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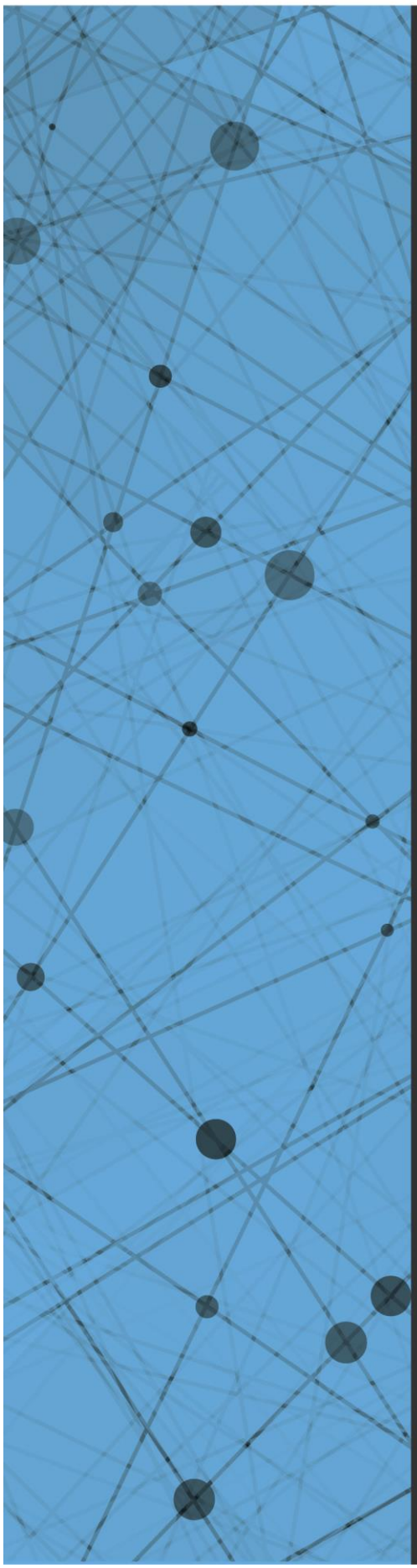

How did removing student allowances for postgraduate study affect students' choices?

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read, and have understood section 81 of the Tax Administration Act 1994, which relates to secrecy. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

Abstract

From 1 January 2013, students in New Zealand who entered postgraduate qualifications other than Honours were no longer eligible to receive student allowances. We use individual-level administrative data that includes tertiary enrolment information, student allowance receipt, student loan borrowing, and wage earnings to investigate whether the policy affected students' choices. We use a student's allowance receipt as an undergraduate or her borrowing for course fees as a postgraduate to proxy for her counterfactual allowance eligibility. We use this proxy to compare allowance-eligible and allowance-ineligible students who enter an affected postgraduate qualification or an unaffected Honours degree. Although we are not able to cleanly estimate the causal effect of the policy, our results do not suggest that the policy affected the number or type of postgraduate entrants, their choice between part-time and full-time study, the amount of paid work they performed while studying, or their rates of dropping out. However, our results strongly suggest that students who became ineligible for allowances increased their student loan borrowing for living expenses.

JEL codes

I22, I23, and I28

Keywords

student allowances, student loans, student support, postgraduate qualifications, tertiary education

Summary haiku

Postgrad allowance
Removed. Students borrow more.
Not much else changes.

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1 Introduction

As of 1 January 2013, a policy change meant that New Zealand tertiary students studying towards postgraduate qualifications other than Honours were no longer eligible to receive student allowances. In this report we investigate how the quantity and type of entrants to postgraduate qualifications, and their financial behaviour once there, changed when the policy came into effect. Although we are not strictly able to attribute causality to the relationships we find, some of the patterns we find strongly suggest that a causal effect exists.

The rationale for the policy change included that it was expected to generate savings of $33m in the first four years, while focussing student allowances on students early in their tertiary careers and from low-income families (New Zealand Government, 2012). Its proponents argued that postgraduate students are better able to finance their own study, and will receive higher lifetime incomes that compensate them for any allowances foregone. In pre-election promises, the Labour Party, which leads the current government, said it would reverse this policy, but a date is not yet set for this to come into effect.[1]

The policy increased the cost of affected postgraduate study relative to other options and could theoretically have had several effects. Students who lost their allowance eligibility became eligible to borrow more for living expenses on their student loans, which may have caused them to increase their borrowing. However, for some students the additional amount they could borrow was considerably less than the value of the allowance they would have received and many students may have been reluctant to take on this additional debt. Students could thus have responded in several different ways: they may have chosen not to enter postgraduate study at all; they may have entered Honours, where they remained allowance-eligible, instead of an affected postgraduate qualification; they may have increased the paid work they performed while studying; they may have chosen to study part-time instead of full time and to work more hours while studying; or they may have entered the postgraduate qualification and dropped out due to financial pressure, the pressure of working while studying, or the stress of accumulating a large student debt.

We use individual-level data from Statistics New Zealand's Integrated Data Infrastructure (IDI) from 2006 until 2015 on tertiary enrolment, student allowance receipt, and student loan borrowing by domestic students, combined with additional information such as wage earnings, to look for evidence of any of these responses.

We expect only students who would have been eligible for allowances had the policy change not occurred to have potentially been affected, but these individuals are challenging to

[1] http://www.labour.org.nz/education, accessed 13 February 2018.

identify because the IDI does not include the data necessary to construct their counterfactual eligibility. We tackle this challenge in two ways.

First we consider the population of Bachelor's graduates, who may move straight on to postgraduate study, and look at their choice of whether to do so as well as the characteristics of the study they choose. In this case, we use the allowance they received during their Bachelor's study as a proxy for the allowance they would have received had the policy change not occurred. Among pre-policy cohorts, allowance during Bachelor's study is a good predictor of allowance during postgraduate study.

Second, we consider the full population of students entering postgraduate qualifications and classify them as having low expected allowances if their borrowing for compulsory course fees is below the median and high expected allowances if their borrowing for fees is above the median. Prior to the policy change, borrowing for fees was a good predictor of receiving an allowance, and the policy change did not significantly affect students' ability or incentives to perform this type of borrowing.

To help identify any policy effect, we compare over time the quantities, characteristics, and outcomes of entrants to postgraduate qualifications that were affected by the policy change ("affected postgraduate qualifications") who were high-allowance or low-allowance types (based on their undergraduate or predicted allowance). Any effects of the policy change should show up primarily for the high-allowance students, while low-allowance students act as a comparison group. We use students entering Honours with high or low predicted allowances as additional comparison groups, neither of which is expected to have been directly affected by the policy change.

Note, this paper revises an unpublished initial draft. The current version uses an additional two years of data from after the policy change, and omits results that were not robust to including the extra data. Results in this version supersede results in the previous version and include responses to feedback and criticisms received on the earlier draft.

The remainder of the paper is organised as follows. Section 2 describes the tertiary education system in New Zealand, the support system of student loans and allowances, and the policy change that removed allowance eligibility for most postgraduate students. Section 3 provides a conceptual framework for the potential effects of the policy change. Section 4 describes the data, and in particular the two main samples of students, namely Bachelor's graduates choosing whether to move straight into postgraduate study and all students entering a postgraduate qualification. Section 5 presents the empirical strategy and results, focussing first on the decisions of Bachelor's graduates whether to proceed into postgraduate study, then on the total number and type of students entering postgraduate qualifications, and finally on the outcomes and financial behaviour of students entering postgraduate qualifications. Section 6 summarises the main findings and concludes.

2 Background

2.1 The New Zealand tertiary education system

The New Zealand tertiary education system offers programmes ranging from second chance education to modern apprenticeships and up to doctoral degrees (PhDs). Qualifications are provided by various organisations, which include universities, polytechnics, institutes of technology, wānanga, industry training organisations, and private training establishments.

Bachelor's degrees are primarily offered by public tertiary providers, and the majority of Bachelor's degrees are gained from universities.[2] Furthermore, nearly all postgraduate-level study is undertaken at universities.[3, 4]

New Zealand has eight universities, each of which offers a range of undergraduate and postgraduate qualifications. A Bachelor's degree is the minimum prerequisite for entry into most postgraduate qualifications. These generally take three years of full time study to complete,[5] and have entry requirements that vary by qualification, field of study, university, and student age. At the postgraduate level, students have historically been able to enrol in one-year Postgraduate Certificates/Diplomas, one year Honours degrees, two-year Master's degrees, or three- or more year doctoral degrees.[6] Beginning in 2013, however, some universities have begun to offer Master's qualifications requiring only 180 credits as opposed to the usual 240 credits, which can be completed in around 12 months. Postgraduate Certificates and Diplomas generally have lower enrolment requirements than the other postgraduate qualifications. For example, entry to an Honours year often has an undergraduate grade point average requirement that prevents entry by lower-achieving students. In addition, students can enrol in Master's degrees directly from their undergraduate study. However, in some instances, they instead transition to the second year of Master's once they have completed a Postgraduate Certificate or Diploma, or an Honours year. Finally, although some students enrol in doctoral degrees straight after their Bachelor's degree, most PhD entrants have already completed an Honours or Master's qualification.

Classes at New Zealand universities run in three semesters. Term dates vary by institution and year, but in general the first semester runs from February until June, the second from July until November, and the third (summer) from November until February. Most students begin

[2] Between 2007 and 2014, 98% of full-time equivalent Bachelors' degrees students were studying at public tertiary education providers, with 82% of these studying at universities. (Ministry of Education, 2015b).
[3] In New Zealand, all qualifications above a Bachelor's degree are referred to as "postgraduate" qualifications, whereas in the US these would be called "graduate" qualifications.
[4] 94% of the full-time equivalent postgraduate students between 2007 and 2014 were enrolled at universities (Ministry of Education, 2015b).
[5] Students can alternatively enrol in four-year "double degree" Bachelor's qualifications. Note also that certain fields, such as medicine, do not follow the format of a three-year Bachelor's degree.
[6] In addition, some institutions and fields of study bundle Honours degrees with Bachelor's degrees into a single four-year degree that is considered an "undergraduate" qualification in itself, instead of treating Honours as a separate postgraduate year (NZQA, 2015).

their tertiary study in the first semester, and end it in the second. A smaller range of courses is offered over the summer semester, and the majority of active students do not enrol at all over this period.

2.2 The New Zealand support system for tertiary study

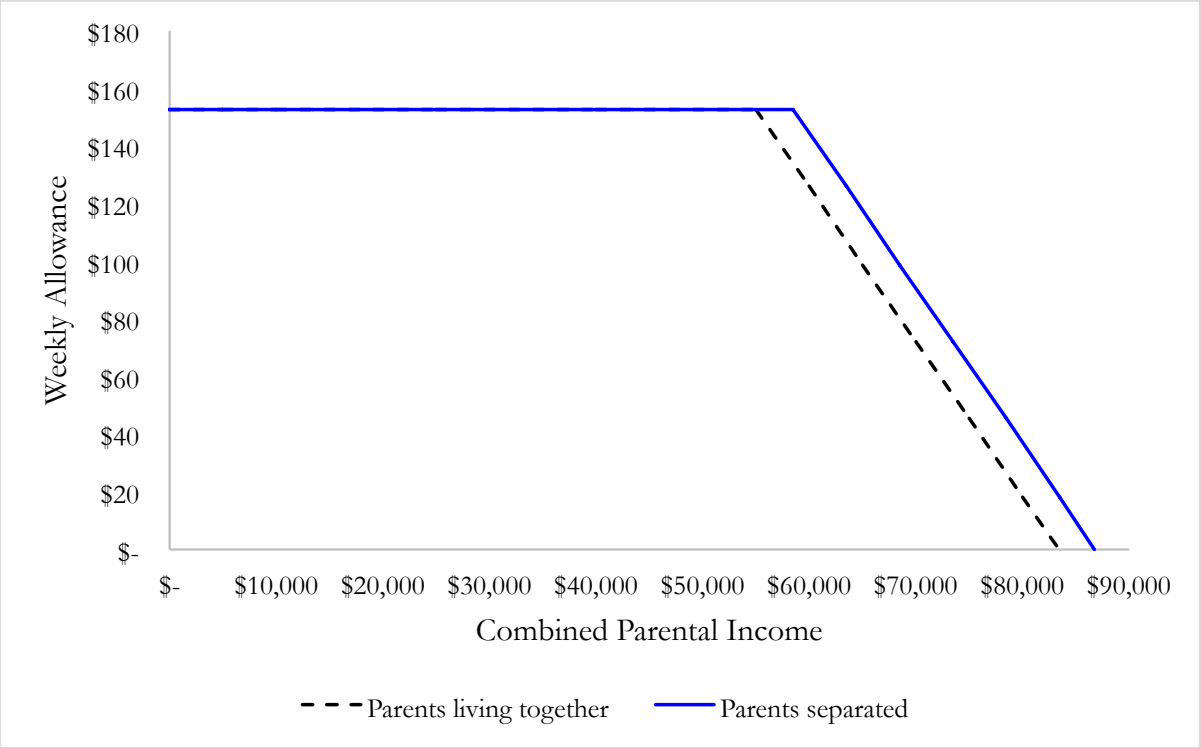
Introduced in 1989, the Student Allowance Scheme was created to enable domestic students from low-income families or who are over an age cut-off to participate in tertiary education by providing living allowances that reduce financial barriers to study.[7] This scheme is complemented by the Student Loan Scheme (introduced in 1992), which grants subsidised loans and aims to help all students meet the costs of tuition and living expenses while they are studying.[8] In contrast to allowances, loans can be accessed by all domestic students. Full-time students who do not receive full allowances can borrow to help cover their living costs while studying; the amount that can be borrowed for living costs decreases dollar for dollar with the allowance received.[9] Full-time students in general may be able to borrow for course-related costs, compulsory course fees, and living costs; part-time students can borrow for compulsory course fees only.

For full-time students aged under 24 years (25 until 2009), the primary determinant of allowance eligibility is parental income.[10] Below a parental income threshold that depends on the parents' circumstances and is regularly adjusted, students are eligible for the full amount of the student allowance.[11] This full amount varies depending on whether the students are living in their parents' homes, have dependent children, or have partners, and with the earning statuses of any partners. Once parental income increases over the threshold, the maximum allowance students are eligible to receive decreases linearly with parental income until it reaches zero. Once students' weekly personal incomes increase above a time-varying threshold, their allowances decrease one-for-one with additional earnings. Figure 1 presents a graphical summary of this relationship during the year from April 2012 to March 2013. The figure shows the weekly allowance for undergraduate students who are single, childless, aged 18 to 23, live with their parents, and have no personal income. The dashed black line shows the allowance for such students if their parents are living together; the solid blue line shows the allowance if their

[7] A student's circumstances determine the weekly allowance for which he is eligible. He receives that amount each week during term as well as during semester breaks of three weeks or shorter. No allowance is received during longer breaks, meaning during the roughly 15 weeks of summer.
[8] When introduced, interest on the loan was charged for all tax resident borrowers. In 2000, the policy was changed so that interest was abolished for full-time/full year students and part time, or part year students on low income. In 2006, the interest was abolished for all borrowers living in New Zealand, regardless of study status (though borrowers living overseas are still charged interest).
[9] The maximum amount that can be borrowed for living costs is slightly lower than the maximum allowance eligibility for students living away from home who have low income parents.
[10] The allowance eligibility of older students is not based on their parents' income, but still varies with the students' personal characteristics such as personal income, number of dependent children, and partnership status.
[11] The parental income threshold is adjusted if the parents are separated or are supporting other dependent children who are aged under 24 and are in full-time education.

parents are separated. For example, with a combined parental income of $65,000, students are expected to receive weekly allowances of about $99 if their parents are not separated, and $117 if they are. Part-time students are usually not eligible for student allowances.[12]

Figure 1: Relationship between parental income and weekly student allowance



Notes: This figure gives an example of how the value of a student allowance varies with combined parental income for a student aged under 24. Rates are calculated for the period 1 April 2012 to 31 March 2013, for single, childless, domestic students between the ages of 18 and 23, who live with their parents, and have no personal income. The black dashed line gives the allowance if the student's parents live together; the blue solid line gives the allowance if they are separated.

2.3 Policy change: The removal of student allowances for most postgraduate study

The overall Student Support Scheme has faced changes almost every year since its introduction. These changes have largely consisted of fine-tuning the allowance eligibility procedure through the addition of new criteria or the adjustment of existing ones.[13] In this study, the policy change of interest is the removal of student allowance eligibility for those enrolled in most postgraduate qualifications after the 1st of January 2013.[14] This change was announced in May 2012 as part of

[12] https://www.studylink.govt.nz/products/a-z-products/student-allowance/index.html and https://www.studylink.govt.nz/starting-study/whats-available/studying-part-time.html, accessed 26 January 2018.
[13] Some examples include increasing of the personal income threshold and a new threshold for parental income for separated parents in 2006, reducing the maximum age in which applicants are assessed based on their parental income in 2009, excluding superannuation or veteran's pensioners from the allowance in 2011, and freezing to the automatic inflation adjustment of the parental income threshold for a period of four years. For more information, see Ministry of Education - Education Counts (2013).
[14] http://studylink.govt.nz/about-studylink/media-releases/2012/changes-to-student-loans-and-allowances-budget-2012.html

that year's budget; it affected all postgraduate qualifications except for the Bachelor's degree with Honours.

This change refocussed student allowances on students working towards their first tertiary qualification and was expected to generate savings of $33m in the first four years (New Zealand Government, 2012). Additionally, its proponents argued that students enrolled in postgraduate qualifications are better able to self-finance their study, and are likely to earn comparatively large lifetime personal benefits that more than offset the allowances foregone.[15]

In pre-election promises late in 2017, the Labour Party, which leads the current government said it would reverse the earlier policy change and reinstate student allowances for postgraduate students.[16] A date has not yet been set for implementation.

The remainder of this section shows how widespread student allowance receipt was among new postgraduate students before the 2013 policy change and how much it decreased with the policy change. The only students or potential students we expect may have been affected by the policy change are those who would have been eligible for allowances prior to the policy change but would not have been afterwards.

Table 1 shows the number of new students entering affected postgraduate qualifications and Honours, the number of such students who received student allowances, and the average annual student allowance among the students who did receive an allowance. Figure 2 shows the fraction of students entering a new postgraduate qualification each year who received any student allowance.[17] The table and figure show that allowance receipt before the policy change was considerably less widespread among students in affected postgraduate qualifications than among Honours students; 15.5 percent of pre-policy students entering affected postgraduate qualifications received allowances, compared with 37 percent of Honours entrants. We thus expect a maximum of around 15.5% of potential postgraduate entrants to non-Honours qualifications to have been affected by the policy change.

When the policy change occurred in 2013, allowance receipt dropped to very low levels for affected postgraduate qualifications, but continued at similar levels to previous years for students entering Honours degrees. Although a few exemptions to the policy change remained into 2013, for the majority of students the policy meant they would not receive an allowance if they enrolled in postgraduate study other than Honours.

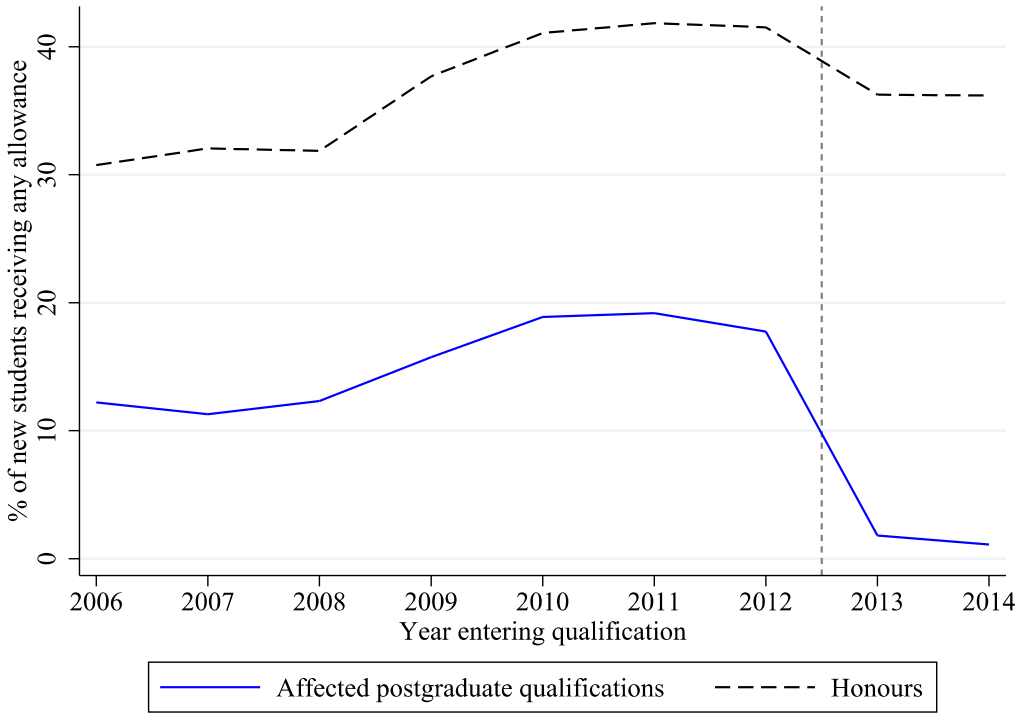
[15] For example, Mahoney, Park, and Smyth (2013), who are not proponents of the policy and were studying returns to education in a different context, find that the median earnings of young graduates with postgraduate qualifications five years after study is between 20% and 45% greater than for Bachelor's degree graduates.
[16] http://www.labour.org.nz/education, accessed 13 February 2018.
[17] Here and in the other figures and tables, November and December events are counted as occurring the following year for data availability reasons. However, the percentage of enrolments affected is tiny.

Table 1: New students entering postgraduate qualifications and their receipt of student allowances

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Affected Postgraduate Qualifications	Total students entering	12,318	12,666	12,399	14,178	14,460	13,656	13,866	13,644	14,079	14,937
	Students receiving an allowance	1,503	1,428	1,527	2,232	2,733	2,619	2,460	249	156	.m
	Average allowance if received	$8,133	$7,937	$7,483	$7,513	$7,543	$7,163	$7,234	$4,220	$2,850	.m
Honours	Total students entering	4,119	3,939	4,260	6,000	5,058	4,704	4,629	5,370	5,157	4,932
	Students receiving an allowance	1,266	1,263	1,359	2,262	2,079	1,968	1,923	1,947	1,866	.m
	Average allowance if received	$6,642	$6,534	$6,547	$6,492	$6,517	$6,316	$6,199	$6,115	$6,089	.m

Notes: This table provides information on students entering postgraduate qualifications affected by the 2013 removal of student allowances for postgraduate study (top panel) and Honours (bottom panel) in years ending in October. The allowance variables are for students entering the qualifications only; the average allowance is calculated in real 2014 dollars among students receiving a positive allowance, and is for the student's first 12-month period after entering the qualification. Values denoted .m are not yet available at the time of writing. Student counts are randomly rounded to base 3 for confidentiality reasons.

Figure 2: Percentage of students entering postgraduate qualifications who received a student allowance



Notes: The figure shows the fraction of domestic students entering a postgraduate qualification that was affected by the policy change or Honours in the year ending in October who received any student allowance in the 12 months from the date of entering the qualification. The vertical dashed line indicates the timing of the policy change.

Appendix Table 1 replicates Table 1, but shows changes in student enrolments and allowances separately for each affected postgraduate qualification. It shows that upon the policy change the fraction of students receiving allowances fell dramatically for all affected postgraduate qualifications and the average amount received decreased. However, the pre-policy proportion of students receiving an allowance varied markedly by qualification: 25 percent of Master's students, 15 percent of PhD students, 14 percent of Postgraduate Diploma students, and 2 percent of Postgraduate Certificate students received allowances. The table thus suggests that Master's students had the greatest potential to be affected, and Postgraduate Certificate students the least potential.

Table 2: Bachelor's graduates entering postgraduate qualifications and their receipt of student allowances

Postgraduate qualification	Received an allowance during Bachelor's study		Year of postgraduate entry									
			2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Affected postgraduate qualifications	No	Total students entering	1020	1041	1077	1194	1377	1287	1311	1194	1389	1362
		Students receiving an allowance	51	48	54	96	111	105	105	6	6	.m
		Average allowance in first 6 months	3,841	3,444	3,261	3,845	3,610	3,330	3,507	.s	.s	.m
	Yes	Total students entering	519	522	633	750	966	1035	1071	960	963	870
		Students receiving an allowance	279	282	330	438	588	594	609	69	87	.m
		Average allowance in first 6 months	4,304	4,012	4,161	4,375	4,236	3,841	3,853	1,888	1,728	.m
Honours	No	Total students entering	654	729	756	852	822	717	705	840	852	696
		Students receiving an allowance	39	36	42	81	93	81	72	48	51	.m
		Average allowance in first 6 months	3,456	3,434	4,001	3,860	3,867	3,173	3,107	3,307	3,779	.m
	Yes	Total students entering	372	387	348	444	513	531	615	726	591	453
		Students receiving an allowance	297	318	285	387	447	441	504	567	477	.m
		Average allowance in first 6 months	4,055	4,002	4,174	4,231	4,296	3,742	3,968	4,037	3,987	.m

Notes: This table provides information on Bachelor's graduates who transitioned straight into postgraduate qualifications as described in Section 4.1. Affected postgraduate qualifications are those affected by the 2013 removal of student allowances for postgraduate study. Years end in October. The allowance variables are for students entering the qualifications only; the average allowance is calculated in real 2014 dollars among students receiving a positive allowance. Values denoted .m are not yet available at the time of writing, and those denoted .s are suppressed for confidentiality reasons. Student counts are randomly rounded to base 3 for confidentiality reasons.

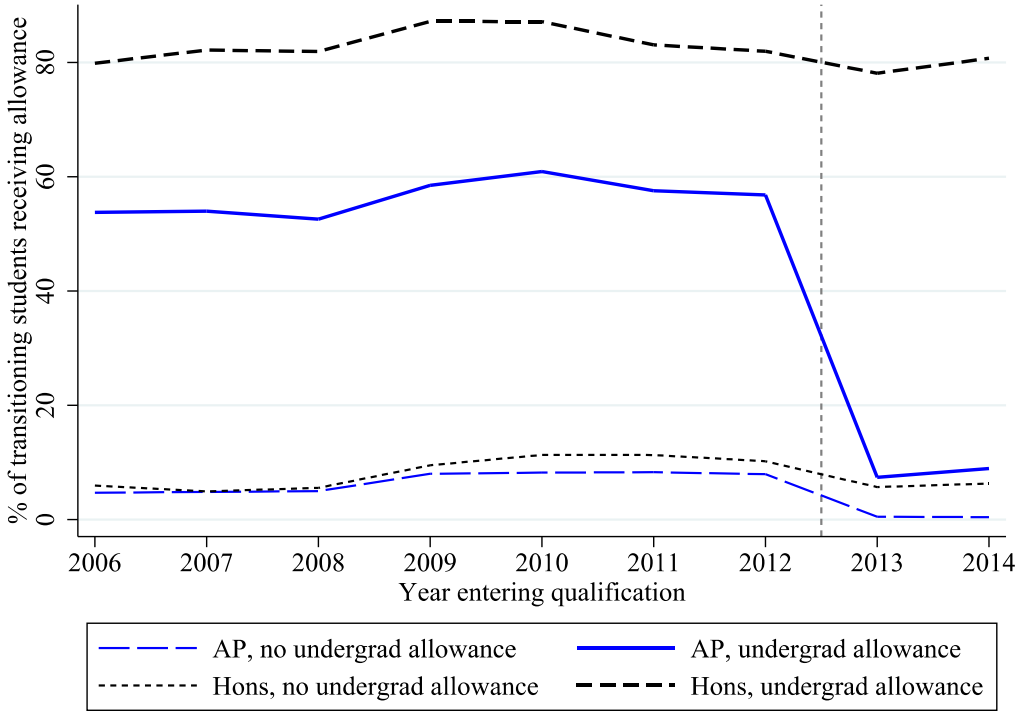
Table 2 shows similarly how the allowance receipt during postgraduate study of Bachelor's graduates who transitioned directly into higher level study changed with the policy change.[18] [19] Allowance receipt is given separately for students who did and did not receive an allowance during their final year of undergraduate study. Before the policy change, relative to those who did not receive an allowance as undergraduates, those who did receive an allowance as undergraduates were more likely to also receive one during postgraduate study; before 2013, only 7 percent of Bachelor's graduates who did not receive an allowance during undergraduate and who subsequently entered an affected postgraduate qualification received any allowance during their first year of postgraduate study, whereas 57 percent of those who did receive an allowance as an undergraduate also received one when they entered an affected postgraduate qualification. For those entering Honours study, these percentages are 8 and 83. However, when the policy change occurred, allowance receipt by students entering affected postgraduate qualifications decreased dramatically. In addition, the few students in affected postgraduate qualifications who still received allowances received lower amounts on average. In contrast, allowance receipt by Bachelor's graduates entering Honours degrees changed little.

Figure 3 illustrates these changes. It suggests that around half of all Bachelor's graduates who received allowances as undergraduates and went directly into affected postgraduate qualifications lost allowances as postgraduates as a result of the policy. Only a small proportion of similar students who did not receive allowances as undergraduates seem to have been affected by the policy.

These results show that the policy change had a real effect on allowance receipt of Bachelor's graduates who went on to any postgraduate qualification except Honours, and that whether an individual received an allowance as an undergraduate is a good indicator of whether she would have also received one as a postgraduate student had the policy change not occurred. Furthermore, they show that students who enter postgraduate study directly out of Bachelor's degrees are more likely to have been affected by the policy change than are postgraduate students on average.

[18] The exact construction of this population is described in Section 4.1.
[19] Appendix Table 2 replicates Table 2, but disaggregates the affected postgraduate qualifications.

Figure 3: Percentage of recent Bachelor's graduates entering postgraduate qualifications who received a student allowance



Notes: The figure shows allowance receipt during the first year of postgraduate study by the type of postgraduate qualification (AP is affected postgraduate qualifications, Hons is Honours) and whether the student received any allowance during her final year of undergraduate study. The sample is domestic students who completed a Bachelor's degree and transitioned into postgraduate study within 12 months, as described in Section 4.1. The vertical dashed line indicates the timing of the policy change. Years end in October.

3 Theoretical framework

This paper focuses on the choices of individuals to enter postgraduate study and, having entered it, their decisions on how to fund their study. Conceptually, an individual will prefer to study if the present discounted value of the life-time benefits, including greater income and non-monetary benefits, exceeds the opportunity cost, which consists largely of tuition costs and foregone earnings.[20]

Removal of student allowances for non-Honours postgraduate study decreases the net benefit of that study, and may therefore decrease enrolment in it. The change is only expected to affect students who would have been eligible for allowances, since only these students face lower net benefits. Because essentially only full-time students are eligible for student allowances, the policy change decreases the net benefit of full-time postgraduate study relative

[20] Benefits or costs that occur further in the future matter less, and are appropriately discounted to make them comparable to present-day benefits and costs.

to that of part-time postgraduate study for allowance-eligible students. It may thus cause them to enrol part time when otherwise they would have enrolled full time.

Among students who face a decrease in potential allowance receipt because of the policy, those from lower socioeconomic backgrounds, who previously had lower earnings, and who are earlier in their careers may be more likely to change their enrolment choices because they have fewer options for alternative sources of funding (such as personal savings or borrowing from family members).

Allowance eligibility for students enrolled in Honours is not altered by the policy change, but the policy may increase enrolment in Honours if this qualification is a substitute for other postgraduate qualifications that have become more costly.

Students who would have partially funded their study via allowances had the policy change not occurred and who choose to enter postgraduate study post policy even though they will now not receive allowances must fund their study by alternative means. As suggested by Smart (2013), student loans for living expenses are an obvious alternative source of funds. Students may also choose to work longer hours while studying, draw down on their savings, borrow from family members, or obtain money by various other means.

Students with different characteristics may respond differently to the policy change for a number of reasons, a salient one being that they expect different increases in earnings from their qualifications. A student who expects a large gain in earnings potential as a result of a postgraduate qualification is less likely to find that qualification ceases to be worthwhile even when its cost increases. In contrast, a student who expects only a small gain in income is much more likely to find that the removal of allowances means the postgraduate qualification is no longer a good decision. This would suggest that higher income groups such as males may be less affected by the policy change. By a similar argument, enrolments in Master's and PhDs, which offer high earnings after completion, may be less affected than enrolments in postgraduate certificates and diplomas, which offer lower earnings.[21] We limit our analysis in this report to a few population breakdowns such as by age to avoid analysing very small subpopulations, but acknowledge the average changes in behaviour that we document may not be representative of the changes in behaviour for every subpopulation.

4 Data

We use administrative data from Statistics New Zealand's Integrated Data Infrastructure (IDI) (Statistics New Zealand, 2013), which links administrative information about students from the

[21] The effect of the policy on enrolment may also vary across fields of study and institutions, since the benefits from attending in these is likely to vary as well.

Ministry of Education (MOE), with student allowance and loan information from the Ministry of Social Development (MSD) and Inland Revenue (IR).

4.1 Students transitioning from a Bachelor's degree to a higher qualification

The first of our two main samples of interest is domestic students successfully completing a Bachelor's degree, defined by a qualification code and one-digit field of study.[22] The way qualifications awarded are recorded in the Ministry of Education's data means the award date often differs considerably from the date the student last studied towards the qualification. We consider a student to have successfully completed a Bachelor's degree if we observe her being awarded the qualification in the calendar year in which she last studied towards the degree, or the year directly preceding or following it. We take as the completion date the date on which the student last studied towards the qualification, excluding study in courses from which she withdrew.

We are interested in whether such graduates transition directly into postgraduate study and their subsequent behaviour if they choose to do so. Entry into a postgraduate qualification is considered to occur the first time the student enrols in a course that is counted against the qualification; a student completing a Bachelor's degree is considered to transition directly into a postgraduate qualification if she first enrols in the postgraduate qualification no more than six months before she completes the Bachelor's degree and no more than 11 months afterwards. Note we are unable to observe any students enrolling in postgraduate study overseas. Postgraduate qualifications include Postgraduate Certificates, Postgraduate Diplomas, Honours degrees, Master's degrees, and PhDs. Honours is the only one of these not directly affected by the policy change; we refer to the others as affected postgraduate qualifications.

The completion of a Bachelor's degree is an obvious decision point for whether to proceed into postgraduate study, and a non-trivial fraction of such students choose to do so; in Section 5.1 we investigate how the probability a student completing a Bachelor's degree transitioned directly into a higher qualification changed when the policy change occurred.

The biggest challenge in determining whether the policy change affected student enrolments in postgraduate qualifications is estimating what enrolment would have been had the policy not changed. Enrolment in different qualifications changes year-to-year due to factors such as growth in the population of individuals eligible to enter the qualifications, varying economic conditions that affect job opportunities and thus the opportunity cost of studying, changes in the qualifications offered, and advertising pushes and scholarships offered by tertiary education providers and external parties.

[22] We group students according to the broad field of study NZSCED categories (Ministry of Education - Education Counts, 2015a). See Section 4.3 for a description of how several problematic qualifications were coded.

Although we do not claim to isolate the causal effect of the policy change on enrolments (or the behaviour of postgraduate students), we get a better indication of its likely effect by comparing changes over time in the choices of students who are likely to have been affected by the policy change with those of students who are unlikely to have been affected. A change in behaviour observed equally in students likely and unlikely to have been affected was probably caused by factors other than the policy change, whereas a change observed only in students likely to have been affected can more credibly be attributed to the policy.

We use two alternative comparisons to shed light on the counterfactual choices of students likely to have been affected by the policy. Our first comparison is between students entering affected postgraduate qualifications and those entering Honours; the former lost allowance eligibility, whereas the latter did not. However, this is not an ideal comparison for three reasons. First, if Honours study is a substitute for other postgraduate qualifications, the policy may cause students to enrol in Honours when they would have enrolled in a different postgraduate qualification had the policy change not occurred. Although this is a theoretical possibility, we find no evidence that this type of substitution occurred.

Second, many entrants to affected postgraduate qualifications would not have received allowances even absent the policy change because their parents' or personal income was too high. Third, Honours entrants differ from entrants to affected postgraduate qualifications in a number of ways that mean they may respond differently to other changes such as in economic conditions. For instance, Honours entrants tend to be younger and to be studying full time, whereas many affected postgraduate entrants are older and are studying part time while continuing to work. We thus also compare students entering affected postgraduate qualifications whom we expect to have lost eligibility for allowances with those who are unlikely to have been eligible for allowances even absent the policy change. This comparison is also imperfect because affected postgraduate students who would have received allowances are not a randomly chosen sample from affected postgraduate students overall, but it remains illuminating.

This strategy requires us to determine which students are likely to have been eligible for allowances. Unfortunately, the IDI does not contain sufficient data for us to perfectly construct the counterfactual allowance eligibility of students who enrolled after the policy change. That is, we cannot tell what allowance they would have received in the absence of the policy change.[23] When we are considering Bachelor's graduates, the data provide a straightforward solution: we assume the student's allowance in her final Bachelor's year is a good prediction of what her allowance in postgraduate study would have been had the policy not changed. Conveniently, this

[23] We consider three alternative measures of allowance receipt: total allowance received over the six months from the entering the postgraduate qualification, total allowance received over the 12 months from the entering the postgraduate qualification, and average monthly allowance received over the 12 months from entering the qualification, disregarding any months in which the student was not enrolled in a course for the qualification.

measure also exists for Bachelor's graduates who did not choose to progress into postgraduate study. In Section 2.3, we show that for the pre policy period allowance receipt during postgraduate study is much higher for those who received allowances as undergraduates than for those who did not. This ease of measuring counterfactual allowance receipt is an additional rationale for studying the postgraduate study decisions of Bachelor's graduates.

4.2 Students entering a postgraduate qualification

The second of our two main samples of interest is all domestic students entering a postgraduate qualification. The advantage of this approach is that it captures all students entering study at this level, not just those who recently completed Bachelor's degrees. However, the approach has two main limitations. The first is that we are unable to distinguish changes in behaviour from changes in the underlying population from which new postgraduate students are drawn, or from other changes over time that affect the whole country such as economic conditions and the strength of the labour market.[24] For example, if the proportion of the population with a Bachelor's degree increased then enrolment in postgraduate qualifications might increase even if Bachelor's graduates were no more likely to enter higher study. Also, a decline in job prospects such as that that occurred during the GFC would make study more attractive relative to seeking work, and would increase enrolments. The second limitation is that we cannot observe which students would have been eligible for allowances in the counterfactual case in which the policy change had not occurred. Unlike for Bachelor's graduates, we do not observe whether they received allowances as undergraduates, and their undergraduate study may have been years ago, meaning it would not be a good predictor of their current allowance eligibility. In Section 5.3.2 we describe the alternative methodology we use for predicting which postgraduate entrants would have received allowances without the policy change.

A small proportion of individuals enter multiple postgraduate qualifications in the same year. When we calculate the number of students entering any affected postgraduate qualification or entering Honours in a year, an individual may be counted towards both totals. However, she is counted only once for affected postgraduate qualifications no matter how many such qualifications she enters during the year. In contrast, when we decompose affected postgraduate qualifications by the level of the qualification, such as in Appendix Table 1, the same individual may be counted towards multiple levels of affected postgraduate qualification in the same year.

We construct a number of variables describing postgraduate entrants: age group at the time of entering the postgraduate qualification, total wage earnings in the 6 months prior to entering postgraduate study, whether their first month of study towards the postgraduate qualification was full time, whether and how much they borrowed for living costs on their

[24] This population is essentially any New Zealander with a Bachelor's degree, though the probability such a person enters a postgraduate qualification in a given year is vanishingly small.

student loans in the calendar year in which they entered the postgraduate qualification, whether and how much they borrowed for compulsory course fees on their student loans in the calendar year in which they entered the postgraduate qualification, their wage earnings during postgraduate study,[25] and whether they remained actively enrolled in postgraduate study for a year, defined as being enrolled any time from month 9 to month 12 after entry.[26]

4.3 Categorisation of qualifications

Several qualifications changed categorisation in ways that interfere with the comparability of pre and post data. We change the classification of some of these courses to maximise the comparability of pre and post policy data.

The University of Waikato and Victoria University of Wellington have engineering qualifications that were reclassified from Bachelor's qualifications to Honours qualifications during the period of interest. We classify these qualifications as Honours degrees throughout. Note this does not affect the eligibility of students enrolled in these qualifications to receive student allowances.

From 2013, a number of universities have started offering 180-credit master's qualifications, which require less study than the standard 24-credit master's. On the basis that these qualifications are advertised to students as Master's qualifications, and thus are expected to carry similar prestige in the job market, we code them as Master's in our main specification. However, we alternatively follow the recommendation of the Ministry of Education and code all Master's qualifications first offered in 2013 or later and requiring no more than 1.5 EFTS as Postgraduate Diplomas.

During our period of interest, the Institute of Professional Legal Studies reclassified a Professional Legal Studies Course from a Postgraduate Certificate to a Graduate Certificate, though the course content did not change. We code this as a Graduate Certificate throughout (and thus do not count it as a postgraduate qualification).

We also ran some robustness tests in which we reversed one of these classification decisions at a time (results not presented). Our conclusions were unchanged.

[25] We use three alternative measures of wage earnings during study: total earnings during the six months from the month of entry; total earnings during the 12 months from month of entry; and average monthly earnings during the 12 months from entry, disregarding any months in which the student was not actively enrolled in a course for the qualification. All three measures lead to the same conclusions. All amounts are in real 2014 dollars.
[26] Note raw data on student allowances received are available at the monthly level, whereas data on student loan borrowing are available aggregated to the calendar year only. This difference drives some of the variable definitions.

5 Empirical strategy and results

5.1 The progression of Bachelor's graduates into postgraduate study

5.1.1 The progression of Bachelor's graduates by undergraduate allowance receipt

This section shows how the propensity of Bachelor's graduates to move straight on to postgraduate study varied over time and with the students' allowance receipt as undergraduates. The first three rows of Table 3 show that the number of Bachelor's graduates increased substantially in the 2012-14 completion cohorts. These increases were driven particularly by students who received allowances, whose numbers increased steadily from 2009 to 2013, but also by non-allowance students, especially in 2013 and 2014. These changes reinforce the fact that looking solely at the number of students entering affected postgraduate qualifications might obscure any policy effects if the number of potential entrants is also changing dramatically.

Overall, we see that most Bachelor's graduates do not enter any postgraduate qualification within a year of graduating. However, affected postgraduate qualifications are a more common destination than Honours degrees, and graduates who received allowances are more likely to go on to each type of postgraduate study. The latter may reflect a combination of the causal effect of allowance receipt and the correlation of receiving an allowance with other characteristics that make students likely to study at the postgraduate level.

Table 3: Destinations of Bachelor's graduates by receipt of student allowance during undergraduate

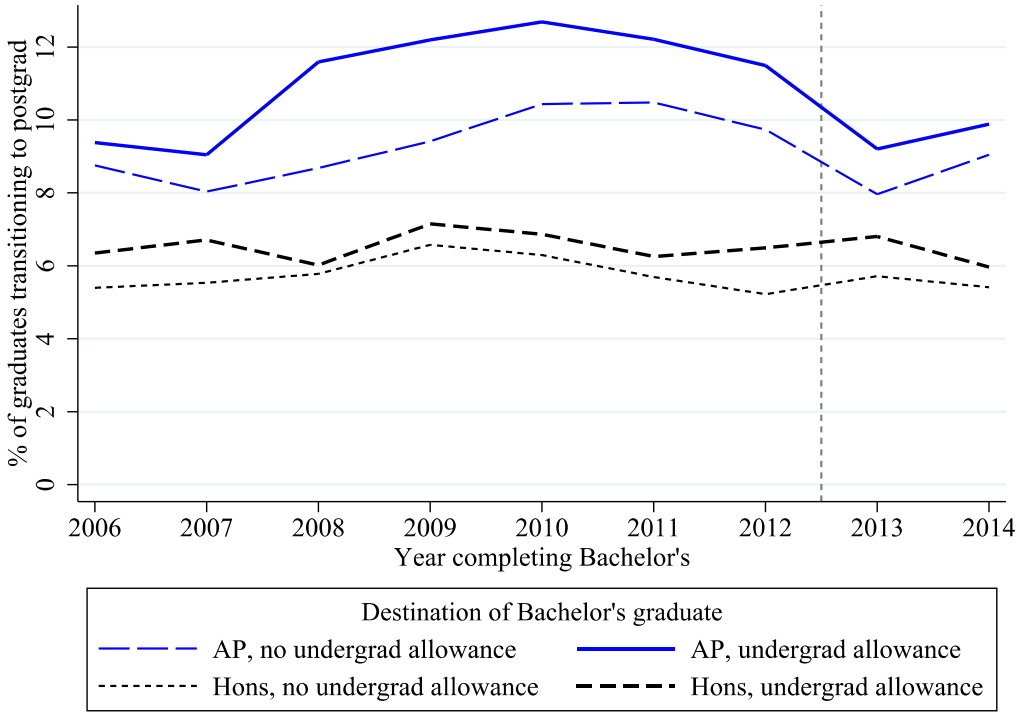
Destination	Received an allowance during Bachelor's study	Year of Bachelor's completion								
		2006	2007	2008	2009	2010	2011	2012	2013	2014
All Bachelor's graduates	No	12,729	12,969	13,407	13,137	13,116	12,417	13,857	14,871	15,819
	Yes	5,745	5,649	5,850	6,306	7,557	8,475	9,657	10,536	9,972
	Total	18,474	18,618	19,257	19,443	20,673	20,892	23,514	25,407	25,791
Bachelor's graduates transitioning to affected postgraduate qualifications	No	1,113	1,044	1,164	1,239	1,368	1,302	1,350	1,185	1,431
	Yes	540	510	678	771	957	1,035	1,110	972	984
	Total	1,653	1,554	1,842	2,010	2,325	2,337	2,460	2,157	2,415
Bachelor's graduates transitioning to Honours	No	687	717	777	864	825	708	726	852	858
	Yes	363	378	354	450	519	531	627	717	594
	Total	1,050	1,095	1,131	1,314	1,344	1,239	1,353	1,569	1,452

Notes: This table shows the number of Bachelor's graduates by whether they received any student allowance during the final 12 months of their undergraduate study overall (top panel), among those who went straight on to a postgraduate qualification affected by the 2013 removal of student allowances (middle panel), and among those who went straight on to Honours (bottom panel). Years end in October. Student counts are randomly rounded to base 3 for confidentiality reasons.

As illustrated by Figure 4, which is based on data from Table 3, the rate of going on to affected postgraduate qualifications shows a distinct pattern over the business cycle: it was higher during the GFC and subsequent recovery for students both with and without allowances. Before the policy change, between 9 and 13 percent of undergraduate allowance recipients each year went on to an affected postgraduate qualification and between 8 and 11 percent of non-recipients. Both these values fell somewhat when the policy change occurred, but the decreases largely reverse the increases at the outset of the GFC and the increase was not much larger for allowance recipients than for non-recipients. Combined, these factors suggest the decrease was likely to have been driven by changing economic conditions rather than by the policy change itself.

In contrast, the rate of transitioning to Honours is relatively constant over time. Six to 7 percent of recipients went on to Honours degrees before the policy change and 5 to 7 percent of non-recipients. These values remained similar after the policy change.

Figure 4: Percentage of Bachelor's graduates transitioning to postgraduate study by undergraduate allowance status



Notes: The figure shows the proportion of Bachelor's graduates who transitioned directly into postgraduate study (AP is affected postgraduate qualifications, Hons is Honours), as described in Section 4.1, by whether they received any allowance during their final year of undergraduate study. The sample is limited to domestic students. The vertical dashed line indicates the timing of the policy change. Years end in October.

Overall, these patterns of destinations of Bachelor's graduates do not suggest that the policy change made Bachelor's graduates less likely to enrol in affected postgraduate study straight after completing undergraduate or more likely to enrol in Honours.

5.1.2 The progression of Bachelor's graduates by undergraduate allowance receipt and age

This section shows how the destinations of Bachelor's graduates in different age groups with different undergraduate allowance receipt changed over time. Different age groups face different student allowance eligibility rules, have different propensities to receive allowances, and differ in their work experience, financial resources, and outside options. Thus they may respond differently to the policy change, and a significant change for one age group could be obscured when all the age groups are aggregated.

Appendix Table 3 shows undergraduate allowance receipt and destination by age at Bachelor's completion. The table shows that allowance receipt rates are highest among the 23 to 29 age group, and lower in the 22 and under and 30+ age groups. The youngest students are likely to have lower allowance eligibility because their allowances are parental income tested; students in the oldest age group are more likely to be studying part time while working and to have higher wages that make them ineligible for allowances. The number of students graduating increased substantially in 2012 to 2014, primarily driven by increases among the younger age groups. For ages 22 and under and ages 30 and over, most of the increase was of students who did not receive allowances; the intermediate age group showed similar increases in completion by students who did and did not receive allowances.

As shown by Figure 5, the propensity for Bachelor's graduates to progress to affected postgraduate qualifications changes non-monotonically with age. The 22 and under and 30 and over age groups have higher rates of entering affected postgraduate qualifications than does the intermediate age group, both among students who received allowances and those who did not. Within each age group, those with allowances go on to affected postgraduate qualifications at higher rates than do those without allowances. This could be partly a consequence of facing a reduced cost of study, but is likely to also be driven by their lower labour market attachment. Students who receive allowances are unlikely to be working for wages for many hours each week while studying, so the transition out of study to full-time work is a significant step; the main reason older students do not receive allowances is because they *are* earning significant wages, and so they may have an easier time entering full-time work.

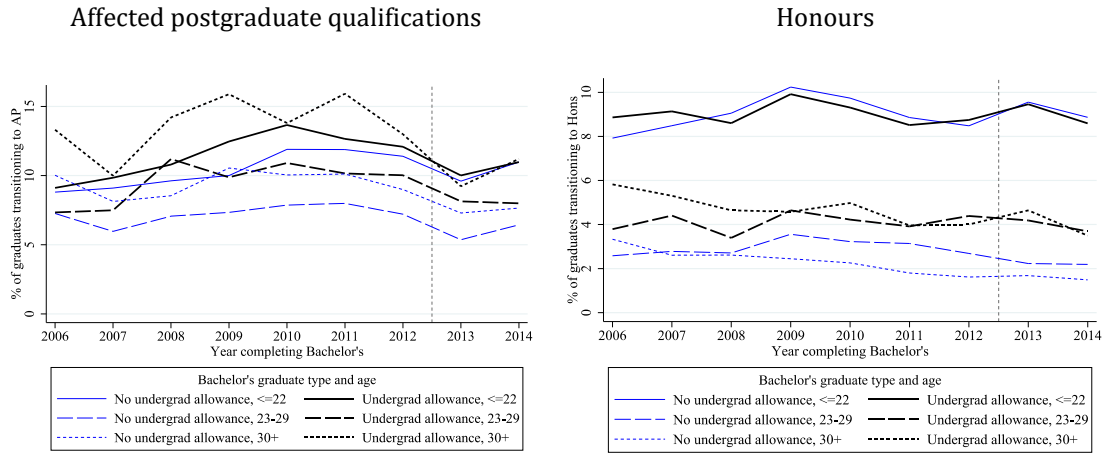
In contrast, rates of going on to Honours are highest for the youngest age group. In the older age groups only, those who received allowances as undergraduates progress to Honours at higher rates than those who did not. This could again be related to their differing levels of labour market attachment.

Recall that the policy change applied to students entering postgraduate study on 1 January 2013 or later. The 2012 cohort of Bachelor's graduates should thus be considered partially treated; many had the option of entering postgraduate study in 2012 before the policy change came into effect, but we allow transitioning students to take up to 11 months to begin

postgraduate study after completing Bachelor's study, so most also could have transitioned by starting after the policy change.

Figure 5 also shows how transitions to postgraduate study changed at the time of the policy change. We see that graduates in all age brackets and both with and without allowances who completed Bachelor's degrees in 2013 and 2014 were less likely to transition to affected postgraduate qualifications than were previous years' cohorts. Progression to Honours shows no such pattern. However, the decreases into affected postgraduate qualifications were similar in size for graduates with and without allowances in each age group and also involved returns to pre-GFC levels. These factors suggest the changes were likely to have been driven by economic conditions rather than by the policy.

Figure 5: Percentage of Bachelor's graduates transitioning to postgraduate study by undergraduate allowance status and age



Notes: The figure shows the proportion of Bachelor's graduates who transitioned directly into postgraduate study, as described in Section 4.1, by whether they received any allowance during their final year of undergraduate study and their age when they completed their Bachelor's degrees. The sample is limited to domestic students. The vertical dashed line indicates the timing of the policy change. Years end in October.

5.1.3 The progression of Bachelor's graduates into full-time versus part-time study by undergraduate allowance receipt

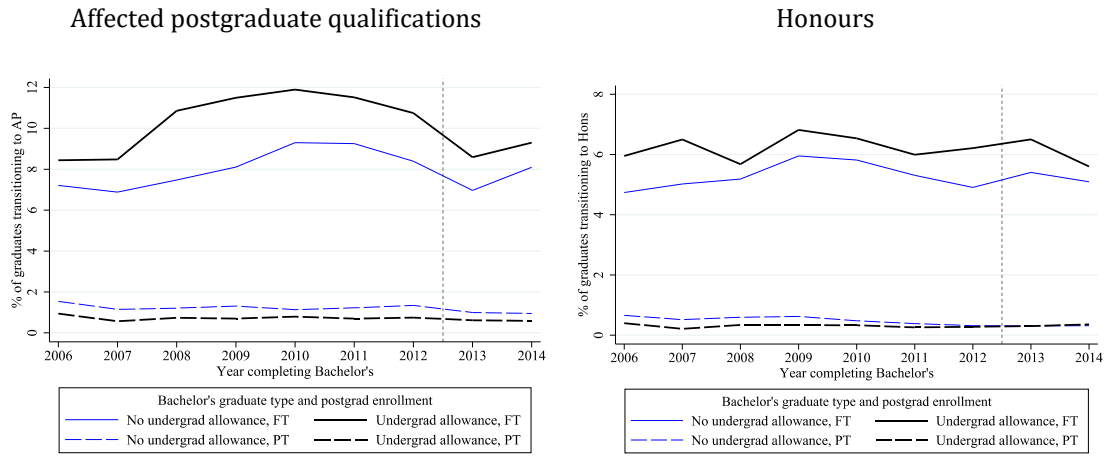
Because part-time students are not normally eligible for student allowances, the policy change could have affected Bachelor's graduates' choices whether to study full time or part time towards postgraduate qualifications without affecting their overall enrolment decisions. In particular, the policy decreased the benefits of full-time study relative to part-time study, and so could have encouraged students who were planning to enter affected postgraduate qualifications to study part time when previously they would have enrolled full time. This could be a concern because part-time students are more likely to drop out of qualifications before completing them.

In this section we look at whether Bachelor's graduates progressing to postgraduate study choose to study part- or full-time. Figure 6 shows how the percentage of Bachelor's graduates

moving into full-time and part-time postgraduate study in affected qualifications and Honours changed over time. The complete data are presented in Appendix Table 4.

The figure shows that very few recent Bachelor's graduates study part time towards either Honours or affected postgraduate qualifications, though part-time postgraduate study is a slightly more popular option for those who did not receive allowances as undergraduates than for those who did. Furthermore, part-time study rates seem not to have increased substantially with the policy change for students with or without allowances. We conclude these data do not suggest that the policy caused Bachelor's graduates to replace full-time postgraduate study with part-time study.

Figure 6: Percentage of Bachelor's graduates transitioning to full-time and part-time postgraduate study by undergraduate allowance status



Notes: The figure shows the proportion of Bachelor's graduates who transitioned directly into full-time or part-time postgraduate study, as described in Section 4.1, by whether they received any allowance during their final year of undergraduate study. A student is considered full time if she enrolled full time in any course in her first month of postgraduate study. The sample is limited to domestic students. The vertical dashed line indicates the timing of the policy change. Years end in October.

5.2 Total enrolment in postgraduate study

Having looked previously at the postgraduate study choices of Bachelor's graduates, in this section we investigate how the overall number and type of students entering postgraduate qualifications, whether directly from Bachelor's degrees or via other routes, changed with the policy change.

5.2.1 Number of postgraduate entrants

As Table 1 above showed and the "All ages" line of Figure 7 illustrates, the total number of students entering affected postgraduate qualifications generally increased over the period of interest, and shows a particular rise during the GFC. The number of new Honours students shows a sharp increase in 2009 followed by a substantial decline, though it remains above 2008 levels, and a smaller increase in 2013.

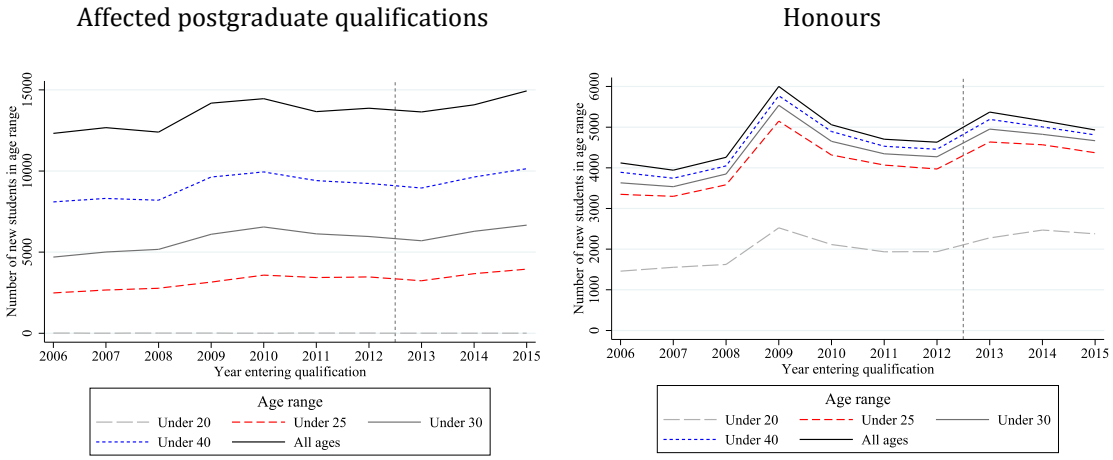
These patterns do not strongly suggest the policy discouraged potential students in general from entering affected postgraduate qualifications, though we cannot be certain, given the limitations of the data, that there has not been such a policy effect. Specifically, if in the absence of the policy change entry to affected postgraduate qualifications would have increased similarly to entry to Honours in 2013, then the figure would suggest the policy discouraged students from entering affected postgraduate qualifications.

5.2.2 Number of postgraduate entrants by age

Figure 7 and Panel A of Appendix Table 5 show the age distributions of students entering postgraduate qualifications each year. Very few entrants to affected postgraduate qualifications are under the age of 20, whereas most entrants to Honours are 24 or under and many are under 20.

Among entrants to affected postgraduate qualifications, pre-policy allowance receipt is higher among younger age groups and falls particularly above age 29, when a greater proportion of students are working while studying part time. Figure 7 shows that entry by the older age groups increased more during the GFC. Pre policy, 29 percent of students entering affected postgraduate qualifications aged 20 to 24 received allowances, compared with 24 percent aged 25 to 29, 11 percent aged 30 to 39, and only 5 percent aged 40 or over. This means a higher proportion of students in the younger age groups are expected to be affected by the policy change. In contrast, allowance receipt by Honours entrants peaks at 60 percent in the 25 to 29 age group when parental income testing no longer applies, and is substantially lower among younger and older age groups.

Figure 7: Number of students entering postgraduate qualifications by age



Notes: This figure shows the total number of domestic students by age entering postgraduate qualifications in years ending October. The dashed vertical line denotes the policy change.

In 2013, entry to affected postgraduate qualifications by students aged 20 to 24 years old fell by 7 percent, while entry in older age groups remained steady, but the 20 to 24 group grew in size fastest over the subsequent two years, contrary to what we expect if the changes were

driven by the policy. In addition, entry to Honours in the 20 to 24 age group increased in 2013 and fell somewhat over the two subsequent years. A relevant question is whether the 2013 increase in Honours entrants was partly driven by the policy causing students to substitute from affected postgraduate qualifications to Honours; this seems unlikely, because the under-20 age group saw a similar increase in entry to Honours in 2013 even though trivial numbers of students ever enter affected postgraduate qualifications at this age.

Taken as a whole, these results are not especially suggestive of a policy impact on the total number of enrolments in affected postgraduate qualifications.

5.2.3 Prior earnings of postgraduate entrants

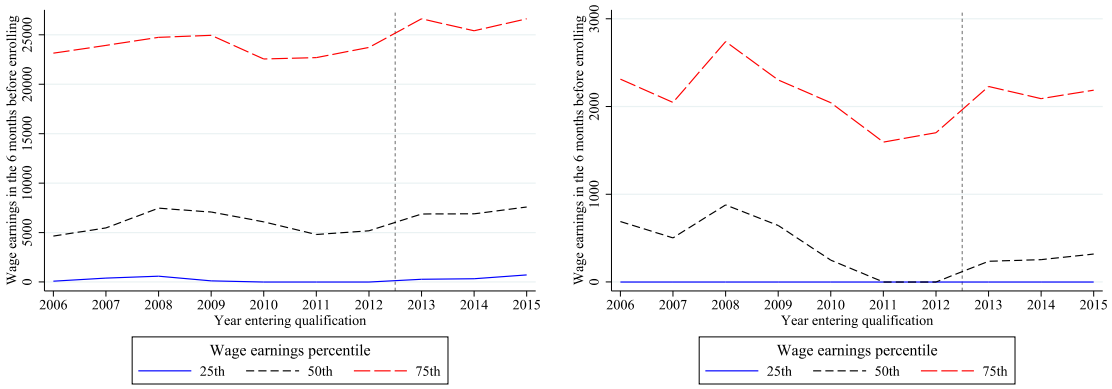
One concern about the policy change is that it could have disproportionately discouraged those on low incomes from entering postgraduate study. Such an effect would be indicated in the data by increases in the average incomes the previous year of entrants to postgraduate qualifications, particularly among the groups with high rates of allowance receipt before the policy.

Figure 8 and Panel B of Appendix Table 5 present the 25th, 50th, and 75th percentiles of the distributions of wage earnings of postgraduate entrants for the six months prior to entering postgraduate study. They show that students in affected postgraduate qualifications are much higher earners prior to entering study than are Honours students at the same stage: the 25th percentile of prior earnings of Honours students is 0 every year, whereas for students in affected postgraduate qualifications it was 0 during our sample period only for three years during the GFC; the 50th percentile for students in affected postgraduate qualifications is 5 to 7.5 thousand most years, compared with a few hundred dollars for Honours students; and the 75th percentile for students in affected postgraduate qualifications is over 20 thousand compared with a few thousand for Honours student. These values are reasonable in light of the fact many students in affected postgraduate qualifications were working before entering study, whereas most Honours entrants were previously studying. However, they do mean Honours students may not be a very good comparison group for students in affected postgraduate qualifications with regards to prior earnings.

The 50th and 75th percentiles of prior wage earnings increase in 2013 for affected postgraduate entrants, which is what we would expect to see if low-income individuals were being discouraged from enrolling in affected postgraduate study. However, Honours entrants also see increases in prior wages in 2013, which are larger in percentage terms than the increases for affected postgraduate students. Furthermore, the increase for affected postgraduate qualification entrants returns prior wages to a similar level to before the GFC. These factors suggest the 2013 increase is unlikely to reflect a policy effect.

Figure 8: Percentiles of earnings of postgraduate entrants prior to entry

Affected postgraduate qualifications Honours



Notes: This figure presents the 25th, 50th, and 75th percentiles of wage earnings of domestic postgraduate entrants in the 6 months before they entered study. Students who earned zero wage income during this time are included. Years end in October. The dashed vertical lines show the timing of the policy change.

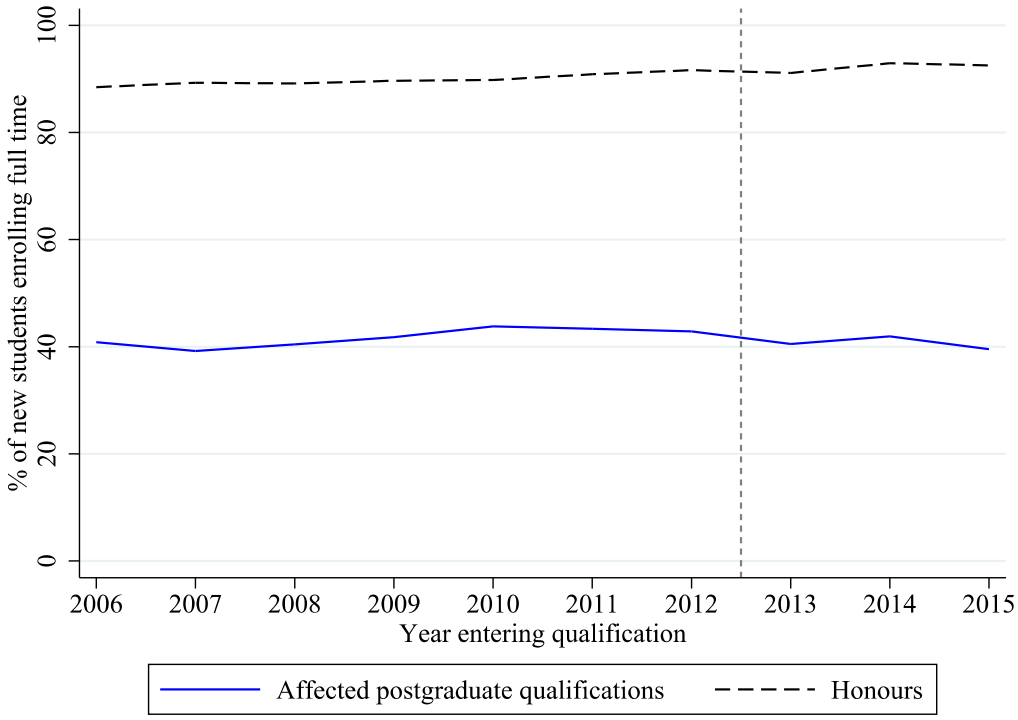
5.2.4 Fraction of postgraduate entrants enrolling full time

As we did with Bachelor's graduates entering postgraduate qualifications in Section 5.1.3, here we look at the proportion of total postgraduate entrants who are studying full time to investigate if the policy caused more new students to choose part-time study as a result of the policy.

Similarly to the case for Bachelor's graduates, Panel C of Appendix Table 5 shows that students entering affected postgraduate qualifications are much less likely to study full time than are Honours entrants. These data are illustrated in Figure 9. It shows the fraction of Honours students studying full time has increased somewhat over time. The fraction of students entering postgraduate qualifications studying full time seems to shift with economic conditions, being slightly higher during the GFC and falling afterwards. Although the decrease in 2013 is consistent with the direction of the hypothesised policy effect, it likely to be driven by job opportunities rather than by the policy.

The data do not seem to suggest that the policy caused a shift from full-time postgraduate study to part-time study.

Figure 9: Percentage of postgraduate students enrolling full time



Notes: This shows the percentage of domestic entrants to postgraduate qualifications who enrolled full time in at least one course in their first month of study. Years end in October. The vertical dashed line gives the timing of the policy change.

5.3 Outcomes and behaviour of postgraduate entrants

Even once students choose to enter a postgraduate qualification, their choices can be affected by their access to student allowances. Students who face a reduction in allowance eligibility receive an increase in their ability to borrow on their student loans for living expenses. However, the total amount they can borrow may be lower than the allowance they would have received, and accumulating student debt may be less appealing to some than the option of increasing their hours worked while they are studying. Financial stress or additional work commitments may reduce the ability of students to successfully complete their course of study and increase their propensity to leave study before completing their qualifications.

In this section, we investigate the effect of the policy change on student loan borrowing of different types, paid work while studying, and drop-out rates. We examine averages for the populations in the two types of postgraduate qualification, and also for subpopulations of students whom we predict would have received high or low student allowances absent the policy change.

5.3.1 Borrowing for fees by postgraduate entrants

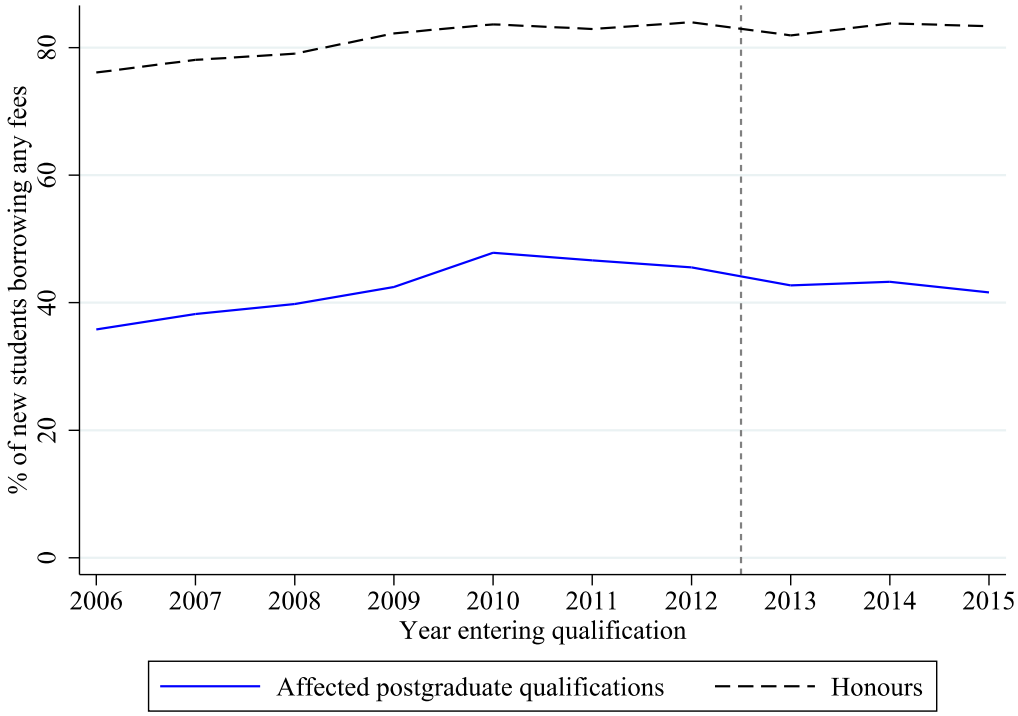
The policy did not directly affect the ability of students to borrow for compulsory course fees, but indirect effects are possible. For instance, an allowance might enable a student with limited

existing financial resources to direct these resources to course fees, whereas without the allowance she would choose to spend them on living expenses and take out a student loan to pay her fees. In this section we investigate how student loan borrowing to pay compulsory course fees changed with the policy change.

Figure 10 and Appendix Table 7 show that fewer than 50 percent of students entering affected postgraduate qualifications borrow for compulsory course fees, whereas around 80 percent of Honours entrants do. Borrowing for fees by entrants to affected postgraduate qualifications was higher during the GFC, whereas it showed little increase over this period for Honours entrants. This may be because the former are more likely to be in the labour market before or during their postgraduate study, so their ability to pay fees without borrowing is affected more by economic conditions.

The 2013 decrease in borrowing for fees by students in affected postgraduate qualifications is thus not suggestive that the removal of allowances caused more students to borrow on their student loans to pay compulsory course fees.

Figure 10: Percentage of postgraduate entrants borrowing any compulsory course fees



Notes: This figure shows the percentage of domestic postgraduate entrants who borrowed any compulsory course fees on their student allowances during the calendar year in which they entered the qualification. Years on the horizontal axis end in October. The dashed vertical line indicates the policy change.

5.3.2 Predicted counterfactual student allowances

As mentioned previously, we expect the policy to affect only students who would have received allowances absent the policy change. Although we cannot directly observe the counterfactual

allowances the students in our data would have received, we can estimate them based on the information we do have about the students. In particular, in this section we show that in the pre policy period whether a student borrowed on her student allowance to pay compulsory course fees is a good predictor of whether she received an allowance. This relationship is sensible theoretically: borrowing to pay compulsory course fees suggests a lack of alternative sources of funds that is likely to also cause the student to receive an allowance. Importantly, students' ability to borrow to pay compulsory course fees was not altered by the policy change, and we saw previously that it seems not to have been significantly affected by the policy change.[27] We make the untestable assumption that after the policy change borrowing for fees remains a good predictor for the allowance a student would have received had the policy change not occurred.

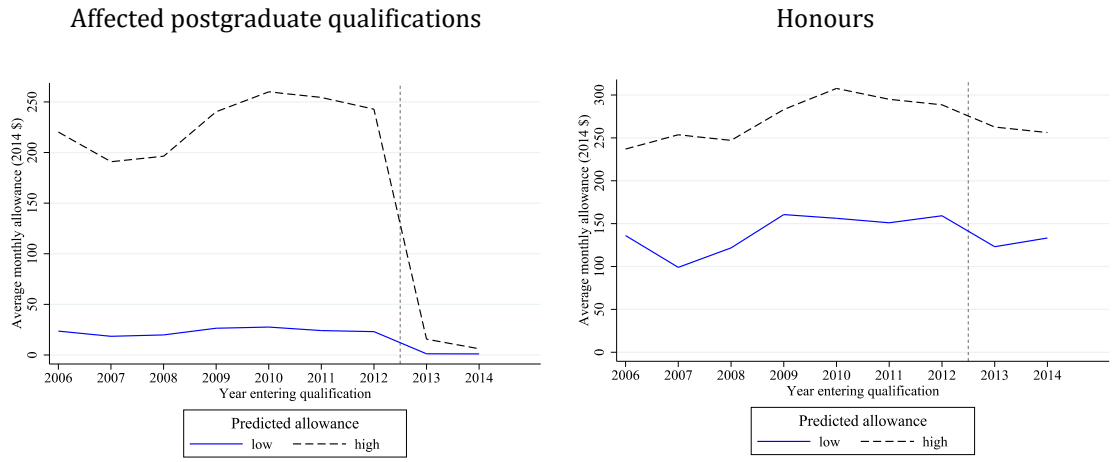
Appendix Table 8 shows for three different measures of allowance receipt that in the period 2006 to 2010 borrowing at all for compulsory course fees is associated with receiving a higher allowance, and more so the higher the amount borrowed. The explanatory power of these regressions is higher for entrants to affected postgraduate qualifications than for entrants to Honours, but the relationships in both are highly significant.

Having estimated the relationship using 2006 to 2010 data, we check that it still holds for the period 2011 to 2012. Figure 11 shows how average student allowance for students with above-median borrowing for fees ("high allowance") and below-median borrowing for fees ("low-allowance") varies over time. It shows that before the policy change students predicted to have high allowances indeed had much higher average allowances than did students predicted to have low allowances, and the relationship seems as strong for the out-of-sample years 2011 and 2012 as for the years used to estimate the relationship.

As expected, allowances for both types of affected postgraduate students drop sharply in 2013, but the change is much larger in dollar terms for the "high allowance" group. High- and low-allowance Honours entrants both show small decreases at this time.

[27] A student who foregoes or is not eligible for an allowance can borrow a similar amount on her student loan to cover living expenses, and this type of borrowing can be separately identified from borrowing for compulsory course costs.

Figure 11: Average allowances for postgraduate entrants by predicted allowance



Notes: This figure shows average monthly student allowance during those of the 12 months after entering a postgraduate qualification in which the student remained enrolled. Domestic students only are included, and they are classified as high-allowance or low-allowance based on their borrowing for compulsory course fees. Years end in October. The dashed vertical lines indicate the policy change.

This section has shown that having above-median fee borrowing is a good indication that the student is likely to have been allowance-eligible absent the policy change. In the following subsections, as well as showing changes in behaviour for all postgraduate students, we show them for "low allowance" and "high allowance" students based on their level of borrowing for fees.

5.3.3 Borrowing for living costs by postgraduate entrants

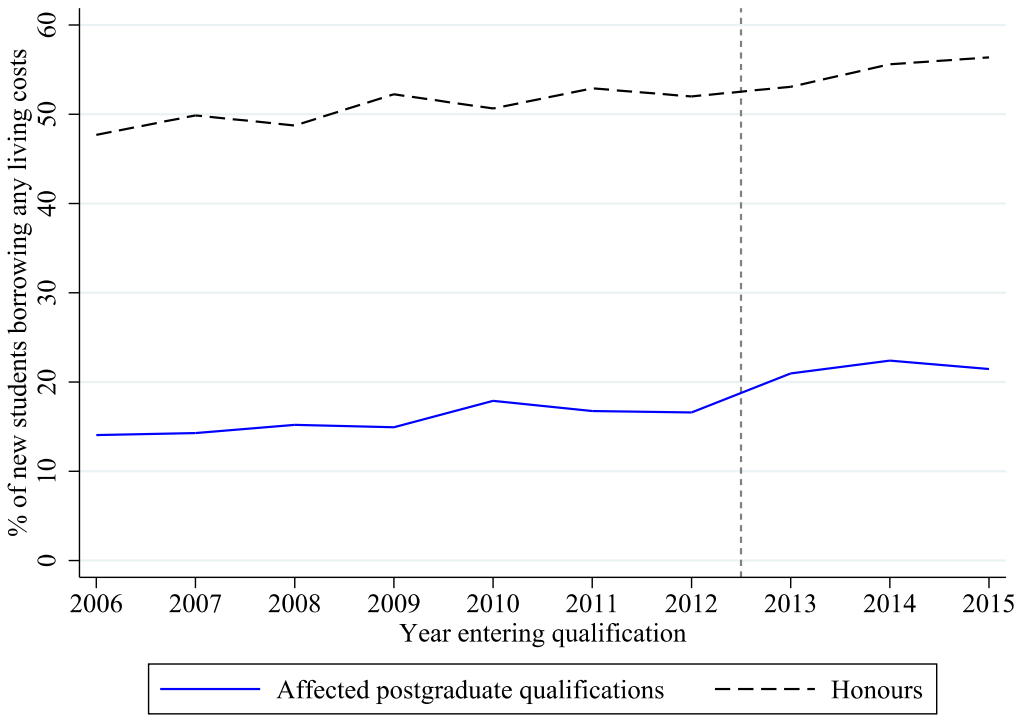
Borrowing to pay living costs is fairly uncommon for students entering affected postgraduate qualifications, with around 15 to 18 percent doing so each pre-policy year, as shown in Appendix Table 7. The proportion generally trended upwards over the sample period. A much higher proportion of Honours entrants borrow to pay living costs, likely because fewer work substantial hours while studying. Among those who do borrow for living costs, the average amount borrowed is relatively similar for students entering affected postgraduate qualifications and students entering Honours. This amount fell substantially for affected postgraduate entrants during the GFC and fell somewhat for Honours students, possibly because more students were eligible for higher student allowances during this period.

Figure 12 shows that when the policy came into effect in 2013, the proportion of affected postgraduate qualification entrants who borrowed for living costs increased modestly; borrowing by Honours entrants shows no similar discontinuity at this date. However this small increase by affected postgraduate entrants overall conceals a large degree of heterogeneity. When we divide entrants by whether they had high or low predicted allowances, as in Figure 13, we see that the proportion of high-allowance students who borrow for living costs increases from around 35% to nearly 50%; in contrast, very few low-allowance students borrow for living

costs and this proportion does not increase in 2013. Honours students, who did not lose allowance eligibility, show no similar pattern.

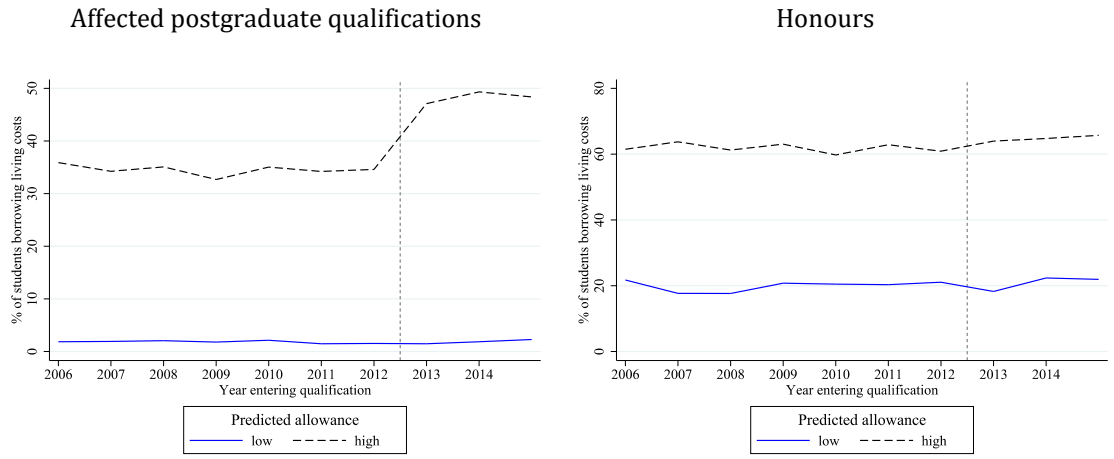
These results strongly suggest that postgraduate students who became ineligible for student allowances as a result of the policy compensated for this change by borrowing more on their student loans to pay their living expenses while studying. Given that the purpose of the student allowance is primarily to contribute towards living costs, this degree of substitution is entirely plausible.

Figure 12: Percentage of postgraduate entrants borrowing any living costs



Notes: This figure shows the percentage of domestic postgraduate entrants who borrowed any money for living expenses on their student allowances during the calendar year in which they entered the qualification. Years on the horizontal axis end in October. The dashed vertical line indicates the policy change.

Figure 13: Percentage of postgraduate entrants borrowing any living costs by predicted allowance



Notes: This figure shows the percentage of domestic postgraduate entrants who borrowed any money for living expenses on their student allowances during the calendar year in which they entered the qualification. Students are classified as high-allowance or low-allowance based on their borrowing for compulsory course fees. Years on the horizontal axis end in October. The dashed vertical lines indicate the policy change.

5.3.4 Wage earnings during postgraduate study of postgraduate entrants

As well as affecting borrowing, removing allowances may affect students' need to work while studying, which may in turn reduce their ability to be successful in their study, help them get jobs after they graduate, or both. Removing allowances also lowers the cost of working because students no longer face allowance decreases when their wage earnings increase beyond a certain point.

In this section we look at whether working while studying changed for entrants to affected postgraduate qualifications or Honours when the policy change occurred. In the following section we examine whether entrants' propensities to persist at their studies for at least a year changed.

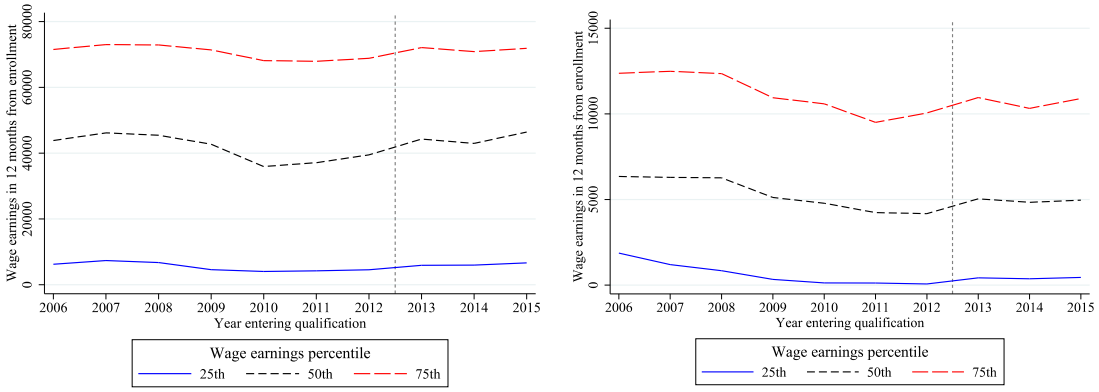
Appendix Table 7 shows that the majority of students entering affected postgraduate qualifications do some paid work in their first year of postgraduate study, as do the majority of Honours entrants. However, monthly wage earnings while studying among those who are simultaneously working are much higher for students entering affected postgraduate qualifications than for students entering Honours, likely reflecting the older ages of affected postgraduate students and the higher proportion who study part time. Entrants to affected postgraduate qualifications who work while studying earn monthly averages of over $4,000 every year, compared with $700 to $900 for Honours entrants.

Figure 14 shows the 25th, 50th, and 75th percentiles of annual wage earnings during study for entrants to affected postgraduate qualifications and Honours, including entrants who have zero wage income. The percentiles of wage earnings for entrants to affected postgraduate

qualifications have a distinctive pattern over time: they fall in 2009 and 2010 and rise again 2013. This is similar to the timing of the GFC, and is more likely to be driven by changing economic conditions than by the policy change. Reinforcing this, we see that the wages of Honours entrants show a similar dip, though on top of an overall downward trend over time.

Figure 14: Earnings percentiles of postgraduate entrants during study

Affected postgraduate qualifications Honours

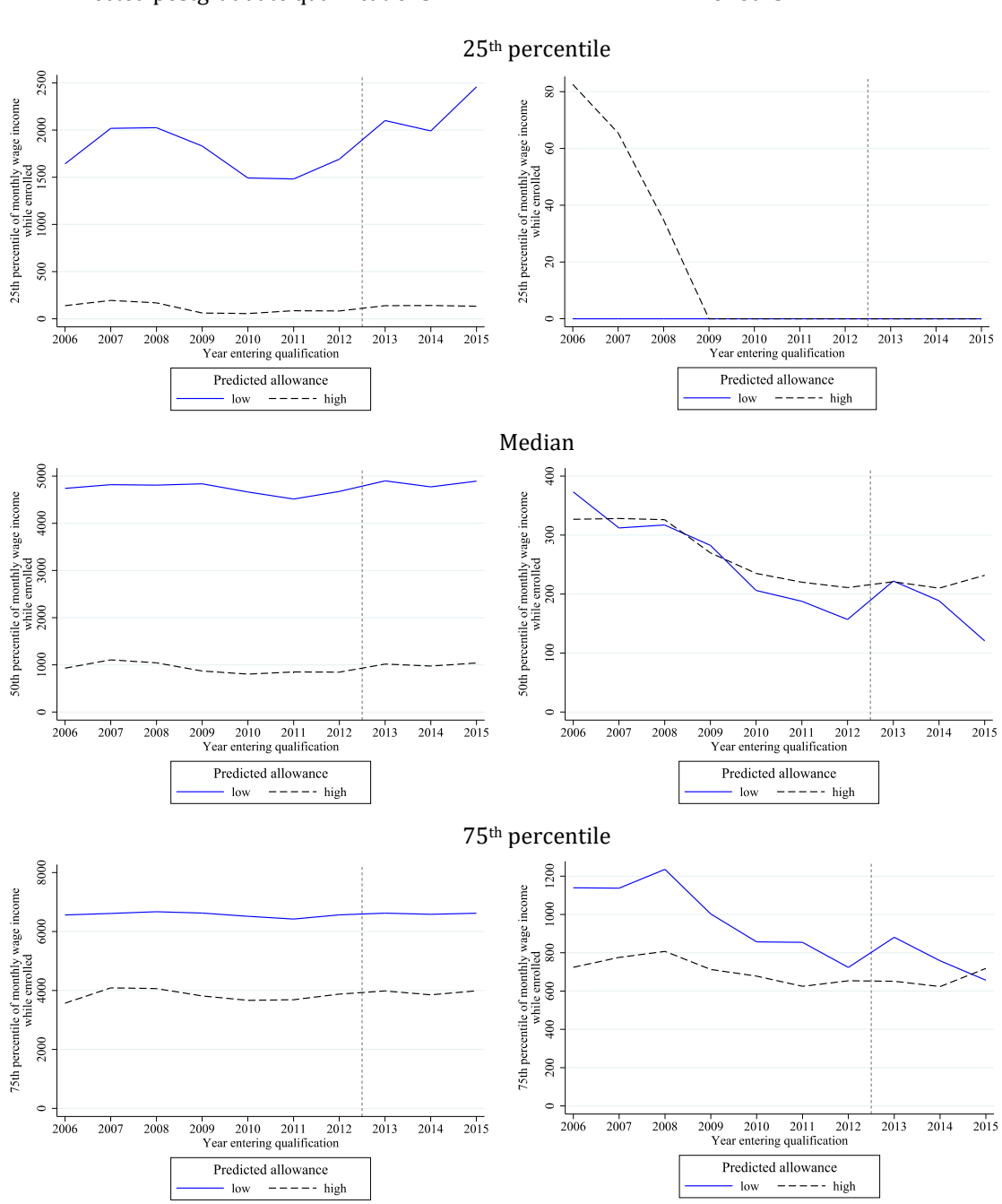


Notes: This figure presents the 25th, 50th, and 75th percentiles of wage earnings of domestic postgraduate entrants in the 12 months from entering study. Students who earned zero wage income during this time are included. Years end in October. The dashed vertical lines show the timing of the policy change.

In Figure 15 we disaggregate students by whether they have a high or low predicted allowance and focus on average monthly allowance in the months in which the student was enrolled in the qualification to control for any differences in drop-out rates. Students with high predicted allowances, meaning high borrowing for course fees, tend to earn low wages while studying and vice versa, as we would expect because sufficiently high earnings make a student ineligible to receive an allowance and give him the means to pay course fees without borrowing.

Among entrants to affected postgraduate qualifications, the wage earnings of high-allowance students, whom we expect to have been much more affected by the policy change than low-allowance students, vary little over time in dollar terms. The wage earnings of low-allowance students seem to move with the business cycle, particularly in the lower percentiles of the distribution. None of these patterns suggest an effect of the policy on student's propensity to work while in postgraduate study.

Figure 15: Earnings percentiles of postgraduate entrants during study by predicted allowance



Notes: This figure presents the 25th, 50th, and 75th percentiles of monthly wage earnings of domestic postgraduate entrants while studying. Students who earned zero wage income during this time are included. Students are classified as high-allowance or low-allowance based on their borrowing for compulsory course fees. Years end in October. The dashed vertical lines show the timing of the policy change.

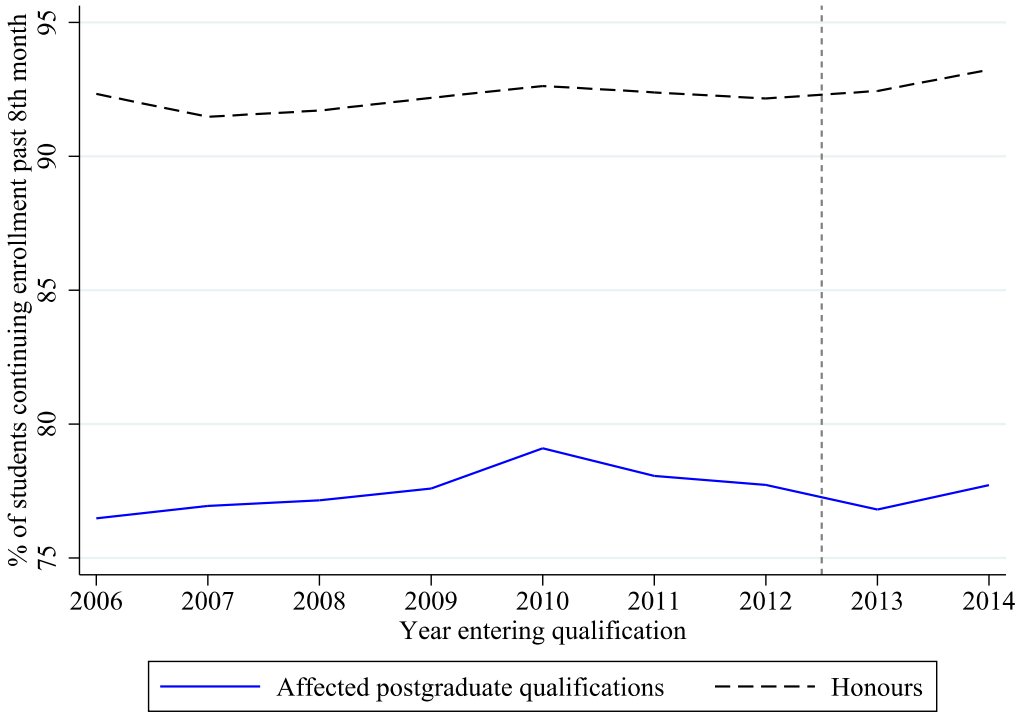
5.3.5 Continuation of study by postgraduate entrants

Receiving an allowance reduces the financial burden on students, allowing them to accrue less debt or to work less while studying. Because allowances reduce the cost of studying relative to

not studying, removing them could cause more students to drop out.[28] To measure this, we consider the extent to which students persist with their studies, measured as being still enrolled in the same postgraduate qualification any time in months 9 to 12 after entering the qualification.[29]

Figure 16 and Appendix Table 7 show that each year 75 to 80 percent of students who enter affected postgraduate qualifications and around 92 percent of students who enter Honours continue to the 9th month of study or beyond. Continuation rates for students in affected postgraduate qualifications were somewhat higher during the GFC than before or after it, suggesting these students are more likely to drop out during their first postgraduate year when their job prospects are better. The continuation rate of Honours students varies less over time.

Figure 16: Percentage of postgraduate entrants continuing study



Notes: This figure shows the percentage of domestic postgraduate entrants who were still enrolled in their qualification any time from the 9th to 12th month after entering it. Years end in October. The dashed vertical line indicates the policy change.

When we decompose the postgraduate entrant population into high-allowance and low-allowance students, as in Figure 17, we see that high-allowance students have higher continuation rates than do low allowance students, and their continuation rates are much more

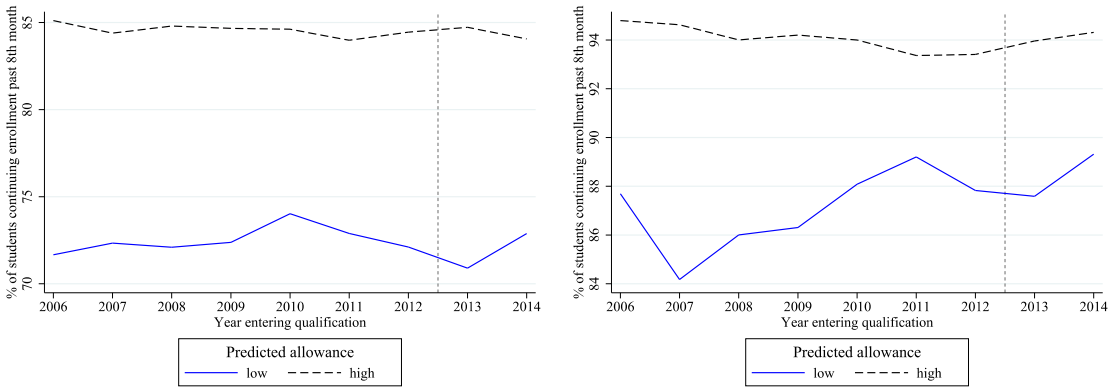
[28] Allowance eligibility is based on the date a student enters postgraduate study, so the idea is not that existing students could be caused to drop out, but that new students could have lower probabilities of sticking with their study if they face higher financial stress than previous cohorts.
[29] We chose 9 to 12 months because some of the qualifications considered can be completed in a year excluding summer semester, so this length should not inadvertently classify students who complete their qualification and leave study within a year as dropping out.

stable over time, suggesting they are less connected to the labour market and less affected by labour market conditions. The data provide no sign that among entrants to affected postgraduate qualifications the continuation rates of high-students fall more with the policy change than do the rates of low-allowance students. The continuation rates of high-allowance entrants to affected postgraduate qualifications and to Honours show a similar degree of variation over time, again not suggesting the policy increased the drop-out rates of affected students.

Overall, the data do not suggest that removing allowances made entrants to affected postgraduate qualifications who would have received allowances more likely to drop out.

Figure 17: Percentage of postgraduate entrants continuing study by predicted allowance

Affected postgraduate qualifications Honours



Notes: This figure shows the percentage of domestic postgraduate entrants who were still enrolled in their qualification any time from the 9th to 12th month after entering it. Students are classified as high-allowance or low-allowance based on their borrowing for compulsory course fees. Years end in October. The dashed vertical line indicates the policy change.

6 Conclusions

This report investigates how the study-related decisions of students and potential students changed when student allowances for all postgraduate qualifications except Honours were removed in 2013. When the policy change occurred, the fraction of domestic students entering an affected postgraduate qualification who received any student allowance fell from around 18 percent to less than 2 percent; the policy change affected the financial situations of a substantial number of students. Among students entering an affected postgraduate qualification in 2012 who received some allowance, the average annual value of the allowance was $7,234, slightly higher than the $6,199 received on average by such an Honours entrant. The fraction of students potentially affected by the policy varied across the affected postgraduate qualifications: it was highest for Master's students, 25 percent of whom received student allowances before the policy change, and lowest for Postgraduate Certificate students, only 2 percent of whom received allowances before the policy change. Students under the age of 24 are less likely to receive an

allowance because a parental income test applies to them, and students in older age groups are less likely to receive an allowance because they are more likely to study part time and thus be ineligible, or to earn high enough personal income that their allowances fall to zero. The fraction of domestic students entering Honours degrees who received any student allowance also decreased at the time of the policy change, though only from 42 percent in 2012 to 36 percent in 2013. This change was likely due to the strengthening labour market.

We first focus on the decisions of recent Bachelor's graduates whether to move straight into postgraduate study and if so at what level. Before the policy change, on average 10 percent went straight into affected postgraduate study and 6 percent went straight into Honours. We find no evidence to suggest that the policy made Bachelor's graduates less likely to go straight into affected postgraduate study, either overall or within any age group. Similarly, we do not find any suggestion that the policy caused affected students to enrol part time in postgraduate study when they would previously have enrolled full time.

Next we consider all entrants to postgraduate qualifications. We study: whether the number of entrants overall or in a particular age group fell; whether the pre-entry wages of students are higher after the policy, as we would see if low-income people are discouraged from enrolling by not being eligible for allowances; and whether enrolment shifted from full time to part time as part-time study became relatively cheaper. In none of these dimensions do the data suggest a significant policy effect, though we cannot definitively say the policy had no impact.

Finally we examine the outcomes and behaviour of entrants to postgraduate study. We see no evidence that student loan borrowing for compulsory fees increased, that students worked more for wages while they were studying, or that rates of dropping out in the first year of postgraduate study increased. Where the data do suggest an effect is in student loan borrowing for living expenses, consistent with the findings of Smart (2013). Specifically, among students who enrol in affected postgraduate qualifications whom we predict would have been eligible for allowances had the policy change not occurred, the percentage who borrow on their student loans for living expenses increased from 35 percent to 50 percent with the policy change. In contrast, students entering affected postgraduate qualifications whom we predict would not have been eligible for allowances regardless do not increase their borrowing for living expenses, and nor do students enrolled in Honours regardless of their allowance eligibility.

Although we are not able to cleanly identify the effects of the policy, our results suggest that the largest impact was likely to be that students who lost eligibility for allowances increased their student loan borrowing, and thus face a larger burden of student debt.

Another inference we draw is that student enrolment and most other behaviours can be strongly affected by economic conditions. In particular, we see substantial changes in most outcomes during the GFC. Consequently, care needs to be taken in attributing changes in student numbers or behaviour to policy changes when economic conditions are fluctuating.

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Appendix

Appendix Table 1: New students entering affected postgraduate qualifications by level and their receipt of student allowances

		Year									
		2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Postgraduate Certificate	Total students entering	2,505	2,682	2,652	3,024	2,883	2,682	2,850	2,856	3,153	3,771
	Students receiving an allowance	27	36	45	63	87	87	63	18	15	.m
	Average allowance	$7,365	$6,228	$5,198	$6,604	$6,207	$5,687	$5,860	.s	.s	.m
Postgraduate Diploma	Total students entering	4,638	4,746	4,488	5,184	5,358	4,851	5,007	4,653	4,236	4,275
	Students receiving an allowance	525	492	513	777	900	840	810	84	45	.m
	Average allowance	$7,390	$6,906	$6,945	$6,888	$6,966	$6,676	$6,574	$3,716	$3,132	.m
Master's	Total students entering	4,278	4,335	4,371	4,953	5,259	5,184	5,082	5,214	5,763	5,940
	Students receiving an allowance	849	798	870	1,236	1,578	1,515	1,416	117	93	.m
	Average allowance	$8,588	$8,531	$7,923	$7,800	$7,876	$7,409	$7,556	$4,463	$2,875	.m
PhD	Total students entering	894	903	885	1,020	954	942	921	921	930	948
	Students receiving an allowance	99	102	99	162	165	183	168	33	6	.m
	Average allowance	$8,503	$8,901	$7,638	$8,747	$8,310	$8,166	$8,277	$4,731	.s	.m

Notes: This table replicates Table 1 for each constituent affected postgraduate qualification. Values denoted .m are missing and those denoted .s are suppressed for confidentiality reasons. See the notes to Table 1 for further details.

Appendix Table 2: Bachelor's graduates entering disaggregated postgraduate qualifications and their receipt of student allowances

			Year of postgraduate entry									
Postgraduate qualification	**Received an allowance during Bachelor's study**		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Post-graduate certificate	No	Total students entering	258	279	276	366	396	393	378	270	315	348
		Students receiving an allowance	3	0	0	6	3	6	3	0	0	.m
		Average allowance in first 6 months	.s	.s	.s	.s	.s	.s	.s	.s	.s	.m
	Yes	Total students entering	132	141	180	225	291	318	294	264	264	273
		Students receiving an allowance	6	9	9	15	21	24	15	9	9	.m
		Average allowance in first 6 months	.s	.s	.s	.s	3,492	4,015	.s	.s	.s	.m
Post-graduate diploma	No	Total students entering	453	447	459	471	540	510	504	441	438	354
		Students receiving an allowance	27	27	27	51	60	60	57	3	3	.m
		Average allowance in first 6 months	3,324	3,600	3,302	3,893	3,566	2,988	3,828	.s	.s	.m
	Yes	Total students entering	231	240	267	306	372	420	420	342	279	216
		Students receiving an allowance	162	171	192	240	303	318	300	39	30	.m
		Average allowance in first 6 months	4,107	3,955	4,250	4,210	4,185	3,643	3,720	1,599	1,357	.m
Master's	No	Total students entering	315	324	345	366	447	396	438	498	657	672
		Students receiving an allowance	21	21	27	42	51	39	45	6	6	.m
		Value (6 mon)	4,455	3,270	3,151	3,837	3,642	3,909	3,310	.s	.s	.m
	Yes	Total students entering	156	147	186	237	312	309	363	366	426	396
		Students receiving an allowance	114	108	132	195	276	261	300	21	45	.m
		Average allowance in first 6 months	4,601	4,152	4,081	4,557	4,355	4,074	4,036	2,344	2,028	.m

Notes: This table replicates Table 2 for each constituent affected postgraduate qualification except PhDs, values for which are omitted due to the small numbers not satisfying confidentiality requirements. Values denoted .m are missing and those denoted .s are suppressed for confidentiality reasons. See the notes to Table 2 for further details.

Appendix Table 3: Progression of Bachelor's graduates to postgraduate study by age

Age at Bachelor's completion	Destination	Received an allowance during Bachelor's study	Year of Bachelor's completion								
			2006	2007	2008	2009	2010	2011	2012	2013	2014
<=22	All Bachelor's graduates	No	6,234	6,363	6,537	6,456	6,654	6,267	6,756	7,365	8,043
		Yes	2,403	2,538	2,685	3,015	3,768	4,299	4,788	5,094	4,692
		Total	8,637	8,901	9,222	9,471	10,422	10,566	11,544	12,459	12,735
	Bachelor's graduates transitioning to affected postgrad qualifications	No	549	579	630	645	792	744	768	705	882
		Yes	219	249	291	378	513	543	579	510	516
		Total	768	828	921	1,023	1,305	1,287	1,347	1,215	1,398
	Bachelor's graduates transitioning to Honours	No	492	540	591	660	648	555	573	705	711
		Yes	213	231	231	300	351	366	420	483	405
		Total	705	771	822	960	999	921	993	1,188	1,116
23-29	All Bachelor's graduates	No	3,099	3,417	3,582	3,570	3,318	3,090	3,384	3,633	3,882
		Yes	2,085	1,974	2,061	2,175	2,721	3,012	3,441	3,846	3,765
		Total	5,184	5,391	5,643	5,745	6,039	6,102	6,825	7,479	7,647
	Bachelor's graduates transitioning to affected postgrad qualifications	No	225	204	255	261	261	249	243	195	252
		Yes	153	150	231	216	297	306	345	312	300
		Total	378	354	486	477	558	555	588	507	552
	Bachelor's graduates transitioning to Honours	No	81	96	96	129	108	96	90	81	87
		Yes	78	87	72	99	114	117	150	162	138
		Total	159	183	168	228	222	213	240	243	225
30+	All Bachelor's graduates	No	3,393	3,183	3,288	3,111	3,144	3,054	3,714	3,864	3,894
		Yes	1,254	1,131	1,098	1,116	1,065	1,161	1,425	1,593	1,518
		Total	4,647	4,314	4,386	4,227	4,209	4,215	5,139	5,457	5,412
	Bachelor's graduates transitioning to affected postgrad qualifications	No	339	261	282	330	318	309	333	282	297
		Yes	168	114	156	177	147	183	183	147	171
		Total	507	375	438	507	465	492	516	429	468
	Bachelor's graduates transitioning to Honours	No	114	84	87	75	72	57	60	66	60
		Yes	75	60	51	51	54	48	57	75	54
		Total	189	144	138	126	126	105	117	141	114

Notes: This table replicates Table 3 but further decomposes the population of Bachelor's graduates by age at Bachelor's completion. Student counts are randomly rounded to base 3 for confidentiality reasons. See the notes to Table 3 for further details.

Appendix Table 4: Full-time and part-time enrolment in postgraduate study by Bachelor's graduates

			Year of Bachelor's completion								
Received an allowance during Bachelor's study	**Destination**	**Postgraduate study type**	2006	2007	2008	2009	2010	2011	2012	2013	2014
No	Bachelor's graduates transitioning to affected postgraduate qualifications	Full time	918	894	1,002	1,065	1,218	1,149	1,161	1,038	1,281
		Part time	195	150	162	174	150	153	189	147	150
	Bachelor's graduates transitioning to Honours	Full time	603	651	696	783	762	660	681	804	804
		Part time	84	66	81	81	63	48	45	48	54
Yes	Bachelor's graduates transitioning to affected postgraduate qualifications	Full time	483	480	636	726	897	975	1,038	906	927
		Part time	57	30	42	45	60	60	72	66	57
	Bachelor's graduates transitioning to Honours	Full time	342	366	333	432	492	507	600	687	558
		Part time	21	12	21	18	27	24	27	30	36

Notes: This table provides information on the study status during postgraduate study of Bachelor's graduates who transitioned straight into postgraduate qualifications as described in Section 4.1. Affected postgraduate qualifications are those affected by the 2013 removal of student allowances for postgraduate study. A student is classed as full time if she enrolled full time in any course credited towards the qualification in her first month of postgraduate study, and part time otherwise. Years end in October. Student counts are randomly rounded to base 3 for confidentiality reasons.

Appendix Table 5: Number and characteristics of postgraduate entrants

Postgraduate qualification			Year of postgraduate entry									
			2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Panel A: Age breakdown of postgraduate entrants												
Affected postgraduate qualifications	Number of entrants in age category:	Under 20	12	6	9	9	6	9	9	6	6	3
		20-24	2,475	2,658	2,763	3,144	3,579	3,423	3,462	3,231	3,669	3,945
		25-29	2,205	2,340	2,397	2,949	2,967	2,691	2,490	2,469	2,613	2,712
		30-39	3,405	3,303	3,027	3,528	3,393	3,282	3,270	3,249	3,342	3,480
		40+	4,221	4,359	4,200	4,551	4,515	4,251	4,638	4,689	4,452	4,794
Honours	Number of entrants in age category:	Under 20	1,458	1,554	1,623	2,526	2,115	1,935	1,941	2,277	2,472	2,376
		20-24	1,890	1,743	1,959	2,625	2,199	2,133	2,031	2,358	2,097	1,995
		25-29	282	237	264	390	336	276	303	315	255	297
		30-39	258	207	198	237	243	186	183	240	183	141
		40+	228	198	213	225	165	174	174	177	150	120
Panel B: Distribution of prior earnings of postgraduate entrants												
Affected postgraduate qualifications	Percentile of wage earnings in 6 months prior to entry:	25th	78	392	586	115	0	0	0	278	332	715
		50th	4,642	5,469	7,465	7,073	6,085	4,804	5,176	6,876	6,896	7,586
		75th	23,142	23,929	24,745	24,949	22,552	22,698	23,721	26,620	25,411	26,622
Honours	Percentile of wage earnings in 6 months prior to entry:	25th	0	0	0	0	0	0	0	0	0	0
		50th	689	503	879	644	249	0	0	236	255	318
		75th	2,312	2,047	2,740	2,302	2,044	1,594	1,702	2,228	2,090	2,187
Panel C: Breakdown of postgraduate entrants by part-time or full-time status												
Affected postgraduate qualifications	Study type:	Part time	7,290	7,704	7,383	8,253	8,124	7,737	7,923	8,115	8,175	9,033
		Full time	5,031	4,965	5,016	5,925	6,333	5,919	5,943	5,529	5,907	5,904
Honours	Study type:	Part time	477	420	462	618	516	429	387	477	366	369
		Full time	3,645	3,519	3,798	5,379	4,542	4,272	4,242	4,893	4,794	4,560

Notes: Panel A of this table shows the number of students in each age category who enter postgraduate qualifications affected by the 2013 removal of student allowances (affected postgraduate qualifications) and Honours. Panel B shows the distribution of wage earnings of these students over the previous six months. Panel C shows many of these students study full time (enrol full time in any course counted towards the qualification in their first month of postgraduate study) and how many part time. Years end in October. Student counts are randomly rounded to base 3 for confidentiality reasons.

Appendix Table 6: Student loan borrowing, wage earnings, and drop-out rates of postgraduate entrants

	Year of postgraduate entry									
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Panel A: Students entering affected postgraduate qualifications										
Total number of entrants	12,321	12,672	12,399	14,181	14,457	13,656	13,866	13,641	14,079	14,937
Number of entrants who borrowed for living costs	1,731	1,812	1,884	2,115	2,586	2,286	2,301	2,859	3,153	3,204
Average living costs borrowed in the calendar year by those who borrowed for living costs	$5,104	$5,086	$4,993	$4,526	$4,537	$4,232	$4,275	$5,595	$5,732	$5,665
Number of entrants who borrowed for fees	4,413	4,845	4,932	6,021	6,915	6,366	6,315	5,826	6,090	6,213
Average fees borrowed in the calendar year among those whose borrowed for fees	$5,819	$6,009	$6,062	$6,063	$6,630	$6,696	$6,868	$6,990	$7,332	$7,651
Number of entrants with any wage income in their first year of postgraduate study	10,512	11,025	10,653	11,844	11,961	11,382	11,589	11,556	11,982	12,450
Average monthly wage earnings while studying for those with positive income	$4,349	$4,379	$4,421	$4,333	$4,095	$4,031	$4,180	$4,375	$4,233	$4,379
Numbers of entrants still enrolled any time in months 9-12	9,423	9,750	9,567	11,004	11,436	10,662	10,776	10,476	10,941	.m

Notes: This table shows the behaviour of all students entering postgraduate qualifications affected by the 2013 removal of student allowances for postgraduate study (Panel A). All borrowing variables relate to the calendar year in which the student entered the qualification; wage income relates to those months within 12 months of entering the qualification in which the student was enrolled in courses for the qualification. All monetary values are real 2014 values. Years end in October. Student counts are randomly rounded to base 3 for confidentiality reasons.

Appendix Table 7: Student loan borrowing, wage earnings, and drop-out rates of postgraduate entrants

Panel B: Students entering Honours										
Total number of entrants	4,122	3,942	4,257	6,000	5,058	4,701	4,629	5,370	5,157	4,929
Number of entrants who borrowed for living costs	1,965	1,968	2,073	3,135	2,562	2,487	2,406	2,850	2,868	2,778
Average living costs borrowed in the calendar year by those who borrowed for living costs	$5,331	$5,069	$5,040	$4,923	$4,820	$4,612	$4,706	$4,730	$4,699	$4,890
Number of entrants who borrowed for fees	3,135	3,078	3,363	4,935	4,233	3,900	3,888	4,398	4,323	4,110
Average fees borrowed in the calendar year among those whose borrowed for fees	$5,668	$5,987	$6,090	$6,074	$6,662	$6,862	$7,134	$7,367	$7,508	$7,846
Number of entrants with any wage income in their first year of postgraduate study	3,303	3,051	3,249	4,380	3,603	3,360	3,171	3,813	3,612	3,492
Average monthly wage earnings while studying for those with positive income	$877	$894	$909	$799	$751	$710	$757	$770	$713	$725
Numbers of entrants still enrolled any time in months 9-12	3,804	3,606	3,903	5,532	4,686	4,344	4,266	4,962	4,809	.m

Notes: This table shows the behaviour of all students entering postgraduate qualifications affected by the 2013 removal of student allowances for Honours (Panel B). All borrowing variables relate to the calendar year in which the student entered the qualification; wage income relates to those months within 12 months of entering the qualification in which the student was enrolled in courses for the qualification. All monetary values are real 2014 values. Years end in October. Student counts are randomly rounded to base 3 for confidentiality reasons.

Appendix Table 8: Relationship between borrowing for fees and student allowance receipt, 2006-10 postgraduate entrants

Dependent variable:	**Entrants to affected postgraduate qualifications**			**Entrants to Honours**		
	Allowance in first 6 months ($000)	Allowance in first 12 months ($000)	Monthly allowance in months enrolled ($)	Allowance in first 6 months ($000)	Allowance in first 12 months ($000)	Monthly allowance in months enrolled ($)
Borrowed for fees indicator	0.527***	0.853***	95.379***	0.229*	0.331	48.740**
	(0.031)	(0.060)	(5.333)	(0.130)	(0.230)	(20.643)
Value of fees borrowed ($000)	0.099***	0.202***	17.320***	0.103***	0.182***	15.707***
	(0.005)	(0.010)	(0.866)	(0.021)	(0.037)	(3.305)
R-Squared	0.132	0.139	0.139	0.034	0.034	0.032
Observations	66,027	66,027	66,027	23,379	23,379	23,379

Notes: This table presents the results of 6 regression specifications of a measure of allowance receipt during postgraduate study on student loan borrowing for compulsory course fees in the calendar year in which the student entered the postgraduate qualification. The sample is limited to students entering postgraduate qualifications affected by the 2013 removal of student allowances for postgraduate study (first three columns) or students entering Honours (second three columns) in 2006 to 2010. Observation counts are randomly rounded to base 3 for confidentiality reasons.

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