadratic and linear trend relationship approximated the trend relationship of the forcing variable best, i.e.<sup>1</sup>

$$g_i^- = \begin{cases} \gamma_1 z + \gamma_2 z^2 & \text{if } AD_i = 1 \\ 0 & \text{otherwise} \end{cases} \quad [Quadratic]$$

$$g_i^+ = \begin{cases} \gamma_3 z & \text{if } AD_i = 0 \\ 0 & \text{otherwise} \end{cases} \quad [Linear]$$

Table 2 shows the OLS estimates, without the trend relationships included in the regression (i.e. Columns 2 and 3), and the baseline regression discontinuity estimates (i.e. Columns 4, 5 and 6). The OLS results presented in Column 2 show that, for students who fail to reach the academic dismissal threshold of 45 credits, the proportion obtaining a university degree is 26 percentage points lower than for students who earn at least 45 credits at the end of year 1. The inclusion of background characteristics does not affect the estimated association between meeting the academic dismissal threshold and obtaining a degree. These estimation results reflect outcome differences that may be driven by (un)observed student ability and background

<sup>1</sup>We note that the other functional form combinations for the trend relationships yielded similar estimation results, both in terms of significance as in coefficient.

**Table 2.** Estimation Results: Degree

	(1)	(2)	(3)	(4)	(5)
$T$	-0.261*** (0.023)	-0.248*** (0.019)	0.062 (0.052)	0.055 (0.052)	0.038 (0.051)
Constant	0.933*** (0.012)	1.428*** (0.238)	0.889*** (0.026)	0.692*** (0.210)	1.183*** (0.247)
Trend Relationship Left	.	.	Quadratic	Quadratic	Quadratic
Trend Relationship Right	.	.	Linear	Linear	Linear
GPA Controls		✓		✓	✓
Student controls		✓			✓
$R^2$	0.110	0.171	0.140	0.161	0.197
$N$	1,707	1,707	1,707	1,707	1,707

Note: Robust standard errors in parentheses. \*\*\*/\*\*/\* denote significance at a 10/5/1 percent confidence level. The included student controls are: sex, age, pre-education and nationality.

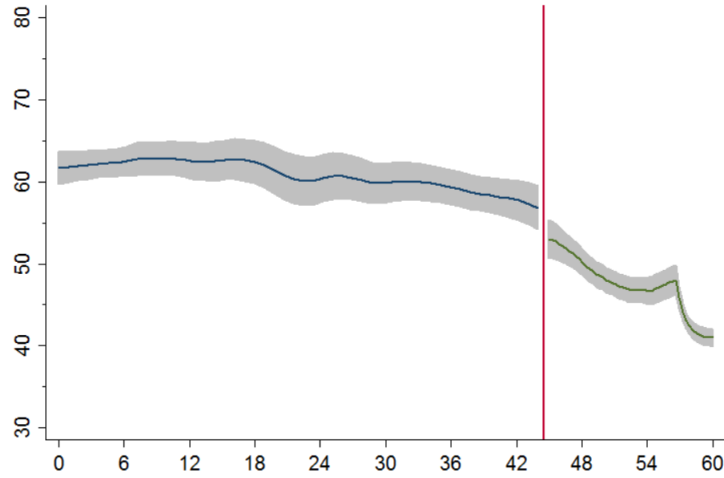
characteristics.

When estimating the outcome difference around the academic threshold, there is no significant difference in obtaining a degree between the two groups, which indicates that the academic dismissal policy does not seem to restrict students who are just below the threshold to obtain an academic degree, despite the fact most have to start in a new educational program the year after. Again, the inclusion of GPA and student controls increase the overall explained variance, but not so much the precision of the estimated coefficient of  $T$ . Figure 5 shows that the observed trend relationships are markedly different for students who have obtained 24 credits or less and students who have obtained more than 24 credits. This indicates that trend differences do not seem to be driven by academic dismissal at 45 credits. A plausible explanation for the latter difference seems to be that it reflects a threshold effect of ability and/or study behavior differences on the propensity to graduate.

### 5.3 Findings Study Duration

Academic dismissal may not only influence the likelihood of obtaining a degree, but also affect study duration. Of the 1,707 students considered in this study, 1,538 students obtain a bachelor degree (i.e. 90 percent). For these 1,538 students, Figure 6 shows a plot of the study duration in months by the running variable obtained credits (in year 1). We note that the study duration for students who pass all subjects timely in their first attempt and obtain their bachelor degree is 36 months. The figure shows that the study duration for students failing to meet the AD threshold is approximately 60 months and substantially longer than the nominal duration. Whereas duration until degree is notably shorter for students meeting the AD threshold in year 1, it is still the

**Figure 6.** Duration until Degree



case that even students who obtain all 60 credits in their first year take on average longer to obtain their degree than this nominal duration of 36 months. Furthermore, the figure shows that average duration until degree for students just at the right of the cutoff is only slightly lower than that of students just to the left of the cutoff, but that this difference is not statistically significant.

The Wald estimation model indicated that a quadratic and cubic trend relationship approximated the trend relationship of the forcing variable best, i.e.

$$g_i^- = \begin{cases} \delta_1 z + \delta_2 z^2 & \text{if } AD_i = 1 \\ 0 & \text{otherwise} \end{cases} \quad [Quadratic]$$

$$g_i^+ = \begin{cases} \delta_1 z + \delta_2 z^2 + \delta_3 z^3 & \text{if } AD_i = 0 \\ 0 & \text{otherwise} \end{cases} \quad [Cubic]$$

Table 3 shows that the average study duration for students who obtained a degree after failing to meet the AD threshold in year 1 is 13.7 months longer than students obtaining a degree after passing the AD threshold in year 1, when controlling for student background characteristics. The estimation coefficient remains positive for students around the cutoff, but is much smaller and not statistically significant. Similar to the degree results, the empirical results suggest that increased study duration seems to be caused by ability rather than academic dismissal. Problematic with the estimated study duration coefficients, is that these do not take into account selection into a degree. Therefore, Figure 7 plots the proportion of students for whom study duration was missing by obtained credits in the first year. Essentially, this figure is the mirror image of Figure 5. Important for this study is that selective study duration observation for

**Table 3.** Estimation Results: Study Duration

	(1)	(2)	(3)	(4)	(5)
<i>T</i>	15.70*** (0.663)	13.71*** (0.706)	1.451 (2.196)	1.427 (2.188)	1.038 (2.170)
Constant	45.28*** (0.416)	14.31*** (8.784)	54.14*** (1.527)	37.17*** (7.362)	39.91*** (8.992)
Trend Relationship Left	.	.	Quadratic	Quadratic	Quadratic
Trend Relationship Right	.	.	Cubic	Cubic	Cubic
GPA Controls		✓		✓	✓
Student controls		✓			✓
Peak Clearance					
$R^2$	0.289	0.329	0.348	0.353	0.372
<i>N</i>	1,381	1,381	1,381	1,381	1,381

*Note:* Robust standard errors in parentheses. \*/\*\*/\*\* denote significance at a 10/5/1 percent confidence level. The included student controls are: sex, age, pre-education and nationality.

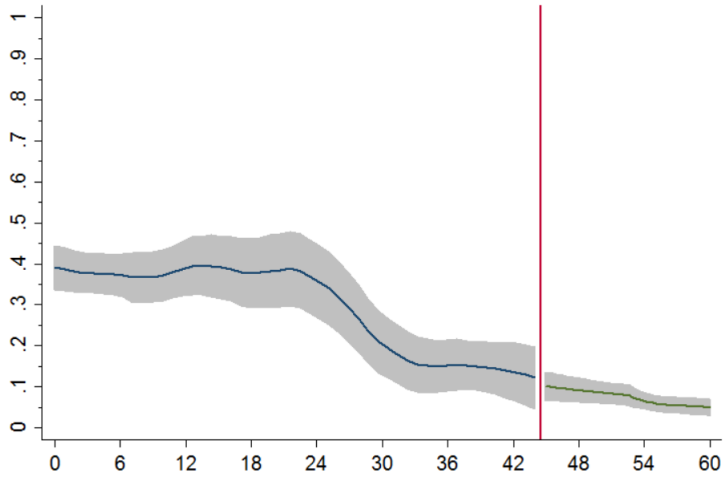
students who have obtained more than 24 credits can be accurately described by a linear trend, and -as such- that the discontinuity estimates are not influenced by selection into a degree or selective observations of study durations.

## 6 Do Students Below the Academic Threshold Switch Between or Within Field of Study?

When students below the academic dismissal threshold switch educational program after their freshman's year they can switch between and within fields of study and switch within and between universities. The advantage for students to switch to another university in the same academic program (e.g. Economics) is that they receive exemptions for some subjects and do not have to start all over again. However, a potential disadvantage may be that these students already experienced that the particular academic program is too challenging for them and -therefore- run the risk that this will be the case again. Students who switch to a different field of study may experience that this program better matches their ability and preferences. At the same time, there is also a risk that these students will again choose an academic program that does not match their ability or preferences.

Table 4 shows the reallocation of switching students in year 2. Of the 811 students who failed to meet the AD threshold, 156 students (or 19 percent) left higher education entirely, 58 students (or 7.2 percent) continued in the education program (e.g. due to dismissal waiver or credits earned in retakes) and 597 students switched education programs and/or institutes. Of these students, 43.4 percent switch to the same academic program, 41.9 percent switch to an

**Figure 7. Missing Duration**



**Table 4. Reallocation in year 2 of switching students**

		Switch Universities	
ISCED Field of Study in Second Year	Same Program	No	Yes
ISCED Field 3	No	164 (27.5%)	86 (14.4%)
	Yes		259 (43.4%)
Other ISCED Fields {1,2,4,5,6,7,8}		0	45 (7.5%)
Missing			43 (7.2%)
Total		597	

*Note: ISCED stands for International Standardized Classification of Education. ISCED Level 3 capture social & Behavioral Sciences, Business, Administration & Law.*

adjacent field of study and only 7.5 percent of the students switch to a distinctively different field of study. When students switch universities, 59.8 percent go to the same academic program (i.e. 259/(597-164)) and 19.9 percent of the students enroll in an adjacent field of study (i.e. 86/(597-164)). Therefore, 85.3 percent of the students who are below the academic dismissal threshold do not make a major academic switch. Given that academic dismissal does not have major negative consequences for students in terms of a longer study duration or obtaining a degree, it seems that the AD policy did not significantly affect the long-term academic outcomes of students.

## 7 Conclusion

Academic dismissal policies make it possible for universities to dismiss students from an educational program when it is expected, on the basis of their first-year performances, that they do not finish their study or obtain a degree timely. This paper evaluates the long-term effect the Dutch academic dismissal policy on the students' probability of obtaining a degree and study duration. We consider two student cohorts (1,707 students) who started a bachelor program in the academic years 2009/2010 and 2010/2011 at the Economics and Business Faculty of the University of Amsterdam. Students who obtain less than 45 credits in their first year are academically dismissed and can either switch to another field of study, can switch to the same field of study at another university or can leave higher education entirely.

We find that students who fail to meet the academic dismissal threshold at the reference date in year 1 (June), continue with a study in higher education in 81.2 percent of the cases. These students have a lower propensity to obtain an academic degree and a longer study duration until graduation than students who are not academically dismissed, but this difference may be driven by underlying differences in student characteristics. Therefore, we estimated a regression discontinuity model; thereby examining if students around the cutoff differ with respect to obtaining an academic degree and study duration.

The discontinuity estimates show that there is no significant difference in obtaining a degree or study duration between students around the academic dismissal threshold. These results show that academic dismissal does not prevent students from obtaining an academic degree, and maybe more surprisingly also does not seem to significantly delay students. Different explanations can be given for the latter result. Students can experience academic dismissal as a serious warning and put in more effort after switching studies with the objective to be academically successful. Students may also switch to studies that better matches their abilities and preferences, such that reallocating to a different bachelor program allows them to undo the delay. Finally, an explanation is that students receive many exemptions when switching to the same field of study at another university institute, such that academic dismissal does not necessarily imply a study delay. These explanations are also in line with the observation that 85.3 percent of the students who are below the academic dismissal threshold do not make a major academic switch. It is even so that 43.4 percent of the students switch to the same academic program at another university.

It is important to recognize that the empirical results may be strongly related with the geographical location of the higher education institution. The faculty considered in this study is surrounded by several neighboring universities, which means that students who are academically dismissed can participate again in the same academic program at a different university. These students thus have several outside options nearby, which may cancel out the potential negative effects of academic dismissal on academic success. This could suggest that students who enroll at other universities might not have similar outside reallocation options and the po-



tential negative effects of academic dismissal may therefore be larger for students enrolled at more geographically isolated universities.

From a policy perspective, academic dismissal policies were installed to dismiss students from an educational program when it is expected that they will not obtain a degree or experience too much study delay as to guide them to a program that is more suited. In the sample considered here, this intended effect is not realized, given that the vast majority of dismissed students are reallocated to the same field of study or even the same academic program at a different university. Even though the findings show that students are not harmed by the academic dismissal policy in terms of graduation opportunities, they also show that the threshold is not accurately chosen, because the expectation that students just below the threshold will not obtain an academic degree in this academic program is incorrect. Under the assumption that the availability of outside options would not cancel out the potential negative effect of academic dismissal, our results indicate that a more appropriate threshold would be 24 credits, given that at this threshold there appears to be a natural trend difference. As such, the results presented here beg to examine if the findings of this study are replicated for students enrolled in different programs with different academic thresholds and at more geographically isolated universities.

## References

- Arnold, I. J. M. (2014). The effectiveness of academic dismissal policies in dutch university education: an empirical investigation. *Studies in Higher Education*, 40:1068 – 1084.
- Cornelisz, I. and Van Klaveren, C. (2018). Student engagement with computerized adaptive practicing: Ability, task value and difficulty perceptions. *Journal of Computer Assisted Learning*, pages 1–15.
- de Koning, B. B., Loyens, S. M., Rikers, R. M., Smeets, G., and van der Molen, H. T. (2014). Impact of binding study advice on study behavior and pre-university education qualification factors in a problem-based psychology bachelor program. *Studies in Higher Education*, 39(5):835–847.
- Eijsvogels, T. M. H., Goorden, R., Bosch van den, W., and Hopman, M. T. E. (2015). The binding study advice in medical education: a 2-year experience. *Perspectives on Medical Education*, 4:39 – 42.
- Koning de, B. B., Loyens, S. M. M., Rikers, R. M. J. P., Smeets, G., and Molen van der, H. T. (2013). Impact of binding study advice on study behavior and pre-university education qualification factors in a problem-based psychology bachelor program. *Studies in higher education*, 39:835 – 847.
- OECD (2010). How many students drop out of tertiary education? Technical report.

- Onderwijsraad (2008). Een succesvolle start in het hoger onderwijs. Technical report.
- Scott-Clayton, J., Crosta, P., and Belfield, C. (2014). Improving the targeting of treatment: Evidence from college remediation. *Educational Evaluation and Policy Analysis*, 36(3):371–393.
- Scott-Clayton, J. and Sacerdote, B. (2016). Access to higher education: Introduction to the special issue. *Economics of Education Review*, 51:1–3.
- Sneyers, E. and De Witte, K. (2016). Interventions in higher education and their effect on student success: a meta-analysis. Technical report, TIER WORKING PAPER SERIES.
- Sneyers, E. and De Witte, K. (2017). The effect of an academic dismissal policy on dropout, graduation rates and student satisfaction. evidence from the netherlands. *Studies in Higher Education*, 42(2):354–389.
- Sneyers, E. and De Witte, K. (2018). Interventions in higher education and their effect on student success: a meta-analysis. *Educational Review*, 70(2):208–228.
- Stegers-Jager, K. M., Cohen-Schotanus, J., Splinter, T. A. W., and Themmen, A. P. N. (2011). Academic dismissal policy for medical students: effect on study progress and help-seeking behaviour. *Medical Education*, 45:987 – 994.
- van het Onderwijs, I. (2010). Bindend studieadvies: een landelijk beeld.
- Van Klaveren, C., Kooiman, K., Cornelisz, I., and Meeter, M. (2018). The higher education enrollment decision: feedback on expected study success and updating behavior. *Journal of Research on Education Effectiveness*.