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Working Paper Series
Number 274

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[Recommended citation](#)

Branson, N., Hendry, J., Ranchhod, V. (2020). The effects of credit rationing on re-enrollment rates at a University in South Africa. Cape Town: SALDRU, UCT. (SALDRU Working Paper No. 274)

ISBN: 978-1-928516-36-1

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The effects of credit rationing on re-enrollment rates at a University in South Africa

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Saldru Working Paper 274
University of Cape Town
December 2020

Abstract

How important are credit constraints for educational persistence and performance at the university level¹ in South Africa? We use institutional data to measure the impact of credit rationing on re-enrollment rates at the University of Cape Town (UCT). Identifying variation is obtained from a policy change in the eligibility requirements for continued financial aid that occurred in 2015. Our difference-in-differences point estimate is -0.074 and is statistically significant at the 1% level of significance. We also estimate a difference-in-difference-in-differences model to identify whether the policy had heterogeneous effects for relatively lower income students who received funding from the National Student Financial Aid Scheme (NSFAS). We find that the policy resulted in a 5.5 percentage point decrease in re-enrollment rates amongst students who were not previously on NSFAS funding, while the corresponding estimate amongst NSFAS students was approximately 13 percentage points. These findings suggest that credit constraints are binding on the decision to re-enroll, but only for a relatively small proportion of the students who were affected by the change in the policy.

Key words: Credit constraints, South Africa, financial aid

¹ University level education in South Africa is equivalent to college level education in the US.

1. Introduction

What are the effects of credit constraints on university² re-enrolment in South Africa? We make use of a 2015 change in how the financial aid renewal decision was made at a University in South Africa in order to answer our question. Up until 2015, eligibility for continued funding was only weakly conditional on prior academic performance. In 2015, the university enforced a rule whereby students who did not pass at least 50% of the courses that they had enrolled in in the previous academic year, did not continue to receive financial aid.

The full cost of studying for an undergraduate degree at the university we study is high. Total costs can easily exceed R100 000 per annum, which is approximately South Africa's GDP per capita³. In combination with the extreme income inequality⁴, it becomes clear that most people would find the cost of attending this university unaffordable without outside assistance.

The institution assists all academically eligible students who cannot afford to pay their fees with the full cost of study. The funding provided is a combination of state provided National Student Financial Aid Scheme (NSFAS) funding and institutional funding, referred to as GAP funding. NSFAS provides low-income learners with loans on favourable terms based on a financial means test and academic promise. The institution we study supplements these funds by covering any shortfall in the full cost of funding or providing assistance to students with financial need whose family income is nonetheless above the NSFAS income threshold.

Due to budgetary pressures, improved targeting of funding to students with academic potential has become increasingly important. De Villiers et al. (2013) tracked the trajectories of the first cohort of NSFAS students and found dropout rates of approximately 40%. The enforcement of the "50% pass rate" renewal rule is aimed at better targeting which students receive continued financial support. In addition, from 2015 onwards, students were no longer required to annually re-apply for financial aid. If they met the renewal criteria, they would have funding automatically allocated to them.

We use this policy change as a natural experiment for a change in available financial aid. Our primary findings are that the policy induced a 5.5 percentage point decline in the re-enrolment rate amongst the non-NSFAS funded group of students, with more socioeconomically disadvantaged students experiencing an additional 7.5 percentage point reduction in re-enrolment rates.

² University level education in South Africa is equivalent to college level education in the United States.

³ This is obtained using World Bank data.

⁴ South Africa's Gini coefficient is above 0.6.

2. Related literature

There is a substantial economics literature on the effects of credit constraints on enrolment and persistence, mostly focussed on the USA (Acemoglu, D., and Pischke, J. S. (2001), Carneiro and Heckman 2002; Belley and Lochner 2007; Lovenheim 2011; Cohodes and Goodman 2014; Sjoquist and Winter 2015; Castleman and Long 2016; Scott-Clayton and Zafar 2016; Denning et al. 2018 and others, see Dynarski (2002), Deming and Dynarski (2010), Lochner and Monge-Naranjo (2012) and Page and Scott-Clayton (2016) for reviews) and some studies from other developed nations (e.g. Coelli 2011 for Canada, Cardak and Vecci 2015 for Australia, Glocker 2011 for Germany). The evidence on the relationship between income and post-secondary educational enrolment and attainment in developing countries is relatively new (Solis 2017; Melguzio et al. 2016; Haung et al. 2018). Solis (2017) uses a regression discontinuity design in Chile and finds that students who score just above the loan cut-off have a 100 percentage points increase in immediate enrolment and are 50 percentage points more likely to ever enrol. In addition, loan access eliminates the income gap in enrolment and years of attainment. Melguzio et al. (2016) use a quasi-experiment that results from students being selected to be eligible for the financial aid based on their school leaving score which varies by geographic area. This means that academic ability varies within the group that receives funding and allows them to identify the impact of access to financial aid on enrolment and persistence for students in Colombia. They find increased enrolment and reduced dropout for students who receive support. Finally, Haung et al. 2018 use different matching techniques to examine the impact of receiving a loan or needs based funding in China. They find no impact on academic outcomes, but a small increase in working among those receiving loans.

The challenge researchers in this literature face is to isolate the causal effect of income on education levels, recognising that part of the observed relationship reflects early investments made during childhood rather than credit constraints per se (see Carneiro and Heckman 2002 for a discussion). Another empirical challenge is to identify which students have binding credit constraints. As pointed out by Dynarski (2002), subsidising the cost of education lowers costs and therefore will increase demand, regardless of how constrained individuals are, with the effect magnified in environments where credit markets are imperfect. Educational investment models predict that students who experience binding income constraints will benefit most from access to aid. Therefore, some studies have investigated the relationship between income and educational attainment among low income students (e.g. Cameron and Taber 2004; Brown et al. 2012; Lochner and Monge-Naranjo 2011) while others have used other novel techniques to identify those students who are credit constrained (Stinebrickner and Stinebrickner 2008 Andrews et al. 2010; Linsenmeier et al. 2006).

A related and growing literature is how financial aid affects persistence, student behaviour, graduation and subsequent earnings, conditional on post-school enrolment. Separating the impact of credit constraints on persistence measures, from those on the decision to enrol provides evidence that can be used to assess policies to encourage student success among those who have already made the decision to attend. One strand of this literature looks at how performance-based scholarships that set academic requirements for scholarship renewal (e.g. academic probation) affect student progression (Lindo et al. 2010, Scott-Clayton 2011, Casey et al. 2018). These studies find that students respond to the threat of losing funding, sometimes in positive ways and other times in negative ways. There is also evaluation work that examines the impact of additional incentive grants to low income students on financial aid (e.g. Barrow and Rouse, 2018, Barrow et al. 2014).

Less is known about what happens to students once they lose their funding, the literature directly relevant to our study. Carruthers and Ozek (2016) look at the impact of losing the merit-based HOPE scholarship as a result of not meeting the academic requirements. They find a large effect on enrolment, with low income students most affected, and a small simultaneous reduction in credits taken and increase in earnings while studying. Their findings are consistent with credit and cash flow constraints that necessitate the work-college trade-off. They argue that these results are concerning when the high reward to tertiary education is compared to the small potential loss in support. They suggest that student support programs should work to identify students sensitive on these margins and push them towards other aid programs rather than letting them dropout.

We found two studies that examine the impact of the loss of needs-based funding of student outcomes (Schudde and Scott-Clayton 2016 and Scott-Clayton and Schudde 2019), both situated in the US. Schudde and Scott-Clayton (2016) use a regression discontinuity design (RDD) and a difference-in-differences (DD) specification to examine the impact of Satisfactory Academic Performance (SAP) measures for Pell recipients on persistence and graduation. They find null results in their RD specification and negative post first year persistence results and small positive effect on graduation and transfer to 4-year college in their DD specification. They conclude that this is evidence that SAP has more of a weeding out effect, early on in studies, than an incentivising effect. They note that while this may be politically palatable, it could be a concern if Pell students who are already at a higher risk of dropping out, are not being given the same chance to adjust and achieve in college.

Scott-Clayton and Schudde (2019) adapt Bénabou and Tirole (2002)'s model to explicitly model the trade-off a social planner encounters when deciding on performance measures. Using difference-in-

different designs they show the heterogeneous effects on academic and labour market outcomes of students by distance from the satisfactory academic performance threshold. Consistent with the model they find that during the academic probation period, discouragement effects (dropout) are higher for those students further from the threshold, while encouragement effects (improved GPAs) are observed for students closer to the threshold. However, once the consequences of SAP begin to be enforced, students are found to reduce enrolment and the reduction in credits attempted is larger than the reduction in credits completed. As a result, by the end of the observation period, no overall positive impacts are evident. The authors conclude “that SAP appears to improve the efficiency of aid dollars” (Scott-Clayton and Schudde, 2019, 6). Students from low income households on financial aid are however more sensitive to dropping out as a result of not meeting SAP than their similarly able but financially independent peers. Therefore, the authors note that the equity aspect of such policies need to be taken into account in assessments as SAP may be pushing out students who could benefit the most from college but are most at risk of dropping out.

Of the South African literature, Lam et al. (2013) use a longitudinal data set from the Cape Area Panel Study (CAPS) in 2002. They find that the relationship between household income and university enrolment is mostly apparent at the top of the income distribution, a result that the authors interpret as a possible indication that credit constraints play a role in enrolment decisions. Gurgand et al. (2011) make use of matched individual data from a credit granting institution (Eduloan), combined with data from South Africa’s Department of Education between 2004 and 2007. They use a regression discontinuity design (RDD) for identification and estimate that applicants who receive a loan were 20 percentage points more likely to enrol in university than applicants who did not receive the loan. One limitation of their study, however, is that the estimation sample is restricted to a self-selected subsample of potential students who had submitted a loan application to a for-profit credit provider. This could potentially exclude a large fraction of needy students. Another limitation is that the RDD estimator only provides an estimate at the point of the discontinuity, which is problematic where there may be substantial heterogeneity in the effect of credit constraints for people from different income groups (Scott-Clayton and Schudde 2019).

This study contributes to the literature on the effects of credit constraints on persistence in developing countries, which may have substantially different estimates as compared to developed countries, due in part to credit market imperfections. More specifically, we focus on a policy change in South Africa that applied to the renewal of state funded loan based financial assistance. We therefore also contribute specifically to the literature documenting the impact of loss of funding on student

performance. We use university transcript data from the period from 2010 and 2015, and fit difference-in-differences and difference-in-difference-in-differences models to the data, in order to estimate the effect of credit rationing on re-enrolment amongst a subset of students. This would be the first study, to our knowledge, examining this in a developing context. In addition, the unexpected change in the policy adherence provides a clean estimate of the impact of losing funds rather than behavioural changes i.e. credit constraints versus behavioural changes.

3. Institutional context

The institution we study endeavors to cover the full cost of study for all academically eligible students who apply for financial aid.⁵ Full cost of study differs by program and year of study and includes tuition fees, books, accommodation, travel and a living allowance. The institution provides two financial aid packages. First, students eligible for the state National Student Financial Aid Scheme (NSFAS) receive a top-up bursary to cover the shortfall between the NSFAS maximum amount⁶ and the full cost of studying at the institution⁷. The second package, known as GAP funding, is provided to students in need of financial aid whose family income is above the NSFAS income threshold.

At the time of the study, NSFAS provided loans⁸ based on income eligibility with repayment terms that were favourable in comparison to bank and other student loans. NSFAS applicants undergo a means test that assesses their financial need. The formula accounts for household income, the number of dependents in the household, and living costs. It also determines the amount the family is required to contribute toward study costs, the Expected Family Contribution (EFC). This measure is used along with academic merit to calculate a score on which to rank students and allocate NSFAS funds. A student's loan amount is calculated as the average full cost of studying at their university less bursaries awarded, less EFC.

NSFAS provided favourable loan repayment terms. Interest is not paid while the student studies and for up to 12 months after the student leaves the institution. Thereafter, interest is charged at 80% of the repo rate (the rate charged by the reserve bank for loans to banks). Interest is charged on the capital

⁵ The university's officials have repeatedly stated in public that *"All people who apply for admission and for financial aid, and get an academic offer, will be assisted [financially] if they meet the eligibility criteria.*

⁶ NSFAS sets a maximum loan amount each year for all universities. This amount is below the average full cost of studying at traditional universities such as the university studied.

⁷ Recent increases in fees have led to FCS at traditional universities outstripping the NSFAS cap.

⁸ In December 2017, the South African president at the time unexpectedly announced that all NSFAS grants to students would be bursaries rather than loans from 2018 onwards.

amount only and accrues to a maximum of the initial capital amount. Repayment begins once the student has found employment and is earning over a threshold amount. The repayment amount is calculated based on earnings, starting at 3% and increasing to a maximum of 8%.

In addition to these favourable loan terms, up to 40% of the loan could be converted to a bursary each year, depending on the student's academic achievement and there was a Final Year Programme, launched in 2011, that converted the full loan amount in the final enrolment year to a bursary for students who graduated.

GAP funding is a combination of a tuition fee bursary and a loan amount with loan repayment terms similar to the NSFAS ones.

Until 2015, NSFAS loans at the institution we study were administered via the university funding office. In 2016, the institution joined the centralised NSFAS administration which requires all students to apply for financial aid directly from NSFAS. In preparation for the transfer to the centralised NSFAS system, the institution enforced the renewal rule in 2015^{9,10}. This rule required that students pass 50% of their courses¹¹ in order to continue receiving funding. Students on NSFAS or GAP funding were notified of the change in the enforcement of the renewal rule at the start of 2014 and again during the middle of the year. The communication (see Appendix A) indicated two changes in the administration of NSFAS funding. First, and of primary focus in this paper, was the requirement that student's pass 50% of their courses to continue receiving funding. This condition applied to both NSFAS and GAP funded students. Second, from 2015, students were no longer required to re-apply for financial aid and therefore, if they met the renewal criteria, would be automatically allocated funding.

⁹ This enforcement of the policy was part of a NSFAS coordinated pilot that included the institution we study, with the overall objective being the centralization of NSFAS. Prior to full centralization, NSFAS required the relevant schools to be consistent in how funding decisions were made, whereas previously each university had considerable discretion in these decisions. This process of centralization was ongoing during 2015. For the period of our study, the institution continued to allocate funds to its students via the financial aid office.

¹⁰ The information on the details of the policy enforcement, its implementation, and the reasoning behind the change, were all obtained from multiple interviews with the institution's student financial aid manager.

¹¹ All courses are equally weighted with practical courses not included.

4. Theoretical framework

We assume that students are dynamically rational and decide to re-enrol if re-enrollment is both feasible and makes economic sense. Feasibility requires that there are available alternative funding sources if the student is no longer eligible for financial aid (e.g. family loans, scholarships, employment). On the other hand, dynamic rationality requires an understanding of the cost and benefits of re-enrolment which includes both the likelihood of subsequently graduating and the payoffs to graduating rather than not finishing university. The policy change shifts the parameters in the student's decision-making process and could have an impact either due to feasibility or due to dynamic rationality.

We adapt the theoretical framework provided by Linsenmeier et al. (2006) to describe how the change in the renewal policy could affect a student's decision to reenrol.

Assume a simplified two period world where students have a utility function $U(Y)$ with Y equal to income after graduation. Students are risk averse and $U'(Y) > 0$ and $U''(Y) < 0$ i.e. utility is increasing in income at a decreasing rate. In period 1, the student decides whether to reenrol and continue with their education or to dropout of university. In period 2, the student either gets a good job G with probability p , or a bad job (or no job) B with probability $(1 - p)$. p is determined by a priori beliefs about graduation and the employment and earnings returns to university education. Simplifying further, we assume that all students need loans to enrol which have repayments L in period 2. Before the renewal policy change, L is positive but favourable i.e. NSFAS and GAP loans, or at least part of the loan, can be converted to a bursary and the loans are designed with low repayment rates starting only once employment is found. After the policy change, students who failed 50% of their courses would have to seek funding elsewhere under repayment conditions that are likely to be less favourable, take up employment or dropout.

A student chooses to reenrol if the expected utility from continuing is greater than the expected utility of not continuing, i.e. the net benefit θ is positive. Assume expected utility from reenrolling is

$$E(U_e) = pU(G - L) + (1 - p)U(B - L)$$

And from dropping out is

$$E(U_d) = A$$

We therefore require that

$$\theta = E(U_e) - E(U_d) > 0$$

$$\theta = pU(G - L) + (1 - p)U(B - L) - A > 0$$

To assess the impact when the conditions of L change, we can compute

$$\frac{d\theta}{dL} = -pU'(G - L) + (1 - p)U'(B - L)$$

Given that $U'(Y) > 0$ for all Y , $\frac{d\theta}{dL} < 0$. Therefore, if L increases due to less favourable conditions after the renewal change, the net benefit of reenrolment, θ , decreases making reenrolment less attractive.

In addition, we are interested in the extent to which the attractiveness of reenrolment depends on p , the probability of a good job, we can compute

$$\frac{d^2\theta}{dLdp} = U'(B - L) - U'(G - L)$$

Which is positive given diminishing marginal returns to income. Therefore

$$U'(B - L) > U'(G - L) \quad (1)$$

Those students with lower p values will have a larger loss in utility from the increase in L which will affect the relative attractiveness of reenrolling i.e. the change in the renewal policy is expected to have a greater impact on those with a lower a priori expected probability of a good job.

Scott-Clayton and Schudde (2019) and Lindo et al. (2010) use a principle agent model to describe the heterogeneous outcomes that can be observed when academic performance measures are implemented. The key insight is that more academically able students will be encouraged to improve their performance, while lower academically abled students will be discouraged and dropout. In our model, this heterogeneity would appear in p .

Some students cannot reenroll because they lack the economic means – it is not feasible – while others choose not to reenroll because the parameters have shifted such that it is no longer an economically rational choice. For example, they could borrow from a parent but do not think it is worthwhile to burden their family given the odds of graduation success or the repayment terms. The outcomes that we observe are a combination of these two motivating factors, and therefore our estimate of the impact of credit rationing on re-enrollment is likely to be an upper bound of the proportion of students who are credit constrained.

5. Data

We use annual individual level administrative data on cohorts who entered our study institution between 2010 through 2014 in all programs of study.¹² Table 1 sets up the data by calendar year so that we can examine re-enrolment in 2015, the first year that the policy was enforced.

Our variable of interest is re-enrolment. The analysis is therefore restricted to respondents who have completed at least their first year of studies. At the end of each year a student receives an academic standing code. This determines whether they are eligible to graduate, continue studying, or are excluded from studying further within the institution. Good academic standing does not equate to a student passing 50% of their courses. Students who exit the database before 2015 without qualifying but remain eligible to continue are classified as having not re-enrolled.¹³

6. Econometric model

The most common approach used in the literature to identify the relationship between income and educational attainment is RDD. However, as argued by Scott-Clayton and Schudde 2016/9 in the conceptual model, “encouragement effects should be strongest for those nearer to this threshold, while discouragement effects should be larger for individuals further below the threshold. Unfortunately, the RD is ill-equipped to test this important implication, because the RD estimates effects only for those right at the cut-off. The difference-in-difference allows us to examine the effect of performance standards ..., over and above the effects for non-recipients, for a wider range of students affected by the policy.”

Recognising this, we employ difference-in-differences (DD) and difference-in-difference-in-differences (DDD) to estimate the effects of the change in the renewal of financial aid on student re-enrollment decisions.¹⁴

$$reenrol_{it} = \alpha_0 + \beta_1 Fail50_{i,t-1} + \beta_2 Post + \beta_3 (Fail50_{i,t-1} \times Post_t) + \mathbf{X}'_{i,t-1} \beta_4 + \mathbf{I}'_{i,t} \beta_5 + \epsilon_{it}$$

¹² Of the total 47 575 observations, we restrict our sample to students within the first four years of study who were in good academic standing at the start of the year. This yields an analysis sample of 39 451 observations. Unsurprisingly, we find a larger share of observations on NSFAS funding in our analysis sample than in the full records

¹³ Note that in our discussion, financial aid students include both NSFAS and GAP funded students.

¹⁴ Given that we consider the first group of students subjected to the policy change, and that the financial aid support received is substantial, we can plausibly identify the causal effects of the price change on student re-enrollment decisions.

Where $reenrol_{it}$ is one if the individual re-enrols and zero otherwise, α_0 is a constant, $Fail50_{i,t-1}$ indicates individual i failed more than 50% of his/her courses in the preceding year (t-1) and $Post_t$ is a dummy for 2015. β_3 is the key parameter. It reflects the change in re-enrolment rate in 2015 relative to the previous periods (i.e. before the rule change), amongst the subset of students who failed more than 50% in the preceding year. X_{it-1} is a vector of time varying individual characteristics¹⁵ and vector $I_{i,t}$ ¹⁶ accounts for any changes in aggregate population characteristics over time.

Students from families of limited means are more likely to be sensitive in their re-enrollment decision to the change in the policy (Andrews et al. 2010; Linsenmeier et al. 2006; Cameron and Taber 2004; Brown et al. 2012; Lochner and Monge-Naranjo 2011). The effects of the policy change will therefore vary by family income. We do not observe family income in our data but know who receives NSFAS funding, a good measure of financial need. To explore this potential heterogeneity, we estimate:

$$\begin{aligned} reenrol_{it} = & \alpha_0 + \beta_1 Fail50_{i,t-1} + \beta_2 NSFAS_{i,t-1} + \beta_3 (Fail50_{i,t-1} \times NSFAS_{i,t-1}) + \beta_4 Post \\ & + \beta_5 (Fail50_{i,t-1} \times Post_t) + \beta_6 (NSFAS_{i,t-1} \times Post_t) + \beta_7 (Fail50_{i,t-1} \\ & \times NSFAS_{i,t-1} \times Post_t) + \mathbf{X}'_{i,t-1} \beta_8 + \mathbf{I}'_{i,t} \beta_9 + \epsilon_{it} \end{aligned}$$

Where $NSFAS_{i,t-1}$ indicates the student was on NSFAS funding in the preceding year (t-1). Our coefficient of interest is β_7 .

The differences-in-differences framework is particularly well suited to eliminate the influence of factors that are fixed over time, but nonetheless affect the re-enrollment decision. Our estimates will therefore be robust to anything that may impact the re-enrollment decision but does not change between 2014 and 2015. Given our assumptions (in Appendix C we test the assumptions of the model), only a factor that both influences the likelihood of failing 50% and re-enrollment at the same time as the policy change can contaminate our estimates. Individual characteristics will influence the re-enrollment decision. Failing to account for the influence of individual characteristics on the decision to reapply can lead to biased estimates of the effects of the policy change on the re-enrollment decision. Similarly, students from low socioeconomic status schools or entering with lower entrance marks might be less prepared for university and therefore approach the re-enrollment decision in a different manner. The inclusion of individual, entrance and high school characteristics reduces the bias of our estimated treatment effect.

¹⁵ Number of courses taken, NSFAS funding, GPA and cumulative GPA in the preceding year.

¹⁶ Gender, race and the ex-authority of the student's school.

7. Results

Table 2 presents the difference-in-differences regression results.¹⁷ In column 1 the post coefficient of -0.007 indicates that students were on average 0.7 percentage points less likely to re-enrol in 2015 compared to prior years and the large and statistically significant coefficient on the failed 50% coefficient indicates that students who failed 50% of their courses were 22 percentage points less likely to re-enroll. The Post*Failed50%previously coefficient, the estimate of the impact of the policy change on re-enrolment, is -0.074 and statistically significant at the 1% level. This represents a 9.6 percent decrease in re-enrolment rates relative to the pre-2015 period average re-enrolment rate, among students who failed 50%.

In the subsequent column information on prior university performance, number of courses taken, academic year of study and NSFAS receipt in the prior year is included. The final column also includes race, gender and school type.¹⁸ These controls have little impact on the difference-in-difference estimate, increasing it only marginally to -7.6 percentage points.

Next, we examine differences in the treatment effect depending on whether a student received NSFAS funding, a group that would be most socioeconomically in need, or not. GAP funded students who come from relatively richer families, are left in the non-NSFAS funded group. The β_5 coefficient measures the impact of the policy change on the richer students (likely driven by the GAP students). The sum of the coefficients $\beta_5 + \beta_7$ measures the average impact of the policy change on the poorer NSFAS students. We focus the discussion on the triple interaction term Post * Failed 50% * on NSFAS previous year, which measures the additional effect that the policy change has had on lower income NSFAS students relative to higher income students among those who fail.

Approximately 9% of NSFAS funded students fail 50% of their courses in each year compared to about 4.6% of students not on NSFAS financial aid. Table 3 shows that failing 50% is less predictive of re-enrolment among NSFAS financial aid students than among students not funded via NSFAS. We see

¹⁷ Table B2 in the appendix shows similar results using a table of means. Re-enrolment among those who fail 50% but are in good academic standing, averages 77% in the pre-2015 period, and drops to 68.7% in 2015, an 8.3 percentage point drop. Re-enrolment rates for those who pass 50% remain high and constant across all years at 98%.

¹⁸ In Table B1 in the appendix, we compare the characteristics of students who pass versus fail 50% of their courses. The table shows that students in the failed group are in marginally earlier stages of their degrees, have lower GPAs and have taken, on average, fewer courses in the preceding year. The group also has a higher share of Africans, males, students previously on financial aid and students with lower entrance marks. Students who attended schools defined as DET or HoR are over-represented in the fail 50% group, relative to the pass 50% group, while students who attended Cape Education Department schools are relatively under-represented.

however that the percentage decline in re-enrolment in 2015 among those who fail 50% is larger for NSFAS funded students than those not funded.

Our DDD estimates are presented in Table 4. The Post * Fail 50% coefficient represents the estimated impact of the policy change on students not funded via NSFAS who failed more than half of their courses. They are found to be 5.5 percentage points less likely to re-enroll in 2015 compared to similar students who passed 50% of their courses. The point estimate of β_7 indicates that the change in the renewal criteria increased the likelihood that NSFAS funded students who failed 50% of their courses would not re-enroll, relative to similar non-NSFAS funded students. These students are found to be an additional 7.6 percentage points less likely to re-enroll. As such, the policy is estimated to have reduced enrolment among the NSFAS funded students by 13 percentage points (5.5+7.5). Columns 2 and 3 include additional covariates in the DDD specification. The key DDD estimates remain unchanged but are more precisely measured.

8. Discussion

Tables 3 and 4 showed that a large percentage of students, 75% or 113 students, continued to re-enrol in 2015 even though the policy implied that they should lose their funding. Table 5 and Figure 1 explore this puzzle.

Table 5 shows that the policy does appear to have been strictly applied. In 2014, 74% of NSFAS funded students (92) who failed 50% of courses re-enrolled with continued financial aid support, while in 2015 only 26%, or 40 students, continued receiving financial aid without having successfully completed 50% of their courses.¹⁹

Figure 1 shows the change in this re-enrolment gap between 2014 and 2015 graphically. In addition, for those who do re-enrol, current financial aid status is displayed. In the right-hand panel, we see that among students who pass 50% or more of their courses, almost 100% re-enrol in both years. Interestingly, we see a large increase (14 percentage points) in the proportion re-enrolling on financial aid among those who pass. This reflects the change in the renewal process whereby students were no longer required to reapply for funding as funding in 2015 was automatically allocated to students who

¹⁹ These 40 students were allowed to re-enrol and continue to receive NSFAS funding. Most of these cases involved either exceptional circumstances or relatively senior undergraduate students who were close to graduating (Table 6 shows that 70% were meant to be in their qualifying year in 2015).

met the eligibility requirements and is in line with other studies that find that simplifying the financial aid processes can be beneficial (Deming and Dynarski, 2010). In the left-hand panel we see that re-enrolment among those who failed 50% of their courses decreased for both NSFAS and non-NSFAS students (possibly due to GAP funded students), but the decrease was almost double the size (11.5 percentage points) within the NSFAS funded group compared to those not on NSFAS funding (6.5 percentage points).

At the same time, our results indicate that most students continued to enrol even though they did not receive financial assistance. We use our theoretical model to unpack this puzzle.

The large proportion continuing to enroll without funding suggests that it remains financially feasible and rational to do so. In other words, even after the change in the renewal rule, the loan repayment, L , still results in a net positive benefit to reenrolling (i.e. $\theta > 0$). How are students funding their studies such that L remains relatively favourable? One option is that students are not in fact credit constrained. A recent analysis of students from the same institution (Branson, 2018) shows that students use a range of funding strategies including family support, bank loans and employment to fund their studies. Therefore, the fact that most students reenroll, suggests that once NSFAS is removed students can switch to a different funding strategy that continues to be financially beneficial. Note, this strategy could include not paying their tuition fees.

Table 6 provides information on EFC for students who failed 50% by whether they decided to enroll or dropout. We further distinguish those who received funding versus those who did not. EFC information is only available for 75% of these students, ranging from 93% for those who enroll on funding in 2015 to 67% for those who enroll without funding in 2015. All students are required to pay a minimum EFC amount of R1050, with less financially needy students paying progressively more. Table 6 shows that the proportion of students paying the lowest EFC amount is highest among the group that dropout, suggesting that students in this group come from the lowest income families and are therefore likely to be most constrained.

We saw from equation 1, that students who had lower probabilities of getting a good job, i.e. p , were predicted to be more sensitive to an increase in L . Given that p is higher for students that graduate, we expect the weakest among the group who fail 50% (but remain eligible to continue) to be most sensitive to the change in the renewal rule.

Table 6 provides information on factors that are predictors of graduation and hence p . While the analysis sample is restricted to students that were in good academic standing i.e. academically eligible to continue, many students who fail 50% are only allowed to continue as a result of a concession from the university. Indeed, 91% of students who dropped out were provided a concession to proceed, significantly more than those that enroll without funding. In addition, their GPAs at the end of 2014 are significantly lower.

The results from the table are therefore in line with our model which suggests that students who have a lower p , are likely to be more sensitive to a change in the renewal rule. In addition, the students who dropout appear to be the lowest income students and are therefore least likely to have other options to support themselves without NSFAS funding.

9. Conclusion

How important are credit constraints for university enrolment in South Africa? We focus on a policy change that restricted eligibility for continued financial aid amongst academically under-performing students. We estimate that the reduced availability of financial aid caused a statistically significant decrease of 7.4 percentage points amongst the affected sub-population of students overall. Moreover, amongst relatively less affluent students, the decrease was approximately 13 percentage points. This suggests that credit constraints do matter for the decision to continue pursuing a tertiary education.

At the same time, our results indicate that a large majority of students continued to enrol even though they did not receive financial assistance. This is puzzling and could be interpreted in one of two ways. Either most of the students in our sample who receive financial aid are not credit constrained in the true sense, or else they re-enrolled with the hope of finding funding during the course of the academic year. Our data do not allow us to separate between these two hypotheses, but we do find that those who reenrol without funding have relatively higher EFC and better academic outcomes when compared to those who dropout. This is in line with findings from Scott-Clayton and Schudde (2019) and Lindo et al. (2010) who show that students closer to the academic performance cut-off are encouraged to remain in school and improve their performance, while students lower down from the academic threshold are induced to dropout.

In any case, we need to be cognisant of the fact that our study is located at one of the wealthiest universities in South Africa. The institution charges higher fees than any other South African university,

and probably has a more affluent student body than most of its counterparts. This raises a question about the external validity of our findings, and it would not be prudent to generalize from these results to the national population of potential university students.

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Tables and Figures

Table 1: Sample sizes

In the data					Analysis Sample		
	# Students	# Obs	# Obs on Financial Aid	% Obs on Financial Aid	# Obs	# Obs on Financial Aid	% Obs on Financial Aid
All	18761	47575	6454	0.136	39451	6300	0.160
Entry cohort:							
2010	3680	13392	1710	0.128	9902	1628	0.164
2011	3623	12268	1601	0.131	9555	1559	0.163
2012	3934	10929	1414	0.129	9423	1391	0.148
2013	3742	7188	1090	0.152	6894	1084	0.157
2014	3782	3798	639	0.168	3677	638	0.174
Year of re-enrolment:							
2011		3645	578	0.159	3511	576	0.164
2012		7001	1063	0.152	6679	1051	0.157
2013		10388	1459	0.140	9081	1438	0.158
2014		12509	1477	0.118	9757	1434	0.147
2015		14032	1877	0.134	10423	1801	0.173

Notes: Table 1 presents the number of students, the number of observations (since students have multiple entries) and the number of students on financial aid, overall, by entry cohort and by year of enrolment. Our analysis sample is restricted to students within the first four years of study who are in good academic standing. Since information in the university records is only available for those who enrol, we impute the final year of data as not enrolled for those who exit the database before 2015 on good academic standing.

Table 2: Diff-in-diff estimates of the effect of the enforcement of the 50% pass rule on enrolment at UCT

Dependent Variable: Re-enrolment			
Failed 50%	-0.215*** (0.011)	-0.081*** (0.011)	-0.077*** (0.010)
Post	-0.007*** (0.002)	-0.007*** (0.002)	-0.008*** (0.002)
Post X Failed 50% previous year	-0.074*** (0.023)	-0.076*** (0.021)	-0.077*** (0.020)
Constant	0.982*** (0.001)	0.675*** (0.034)	0.641*** (0.035)
N	39,151	39,151	39,151
R-squared	0.091	0.200	0.204
Entry cohort	No	Yes	Yes
On NSFAS previous year	No	Yes	Yes
Cumulative GPA from previous year	No	Yes	Yes
Courses taken in previous year	No	Yes	Yes
Female, population group indicator	No	No	Yes
School's authority under apartheid	No	No	Yes

Notes:

1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
2. Standard errors are clustered at the individual level.
3. Sample includes those students re-enrolling in university in academic years 2-4.
4. *Post* is an indicator for 2015.
5. Failed 50% indicates that the student did not pass at least 50 percent of the courses enrolled in in the previous year.

Table 3: Re-enrolment rates conditional on previous year's NSFAS status and Pass 50% status

	# of Obs N	NSFAS in previous year				No NSFAS in previous year			
		Failed 50% in previous year		Passed 50% in previous year		Failed 50% in previous year		Passed 50% in previous year	
		Mean	#	Mean	#	Mean	#	Mean	#
Re-enrolling:									
All years	39451	0.859	464	0.988	5806	0.708	1084	0.979	30838
2011-2014	29028	0.900	350	0.992	4316	0.725	812	0.980	22710
2011	3511	0.900	45	0.993	548	0.647	88	0.975	2703
2012	6679	0.894	76	0.992	984	0.721	186	0.983	5253
2013	9081	0.931	121	0.991	1280	0.756	266	0.981	7167
2014	9757	0.871	108	0.991	1504	0.727	272	0.980	7587
2015	10423	0.755	114	0.977	1490	0.662	272	0.975	8128

Table 4: Diff-in-diff-in-diff estimates of the effect of the enforcement of the 50% pass rule on enrolment at UCT

Dependent Variable: Re-enrolment			
Failed 50%	-0.258*** (0.014)	-0.109*** (0.013)	-0.105*** (0.013)
Post	-0.005*** (0.002)	-0.006*** (0.002)	-0.007*** (0.002)
On NSFAS in previous year	0.011*** (0.002)	0.026*** (0.002)	0.015*** (0.002)
Post * On NSFAS previous year	-0.009** (0.005)	-0.009** (0.004)	-0.008* (0.004)
Post * Failed 50% previous year	-0.055** (0.027)	-0.056** (0.024)	-0.057** (0.024)
Fail 50% * On NSFAS previous year	0.164*** (0.021)	0.099*** (0.019)	0.099*** (0.019)
Post * Failed 50% * On NSFAS prev. year	-0.073 (0.047)	-0.076* (0.044)	-0.074* (0.044)
Constant	0.980*** (0.001)	0.684*** (0.034)	0.651*** (0.035)
N	39,151	39,151	39,151
R-squared	0.099	0.202	0.207
Entry cohort	No	Yes	Yes
Cumulative GPA from previous year	No	Yes	Yes
Courses taken in previous year	No	Yes	Yes
Female, population group indicator	No	No	Yes
School's authority under apartheid	No	No	Yes

Notes:

1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
2. Standard errors are clustered at the individual level.
3. Sample includes those students re-enrolling in university in academic years 2-4.
4. *Post* is an indicator for 2015.
5. Failed 50% indicates that the student did not pass at least 50 percent of the courses enrolled in in the previous year.

Table 5: Proportion re-enrolling on NSFAS support, conditional on previous year's NSFAS status and Pass 50% status

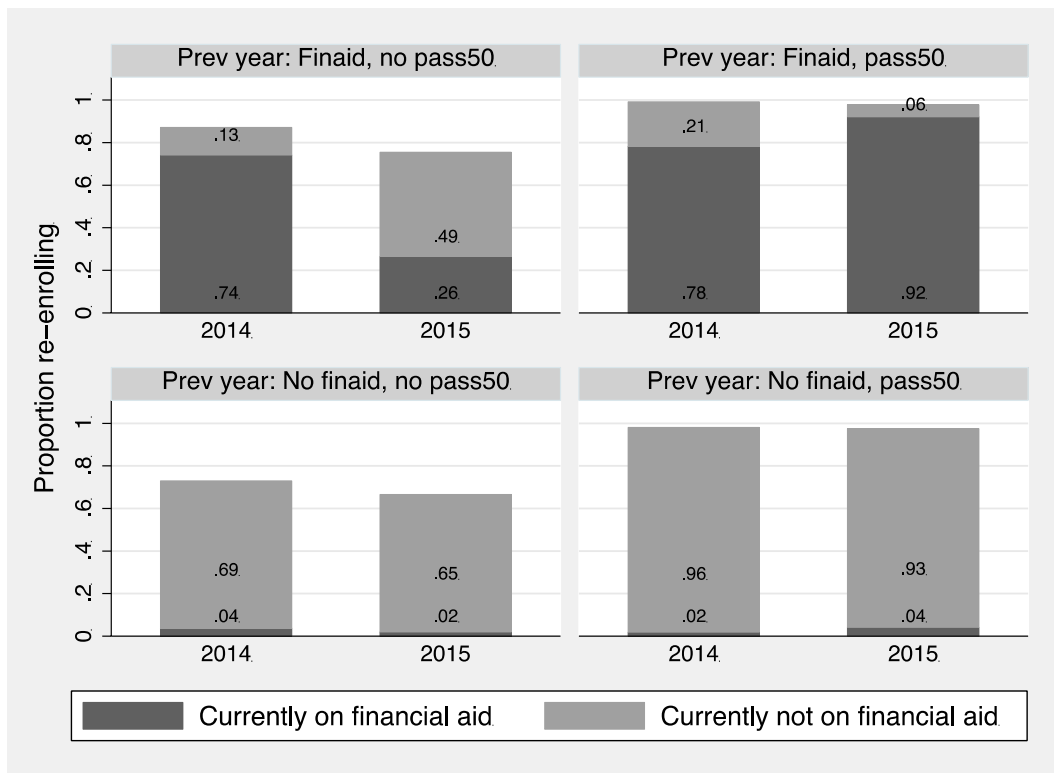
	# of Obs N	NSFAS in previous year				No NSFAS in previous year			
		Failed 50% in previous year		Passed 50% in previous year		Failed 50% in previous year		Passed 50% in previous year	
		Mean	#	Mean	#	Mean	#	Mean	#
Re-enrolling on NSFAS:									
All years	39451	0.631	341	0.853	5012	0.041	63	0.028	884
2011-2014	29028	0.774	301	0.829	3609	0.049	55	0.023	534
2011	3511	0.640	32	0.857	473	0.037	5	0.024	66
2012	6679	0.835	71	0.833	826	0.058	15	0.026	139
2013	9081	0.815	106	0.871	1125	0.060	21	0.025	186
2014	9757	0.742	92	0.781	1185	0.037	14	0.018	143
2015	10423	0.265	40	0.920	1403	0.019	8	0.042	350

Table 6: Characteristics of students who fail 50% in 2014, by enrolment and dropout status in 2015

	Enrol, on funding	Enrol, no funding	Dropout
EFC information available	93%	67%	73%
Lowest EFC amount	53%	57%	63%
Expected family contribution	R6 221,25	R4 421,55	R4 629,63
Received a concession to continue	66%	86%	91%
GPA	35,9	32,3	22,1
Academic year in 2014	2,1	1,6	1,8
Qualifying year in 2015 (if had passed)	70%	47%	54%
Graduate by 2017	21%	5%	0%

Notes to Table 6: Lowest EFC amount row indicates the percentage of students who contribute the minimum EFC amount only (i.e. come from the lowest income households).

Figure 1: Re-enrolment by past and present NSFAS status and whether the student passed 50% of their courses



Notes to Figure 1: The sample includes students who were in their second or third academic year and were in good academic standing (but had not graduated) in the previous year.

Appendix A: 50% rule communication

2015 Financial Assistance Applications: Financial Aid & GAP Funded Students.

Please read the information below carefully to ensure that you understand the process and the criteria that will be applied. If you are unclear on any aspect please contact the Student Financial Aid office. You are responsible for ensuring that you understand all the rules and policies and how they may affect you.

2014 Undergraduate Students

Students currently receiving financial assistance are no longer required to re-apply for financial assistance. In considering the renewal of financial assistance Student Financial Aid will apply the following criteria;

1. Students must have met academic eligibility which is set at a minimum pass of 50% of registered courses including any winter and/or summer term courses in the academic year
2. Students that are academically excluded are automatically ineligible for funding renewal
3. Students must not have exceeded years of study which is the minimum duration of the programme plus 2 years (N+2)

2014 Postgraduate Diploma Students

Students currently funded for a 1-year Postgraduate Diploma are not eligible for renewal as these diplomas are only funded for the 1 year. Due to the high demand for financial assistance, no appeals for further funding will be entertained should you not complete the diploma.

2015 Postgraduate Diploma Applicants

Students must apply for financial assistance through the normal Admission process and the applicable NSFAS & University Financial Assistance Application Form must be completed and submitted by the closing date. No late applications will be accepted.

First time Postgraduate Diploma applications for 2015 will only be considered if the undergraduate programme is completed in less than N+2.

2015 Honours Applicants

Please ensure that you enquire about funding at the Postgraduate Funding Office and complete their application for assistance. Should you be applying for honours and a postgraduate diploma, submit an application to both funding Offices.

Renewal Decision

Students will be informed of their 2015 financial assistance status once all academic information is available, unless they have exceeded the N+2. Students that have reached the N+2 in 2014 will receive a letter confirming that 2014 is their last year of funding.

Note that the undergraduate renewal process does not apply to students whose financial assistance was cancelled in 2014. Students whose financial aid was cancelled will need to re-apply should they require financial assistance in 2015.

Manager
Student Financial Aid

Mid-year academic results: <aid_year>

Communication was previously sent that informed students of the renewal criteria for financial aid and GAP funded students. A review of the mid-year academic results indicates that you have not passed all first semester courses, which could affect your funding renewal.

You are reminded of the criteria for the renewal of financial assistance for next year;

1. Students must meet academic eligibility which is set at a minimum pass of 50% of registered courses including any winter and/or summer term courses in the academic year
2. Students that are academically excluded are automatically ineligible for funding renewal
3. Students must not have exceeded years of study which is the minimum duration of the programme plus 2 years (N+2)

Please note that it is your responsibility to ensure that your academic performance meets the renewal criteria.

Appendix B: Tables and Figures

Table B1: Covariates of re-enrolment by Pass 50% versus Fail 50%

	Passed 50%		Failed 50%		Diff. in	
	Mean	SD	Mean	SD	means	
University performance (preceding year)						
NSFAS funded	0.157	(0.364)	0.261	(0.439)	0.103	***
Cumulative GPA	61.9	(9.639)	38.4	(14.898)	-23.5	***
GPA	61.3	(12.684)	35.3	(21.616)	-26.0	***
Number of courses taken	7.65	(1.864)	6.76	(2.227)	-0.894	***
Academic year	1.60	(0.698)	1.56	(0.643)	-0.039	*
Individual characteristics:						
Female	0.542	(0.498)	0.490	(0.5)	-0.052	***
SA citizen	0.863	(0.344)	0.857	(0.35)	-0.006	
SA born	0.877	(0.329)	0.852	(0.355)	-0.025	**
African	0.312	(0.463)	0.449	(0.498)	0.137	***
Coloured	0.139	(0.346)	0.166	(0.372)	0.027	***
Indian	0.090	(0.286)	0.087	(0.282)	-0.003	
White	0.354	(0.478)	0.201	(0.401)	-0.153	***
Other	0.106	(0.307)	0.097	(0.296)	-0.009	
Matriculation characteristics:						
Matriculated pre 2008	0.018	(0.133)	0.031	(0.175)	0.013	***
Old school authority (under apartheid)						
Cape Educ Dept	0.485	(0.5)	0.421	(0.494)	-0.064	***
HoA	0.004	(0.061)	0.008	(0.091)	0.005	**
HoD	0.008	(0.089)	0.009	(0.095)	0.001	
HoR	0.053	(0.223)	0.075	(0.263)	0.022	***
DET	0.116	(0.321)	0.193	(0.395)	0.077	***
Natal Edu Dept	0.164	(0.371)	0.140	(0.347)	-0.024	*
OFS Edu Dept	0.013	(0.112)	0.007	(0.083)	-0.006	
Transkei Edu Dept	0.011	(0.103)	0.013	(0.114)	0.003	
Transvaal Edu Dept	0.122	(0.327)	0.106	(0.308)	-0.016	
International	0.024	(0.154)	0.028	(0.165)	0.004	
Matric score	133.5	(186.5)	113.0	(167.5)	-20.46	***
Matric maths %	78.8	(12.95)	73.9	(13.78)	-4.90	***
Matric English %	74.9	(9.063)	72.0	(8.814)	-2.93	***
Entrance marks:						
APS score	422.5	(175.3)	387.2	(139.8)	-35.22	***
NBT score	70.1	(11.18)	66.3	(12.27)	-3.75	***
NBT QL score	64.2	(16.14)	57.5	(16.06)	-6.71	***
NBT math score	57.1	(16.63)	50.4	(15.13)	-6.70	***

Notes to Table B1: Means, Standard Deviations (SD), difference in means and significance levels of difference shown for students who passed at least 50% of the courses they enrolled for and students who failed 50% of their courses. *** p<0.01, ** p<0.05, * p<0.1. NSFAS funded is students who receive National Student Financial Aid Scheme loans. GPA is grade point average. The old school authority variables indicate the department which governed the school under apartheid DET = Department of Education and Training (formerly black schools);

HOR = House of Representatives (formerly coloured schools); HOA = House of Assembly (formerly white schools); HOD = House of Delegates (formerly Indian schools); OFS = Orange Free State department. Matric score is the National Senior Certificate examinations score. The Admissions Points Score (APS) is calculated from the National Senior Certificate examinations based on faculty and program choice. NBT is National Benchmark Test a university readiness test that students are required to do when applying for admission to UCT. There are three components to the test, academic literacy (NBT score), quantitative literacy (NBT QL score) and mathematics (NBT math score). Sample restricted to students in years 2-4 who are in good academic standing.

Table B2: Proportion re-enrolling by previous year's Pass 50% status

	Failed 50% in previous year			Passed 50% in previous year			All		
	Mean	Std Dev	#	Mean	Std Dev	#	Mean	Std Dev	#
All years	0.75	0.43	2071	0.98	0.14	37379	0.97	0.18	39451
2011-2014	0.77	0.42	1509	0.98	0.13	27519	0.97	0.17	29028
2011	0.72	0.45	186	0.98	0.15	3325	0.96	0.19	3511
2012	0.76	0.43	343	0.98	0.12	6336	0.97	0.16	6679
2013	0.80	0.40	482	0.98	0.13	8599	0.97	0.16	9081
2014	0.76	0.43	498	0.98	0.13	9259	0.97	0.17	9757
2015	0.69	0.46	562	0.98	0.15	9860	0.96	0.20	10423

Notes: Sample restricted to students in years 2-4 who are in good academic standing.

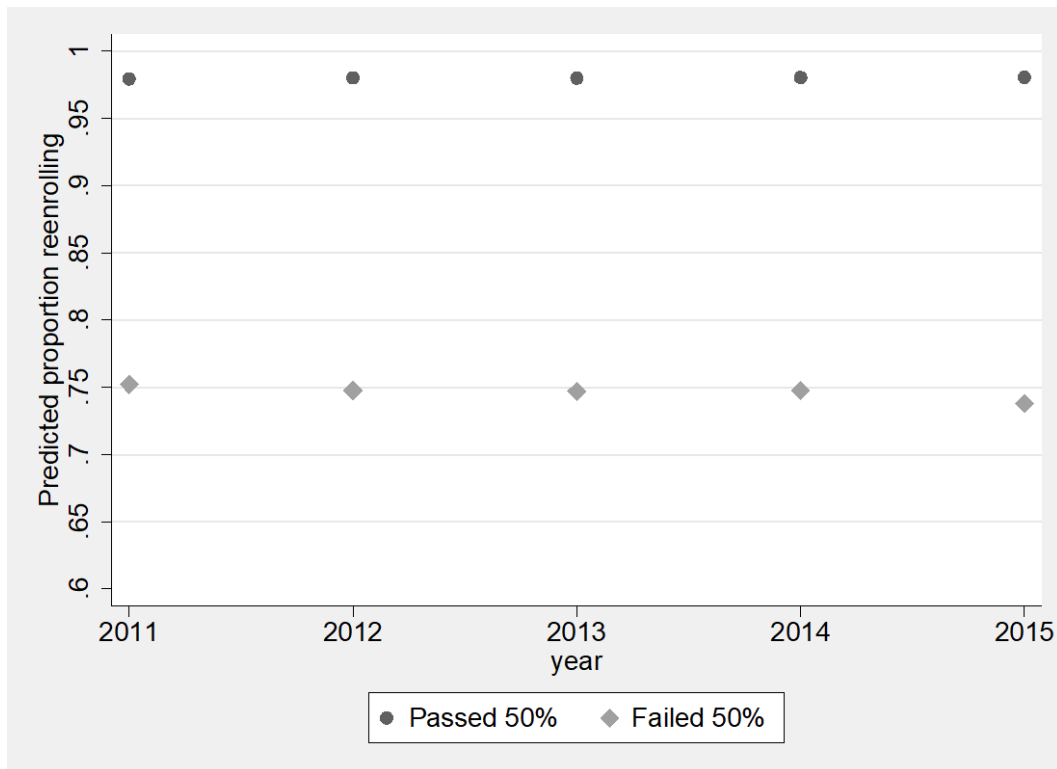
Table B3: Comparison of Pass 50% and Fail 50% students - 2013 vs 2014

	Passed 50%			Failed 50%		
	2013	2014		2013	2014	
University performance:						
GPA	29.263	27.245	*	63.235	63.079	
Cumulative GPA	41.246	41.174		62.803	62.644	
Cumulative GPA - GPA	19.055	22.066	**	-0.633	-0.622	
GPA improved	0.094	0.066		0.538	0.551	
Number of courses taken	6.769	6.697		7.195	7.194	
Odd number of courses taken	0.555	0.566		0.464	0.492	***
Individual characteristics:						
Female	0.407	0.437		0.545	0.543	
SA citizen	0.856	0.881		0.860	0.872	*
SA born	0.853	0.878		0.879	0.886	
African	0.548	0.530		0.303	0.305	
Coloured	0.123	0.176	**	0.132	0.140	
Indian	0.083	0.061		0.087	0.091	
White	0.151	0.124		0.379	0.348	***
Other	0.095	0.109		0.100	0.117	***
Entrance marks:						
APS score	370.640	376.210		421.642	419.411	
NBT score	63.871	64.838		69.980	69.791	
NBT QL score	57.221	57.238		64.292	65.060	**
NBT math score	49.208	50.561		56.126	56.587	

Notes to Table B3: Characteristics of students who passed at least 50% of the courses they enrolled for are compared to the characteristics of students who failed 50% of their courses in 2013 and 2014. GPA is grade

point average. The Admissions Points Score (APS) is calculated from the National Senior Certificate examinations based on faculty and program choice. NBT is National Benchmark Test a university readiness test that students are required to do when applying for admission to UCT. There are three components to the test, academic literacy (NBT score), quantitative literacy (NBT QL score) and mathematics (NBT math score). Sample restricted to students in years 2-4 who are in good academic standing.

Figure B1: Predicted re-enrolment - parallel trends assumption



Notes to Figure B1: Predicted proportion of students re-enrolling based on previous year's GPA, cumulative GPA, whether pass 50%, number of courses taken and sex, race and school's ex-department.

Appendix C: Model Robustness tests

Assumption 1: Parallel trends

The key assumption of the difference-in-difference model is that re-enrolment trends would have been the same, or at least the same conditional on covariates, in both the 50% pass and 50% fail groups if the policy rule had not been enforced. We predict the probability of re-enrolment by year. Figure B1 presented the predicted probability of enrolment conditional on previous year's GPA, cumulative GPA, whether pass 50%, number of courses taken, sex, race and school's ex-department. The proportion re-enrolling in each year is constant at around 98% for the pass 50% group, and at 75% for the fail 50% group.

Assumption 2: The composition of the treatment and control groups should not be affected by the treatment

Another key assumption of the difference-in-differences model is that the composition of the treatment and controls groups must not change as a result of the treatment (Angrist and Pischke, 2009). Given that the change in the policy enforcement was communicated to students at the start of 2014, it is possible that students could have adjusted their behaviour to change the probability of failing 50%. This could have been achieved by taking fewer courses or taking an even number of courses, working harder or getting additional assistance to improve the odds of passing 50%.

We test this assumption by assessing the proportion of students who failed 50% and the characteristics of students in the pass 50% and fail 50% groups, in 2014 compared to 2013. We find that the percentage passing 50% is stable at 93% in 2013 and 2014. Next, Table B3 compared the characteristics within the pass 50% group and within the failed 50% group in 2013 versus 2014. All but one of the university performance measures suggest that there was no change in performance in the pass 50% versus fail 50% groups in 2014 compared to 2013. We do however see that the average GPA among students who pass 50% in 2014 is statistically lower at the 10% significance level which could indicate that the pass group includes those students who are on the 50% pass margin and worked a little harder in 2014 as a result of the policy. We see no adjustment in the number of courses taken or in the percentage of students taking an even number of courses. In terms of individual characteristics, we see a decrease in the proportion of white students and increase in the proportion of other race students within the failed 50% group and an increase in the proportion of coloured students in the pass 50% group.



The Southern Africa Labour and Development Research Unit (SALDRU) conducts research directed at improving the well-being of South Africa's poor. It was established in 1975. Over the next two decades the unit's research played a central role in documenting the human costs of apartheid. Key projects from this period included the Farm Labour Conference (1976), the Economics of Health Care Conference (1978), and the Second Carnegie Enquiry into Poverty and Development in South Africa (1983-86). At the urging of the African National Congress, from 1992-1994 SALDRU and the World Bank coordinated the Project for Statistics on Living Standards and Development (PSLSD). This project provide baseline data for the implementation of post-apartheid socio-economic policies through South Africa's first non-racial national sample survey.

In the post-apartheid period, SALDRU has continued to gather data and conduct research directed at informing and assessing anti-poverty policy. In line with its historical contribution, SALDRU's researchers continue to conduct research detailing changing patterns of well-being in South Africa and assessing the impact of government policy on the poor. Current research work falls into the following research themes: post-apartheid poverty; employment and migration dynamics; family support structures in an era of rapid social change; public works and public infrastructure programmes, financial strategies of the poor; common property resources and the poor. Key survey projects include the Langeberg Integrated Family Survey (1999), the Khayelitsha/Mitchell's Plain Survey (2000), the ongoing Cape Area Panel Study (2001-) and the Financial Diaries Project.

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