THE EFFECTS OF PARENTAL ENCOURAGEMENT AND FUNDING ON POST-SECONDARY PERSISTENCE

by

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Abstract

I use Statistics Canada's Youth in Transition Survey-Cohort B to analyze the effects of parental encouragement and parental funding on post-secondary persistence with semi-parametric survival analysis methods. I find that students are less likely to leave post-secondary education and more likely to reenroll if their parents think post-secondary education is important. I do not find any positive effects from students' parents discussing future career or educational options with them during high school. Students with parents who frequently discussed future options are more likely to leave post-secondary education. Parental funding reduces the probability students will leave post-secondary education, but it does not affect switching programs or reenrolling.

Acknowledgements

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I. Introduction

Post-secondary graduation, not just attendance, is important from an individual and possibly social perspective. Thirty percent of the returns from an undergraduate degree in Canada are from credentials. This effect could be caused by graduation signaling higher productivity, but it could also arise from increased productivity if post-secondary requirements are complementary (Ferrer & Riddell, 2002). In the former case, post-secondary graduation is important for individuals because it increases earnings. In the latter case, post-secondary graduation is also important from a social perspective because it increases productivity. In either case, individuals benefit by completing their programs. So post-secondary graduation, not just attending post-secondary education, is important.

Although completing their program is arguably the objective when students enroll in post-secondary education, significant numbers of students switch programs or leave post-secondary education before graduating. From Statistics Canada's Youth in Transition Survey – Cohort B (YITS-B), 12.6 percent of university students and 10.9 percent of college students switch from their first post-secondary program to another program. In addition, 12.8 percent of university students and 15 percent of college students leave their first post-secondary program and do not enroll in another post-secondary program within a year. Out of these students, 39.9 percent of university leavers and 32.8 percent of college leavers reenroll in post-secondary education during the survey. These switching, leaving and reenrollment rates indicate that a significant number of students do not complete their first post-secondary program, but continue in post-secondary education.

Graduating from post-secondary education is important and many students do not graduate from their first program, but the dynamics of post-secondary persistence are not well understood. Previous studies show that family background (either parental education or family income) is a significant determinant of post-secondary persistence. If family background inherently affects persistence, then this does not offer any policy prescriptions. However, if parental encouragement or parental funding affects persistence, then there are policies that can possibly substitute or encourage these factors. I focus on how parental encouragement and parental funding affect post-secondary persistence. To my knowledge, the effects of parental encouragement or funding have not been analyzed in the post-secondary persistence literature.

I use YITS-B to analyze switching programs, leaving post-secondary education, and reenrolling with survival analysis. This longitudinal survey is ideal for studying post-secondary persistence because it follows students instead of following students at a particular institution. It is also includes data on parental encouragement during high school and includes whether non-repayable money from parents/family is the main source of funding for post-secondary education. The first measure of parental encouragement is how important their parents think it is for them to get a post-secondary education.[1] The second measure is how frequently their parents discussed future career and educational options with them during high school.

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[1] More specifically, this is how important the students perceive their parents think it is. In YITS-B, the parents are not interviewed.

There are some positive results from students thinking their parents value them getting a post-secondary education. The importance of post-secondary education does not affect the probability students switch programs. College students are less likely to leave if their parents think post-secondary education is fairly important (versus not important). But there is no difference in college leaving between parents thinking post-secondary education is fairly important and very important. The importance of post-secondary education does not affect university leaving. Both college and university leavers are more likely to reenroll if their parents think post-secondary education is very important (versus fairly important). These results are not capturing monetary support from parents because the results remain significant when parent funding is controlled for. These results indicate that it could be worthwhile for high schools to convey the benefits of post-secondary education to students and parents.

I do not find that parents discussing future options more frequently positively affects post-secondary persistence. This is surprising, since it may be expected that students who discussed future options with their parents during high school have a better idea of what they wanted to do, making them less likely to switch programs or leave post-secondary education. If students' parents discussed future career or educational options with them, this does not affect switching programs or reenrolling. However, it does affect leaving college and university. Students with parents who discussed future options at least a few times a week during high school are more likely to leave college and university than their counterparts with parents who discussed it a few times each month. Students with parents who discussed it less than a few times each month during high school are not more likely to leave college or university. These results indicate that there are no positive effects on

post-secondary persistence from parents discussing future career or educational options with their children. These results may be driven by a selection effect: parents may discuss future options more frequently if their child is unmotivated.

I find that parental funding does not affect switching programs, leaving university, or reenrolling, but it does affect college leaving. If students' main source of funding is non-repayable money from parents or family, they are less likely to leave college. This result indicates that policies to encourage parents to save for their children's education may increase the graduation rate for college students. It is also an example of a more general result: college leaving is more sensitive to factors than university leaving.

In the following section, I provide an overview and critique of two studies analyzing post-secondary dynamics. In section III, I present the data, survival analysis methods, and model setup. I present the results in section IV, and conclude in section V.

II. Existing Literature on Post-Secondary Persistence

DesJardins et al. (2006) use longitudinal data to analyze interrupted enrollment, reenrollment, and graduation. Their model has three states: enrollment, interrupted enrollment, and graduation. Students transition from enrollment to either interrupted enrollment or graduation, so the enrollment state has competing risks. From interrupted enrollment, students can only transition to enrollment, so the interrupted enrollment state has a single risk. Analysis time is the number of academic *terms* spent in a state. The authors estimate the effects of (possibly) time-varying regressors and the student's enrollment history on the probability of a student transitioning to another state with

maximum likelihood estimation. The authors identify factors that affect the probability of interrupting enrollment and the probability of graduating during students' first enrollment spell using a competing risks model. Female students and students with higher entrance exam scores have higher probabilities of interrupting enrollment. Asian students, students with higher secondary or post-secondary grades, students from middle or high-income families, and students with financial aid (scholarship, grant, or loan) have lower probabilities of interrupting enrollment. The authors include indicator variables for Asian, Black, and other visible minorities (including Aboriginal and Latino). If family income, secondary grades, and age at enrollment are controlled for, the only significant race effect is that Asian students are less likely to interrupt enrollment. Using a single risk model, the authors identify factors that affect the probability of reenrolling during students' first spell of interrupted enrollment. Students from middle and high-income families, students with higher entrance exam scores, students with higher post-secondary grades, and students with longer initial enrollment spells are more likely to reenroll (lagged duration dependence). The authors find that each additional (academic) year before interrupting enrollment increases the probability of reenrollment by approximately ten percent.

DesJardins et al. (2006) base their analysis on records from the University of Minnesota. This data includes students' enrollment at a single university and does not identify if students transfer to another post-secondary school, so students switching schools are classified as dropouts in this analysis. They identify this limitation and suggest that a significant number of students transfer to private institutions because the graduation rate for students with high entrance exams scores is *lower* than the graduation rate for students

with low entrance exam scores. Although schools may be interested in institutional graduation rates, public policies to increase graduation rates should be based on analyses of overall graduation rates. Therefore, results from longitudinal data following students instead of following students within an individual institution should inform education policy.

Finnie and Qiu (2008) analyze switching programs, leaving post-secondary education, and reenrolling with data from the first four cycles of Statistics Canada's Youth in Transition Survey – Cohort B (YITS-B). The major advantage of this analysis compared to DesJardins et al. (2006) is that the authors are able to distinguish between students who switch to another institution from students who leave post-secondary education. Therefore, the authors analyze persistence in post-secondary education instead of persistence at a particular institution.

The authors include students who began their first post-secondary program in August or September. For each subsequent year, the authors classify students as continuers, switchers, or leavers based on their enrollment status in September. This classification rule may be seen as being arbitrary because the authors treat spells of interrupted enrollment differently depending on when it takes place. For example, the authors would classify a student who takes a fall semester (September to December) off as a leaver because the student is not enrolled in September. However, they would classify a student who takes a winter semester (January to April) off as a continuer or switcher because the student is enrolled in September and enrolled in a program the following September.

Finnie and Qiu (2008) analyze college and university persistence separately. The college group includes trade students, CEGEP students, and university transfer students. They justify this treatment of university transfer students by arguing that university transfer students and their post-secondary experiences are different than university students. Although students' experiences in university transfer programs and university programs may be very different, in some regions university transfer students are potentially comparable to university students. For example, university transfer programs are often perceived as less expensive routes to earning a bachelors degree in British Columbia. More importantly, attending a university transfer program in CEGEP is the normal progression to university in Quebec. Therefore, including university transfer students with the college group is a potential limitation of this analysis.

The authors analyze switching and leaving with a multinomial logit model, and right-hand censor students when they graduate. They estimate five regression models. The first model includes the unemployment rate, gender, visible minority status, immigrant status, year of enrollment, age at enrollment, region of post-secondary institution, family type, and parental education. The second model adds financial aid, the third adds high school results, the fourth adds first year post-secondary GPA, and the fifth adds first year post-secondary experiences. They find that the unemployment rate has no significant effect on college or university students switching or leaving. When the authors add financial aid variables to the first model, they find that a scholarship reduces the probability a student will leave college or university. But once they add high school and first year grades, a scholarship has no significant effect on college or university leaving.

The authors suggest the scholarship variable captures ability or commitment, not a direct effect.

Finnie and Qiu (2008) model post-secondary reenrollment with a logit model. The dependent variable is whether the student reenrolls that year; the independent variables are the unemployment rate, gender, visible minority status, immigrant status, year of interrupted enrollment, age at enrollment, region of post-secondary institution, family type, and parental education. They find that the unemployment rate has no significant effect on reenrollment for college or university leavers. The authors do not consider how the initial length of enrollment affects the probability of reenrollment (lagged duration dependence), although DesJardins et al. (2006) find it is significant.

Including parent funding and measures of parental encouragement is an original addition to the post-secondary persistence literature because I am not aware of any analyses that consider these factors. In addition, I modify Finnie and Qiu's (2008) analysis in three significant ways. First, I use a monthly setup to pick up the effect of the unemployment rate and to address their arbitrary classification rule for leaving. Second, I have alternative definitions for college and university students that recognize that university transfer students intend to progress to university programs. Third, I consider the initial enrollment duration when I analyze reenrollment because DesJardins et al. (2006) find lagged duration dependence is significant.

III. Data and Methodology

I use Statistics Canada's Youth in Transition Survey-Cohort B (YITS-B). This is a national longitudinal survey that is specifically designed to analyze transitions between education, training, and work. It includes 22,378 Canadian youth who were 18 to 20 years old on December 31, 1999. Initially, they interview these youth in Spring 2000. Subsequently, they conduct interviews every two years to obtain additional enrollment data. They do not add respondents to the initial sample from cycle 1, and they do not interview non-respondents in subsequent cycles. There are currently five cycles of the YITS-B, so it includes enrollment data until December 2007, when the cohort is 26 to 28 years old.

I compile data from the five cycles of YITS-B to obtain the students' enrollment histories. For each student, I have a series of enrollment and leaving/graduating events, along with the month (and year) of the event. To distinguish between leaving post-secondary education and switching programs, I redefine leaving as switching if the student reenrolls in post-secondary education within 12 months.

I analyze both the first spell of enrollment and the first spell of interrupted enrollment with semi-parametric survival analysis methods. Semi-parametric methods leave the hazard rate unspecified and allow the explanatory variables to shift the baseline hazard rate proportionally. After enrolling in their first post-secondary program, students either leave post-secondary education, switch programs, or graduate from their initial program without interruption. Each of these events prevents the other event from taking place; therefore the first enrollment spell has competing-risks. I use Fine and Gray's (1999)

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method to analyze these competing-risks. After leaving post-secondary education, students reenroll or remain in the interrupted enrollment spell; so the interrupted enrollment spell has a single risk. I use the Cox proportional hazard model to analyze this single risk. Analysis time for the enrollment spell is months in the program, and analysis time for the interrupted enrollment spell is months since leaving their first program. If for example, the estimated hazard ratio for females is 1.2, then females are 1.2 times as likely as the baseline hazard (males) to transition during each month.

I analyze college and university students separately, and categorize them based on the level of their first post-secondary program. For example, if a student enrolls in university and then switches to college, I include them in the university enrollment analysis. If a student enrolls in college, leaves post-secondary education and then enrolls in university, I include their initial enrollment spell in the college enrollment analysis and their interrupted enrollment spell in the college reenrollment analysis. I use two definitions for college and university. The first definition is identical to Finnie and Qiu's (2008) classification[2]. It defines university transfer students as college students, which causes two potential problems. Firstly, I argue that university transfer students should not necessarily be grouped with college students. Secondly, when university transfer students enroll in their program, they presumably intend to progress to a university program.

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[2] Undergraduate post-secondary programs fall into one of eight categories in YITS-B. Finnie and Qiu's (2008) definitions for college and university are as follows. College: 02 Attestation of Vocational Specialization (AVS or ASP), 03 Private Business School or Training Institute Diploma or Certificate, 04 Registered Apprenticeship program, 05 College or CEGEP program, 06 University transfer program at a college or CEGEP (for credits, university transfer diploma or Associate's Degree), and 07 College post-diploma or graduate level program (college diploma or higher needed first). University: 08 University diploma or certificate below Bachelor's (undergraduate level), and 09 Bachelor's degree.

Under this assumption, enrolling in a university program *is not* deviating from their intended post-secondary pathway, and completing a university transfer program without subsequently enrolling in university *is* deviating from their intended post-secondary pathway. I am interested in the determinants of deviations or interruptions from students' intended progression through post-secondary education.[3] My alternative definitions for college and university address both of these problems. I include university transfer students with university students, and I assume their intended post-secondary pathway is beginning in a university transfer program and then progressing to a university program. Under this definition, if a university transfer student graduates and then enrolls in university within twelve months or if a university transfer student leaves and then enrolls in university within twelve months, I completely ignore this transition because it is part of their intended post-secondary pathway. For example, if a university transfer student leaves their first post-secondary program, then enrolls in university six months later, and then switches to another university program, I include the time from when the student enrolls in the university transfer program to when they switch university programs in the university enrollment analysis. Also under this definition, if a university transfer student graduates and does not enroll in university within twelve months, I classify this as leaving university because the student is deviating from their intended post-secondary pathway.

Over the five cycles of YITS-B, there are 12,432 non-respondents. Instead of restricting the analysis to those who responded to all five cycles (which is only 56 percent of the

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[3] Arguably, college or university students may enroll in a program with the intention of not completing it. However, I assume that when college and university students enroll in a program they intend to graduate, and when university transfer students enroll in their program they intend to progress to a university program.

initial sample), I include students in the analysis until they do not respond, and then right-hand censor them. This takes advantage of all the available information without assuming anything about students' enrollment status after they attrite from the survey. Because of survey attrition, the probability weights for each cycle are different. However, survival analysis requires constant weights, so I use the first cycle weights for each student.

If students inconsistently report their enrollment status in a post-secondary program, the YITS-B designates it as an ineligible program. This happens when a student reports being enrolled in a program at the end of a cycle, but denies being enrolled in the program at the beginning of the next cycle in the subsequent interview. Presumably, if a student has an ineligible program they either completed the program or left the program near the end of the cycle. Based on this fact, Finnie and Qiu (2008) suggest two treatments for ineligible programs that avoid right-hand censoring all students when they have an ineligible program.[4] However, I do not have access to the variables necessary for these alternative treatments, so I right-hand censor students at the point their program becomes ineligible.

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[4] The two alternative treatments take advantage of a variable that provides additional information about the ineligible program. With this variable, it is possible to identify students who completed their ineligible program, students who left their ineligible program, and students who did not give any additional information about their ineligible program. The first treatment right-hand censors students who did not give additional information and classifies the other students as continuers, switchers or leavers. The second treatment classifies all students by assuming that students who did not provide additional information about their ineligible program actually left the program. Finnie and Qiu compare these treatments to right-hand censoring all students, and argue that the first treatment is best.

At the end of cycle 5, students may still be in their first spell of enrollment or in their first spell of interrupted enrollment. In order to include these students without assuming anything about their future enrollment status, I right-hand censor students at the end of the fifth cycle (January 2008). In summary, I right-hand censor students when they attrite from the survey, when they inconsistently report their enrollment status, and at the end of the fifth cycle of the survey (January 2008). I include students who graduated from high school in a Canadian province and who began their first post-secondary program in a Canadian province when they were at least sixteen years old.

I estimate four regression models. The first model includes the unemployment rate, gender, immigrant status, visible minority status, aboriginal status, family type, parental education, age at enrollment, region of post-secondary institution, trade status[5], and university transfer status. I control for the seasonally adjusted unemployment rate for the month the student switches, leaves, or reenrolls. I use the unemployment rate for 15 to 24 year olds until the month the student turns 25, and then use the unemployment rate for 25 to 54 year olds (Statistics Canada, 2010). For switching and reenrolling, I use the provincial unemployment rate from the location of the student's second program. For leaving, I use the rate from the location of the student's first program. I categorize students who are Canadian citizens through naturalization as immigrants. Visible minority students and aboriginal students are self-identified. Family type indicates the students' family composition during high school; the categories for family type are two parents (including split custody) and single parent (which includes without parents); the

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[5] Trade students are enrolled in one of the following levels of post-secondary education: Attestation of Vocational Specialization, Private Business School or Training Institute Diploma or Certificate, and Registered Apprenticeship.

benchmark group is two parents. Parental education is the highest level of education obtained by the students' biological or adoptive parents; the categories for parental education are less than high school, high school graduate (benchmark group), college graduate, and university graduate. The categories for age at enrollment are less than 18 years old, 18 years old, 19 years old (benchmark group), 20 years old, and more than 20 years old.

The second model adds high school GPA and two measures of parental encouragement during high school: importance of post-secondary education and discussing future options. High school grade point average (GPA) is the student's most current GPA before graduating high school. The YITS-B only includes high school GPA in cycle 1 and 2. If a student graduates after cycle 2, I use their high school GPA from cycle 2 unless they did not attend high school in cycle 2, then I use their high school GPA from cycle 1. The categories for high school GPA are less than 60 percent, 60 to 69 percent (benchmark group), 70 to 79 percent, and 80 percent or higher. The importance of post-secondary education is the students' response to "How important is it to your parent(s) or guardian(s) that you get more education after high school?" when they are 18 to 20 years old; the categories are not important, fairly important (benchmark group), and very important.[6] The categories for how often the students' parent(s) or guardian(s) talked to them about future career or educational options during high school are less than once a year, a few times a year, a few times a month (benchmark group), and a few times each week or more.

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[6] I include the following responses in the not important category: slightly important, valid skip, don't know, refused, and not stated.

The third model includes the sources of funding for their first post-secondary program; these sources include scholarships, grants, government student loans, and parent funding. In each case, it indicates the student received the specific type of funding during the cycle they began their first post-secondary program, it does not indicate the funding is for their first program. Parent funding indicates their main source of funding is either non-repayable money from parents/family or is from trust funds, Registered Education Savings Plans or Registered Retirement Savings Plans. The fourth model adds first year post-secondary GPA; the categories for first year GPA are less than 60 percent, 60 to 69 percent (benchmark group), 70 to 79 percent, and 80 percent or higher.

IV. Results

I analyze switching, leaving, and reenrolling with each regression model and with both definitions for college and university. I will discuss the results from the original definition (in which I include university transfer students with college students), and I will comment on any significant differences in the results from the original definition and alternative definition.

I analyze students switching from their initial post-secondary program with competing risk survival analysis. The first columns of Table 1a and Table 2a present these results for college and university switching. With the first model, I find that the unemployment rate, gender, immigrant status, visible minority status, aboriginal status, and parental education are not significant determinants in switching from college or university programs. Under the alternative definition, college students are more likely to switch

programs when the unemployment rate is higher (see the first column of Table 1b).

College students in vocational programs may be more responsive to the labour market

because their programs are shorter or because their programs are more job specific. In

either case, it appears that college students in vocational programs are more likely to

switch into programs they perceive as providing better job opportunities when the

unemployment rate is higher. College students from single parent families are more

likely to switch programs than college students from two parent families, and family type

does not affect university switching. College students who enroll when they are less than

19 years old are more likely to switch programs than college students who enroll at age

19. Enrolling in university at age 16 or 17 has the opposite effect; these students are

0.647 times as likely to switch programs as university students who enroll at age 19.

Enrolling at other ages does not have a significant effect on college or university

switching. Under the alternative definition, students who enroll in college at age 18 are

not more likely to switch than students who enroll at age 19 (see the first column of Table

1b). Also under the alternative definition, enrolling at a young age does not have a

significant effect on university switching, but students who enroll when they are older

than 20 are less likely to switch than students who enroll when they are 19 years old (see

the first column of Table 2b). College students in Atlantic Canada and university

students in Quebec are *less* likely to switch programs than their counterparts in Ontario.

University students in the Prairies are 1.699 times as likely to switch programs as

university students in Ontario. Under the alternative definition, university students in the

Prairies are not more likely to switch programs and university students in Quebec are

more likely to switch programs than university students in Ontario (see the first column of

Table 2b). So a large number of university transfer students in Quebec switch programs.

This may be because CEGEP is free or because students in Quebec can begin CEGEP a year earlier than other students can begin post-secondary education. Switching college or university programs in British Columbia is not significantly different than Ontario. Trade students are less likely to switch programs than other college students. University transfer status does not affect college switching (under the original definition) or university switching (under the alternative definition as shown in the first column of Table 2b). The results from this specification remain significant and the hazard ratio estimates are similar when I add high school GPA and parental encouragement.

The only impact of high school performance and parental encouragement on switching is that high school GPA affects college switching, as shown in the second columns of Table 1a and Table 2a. College students with a low high school GPA (less than 60 percent) are less likely to switch programs than college students with a 60 to 69 percent GPA. College students with a 70 to 79 percent high school GPA are more likely to switch than students with a 60 to 69 percent GPA. Having a high GPA (above 80 percent) does not affect college switching. Under the alternative definition, a low high school GPA does not affect college switching and a GPA of at least 70 percent increases the probability college students switch programs. When I add funding to this specification, the results remain significant and the hazard ratio estimates are similar.

I find that scholarships are the only type of funding that affect switching; the third columns of Table 1a and Table 2a present these results. University students who receive a scholarship during the cycle they enroll in their first program are 0.686 times as likely to switch as students who do not have a scholarship. Receiving a scholarship does not

affect college switching. When I add first year post-secondary GPA to this specification, university students who receive a scholarship are still less likely to switch programs (see the fourth column of Table 2a). This result suggests scholarships have a direct effect on university switching and are not just capturing ability or motivation.

All post-secondary students who obtain a first year GPA of at least 70 percent are less likely to switch programs than their counterparts who have a first year GPA of 60 to 69 percent as shown in the fourth columns of Table 1a and Table 2a. College students who obtain a GPA between 70 and 79 percent are 0.618 times as likely to switch programs, and college students who obtain a GPA between 80 and 100 percent are 0.298 times as likely to switch programs. Compared to university students who obtain a GPA between 60 and 69 percent, university student who obtain a GPA of 70 to 79 percent are 0.609 times as likely to switch programs and university students who obtain a GPA of 80 to 100 percent are 0.690 times as likely to switch programs. With first year GPA included in the estimate, university students who receive a scholarship are 0.758 times as likely to switch as university students who do not receive a scholarship.

I analyze students leaving their initial post-secondary program with the first regression model. The results for college leaving are in the first column of Table 3a and the results for university leaving are in the first column Table 4a. The unemployment rate does not affect university or college leaving. Aboriginal students and students from single parent families are more likely to leave college. These factors do not affect university leaving. No other disadvantaged groups are more likely to leave their initial post-secondary program. Female students are actually less likely to leave college and university. Visible

minority students are less likely to leave university and just as likely to leave college. Parental education does not affect university leaving, but college students with a parent who completed university are less likely to leave college. Under the alternative definition, university students are less likely to leave if they have a parent who completed university (see the first column of Table 4b). College students who enroll before they are 18 years old are less likely to leave than college students who enroll when they are 19 years old, and university students who enroll when they are older than 20 are 2.913 times as likely to leave as university students who enroll when they are 19. I do not find any regional effects for college leaving, but university students in British Columbia, Atlantic Canada, and the Prairies are all more likely to leave than university students in Ontario. I find trade students are just as likely to leave their program as other college students. University transfer students are more likely to leave post-secondary education. They are 1.380 times as likely to leave their first post-secondary program as other college students. Under the alternative definition, they are 3.093 times as likely to leave as university students (see the first column of Table 4b). When I control for high school GPA and parental encouragement, aboriginal students are no longer more likely to leave college, college students who enroll before they are 18 years old are no longer less likely to leave, university students in Atlantic Canada are no longer more likely to leave university, and female students are no longer less likely to leave university (see the second columns of Table 3a and Table 4a). The other results are consistent.

The second columns of Table 3a and Table 4a present the effects of high school performance on college and university leaving. Students with a high school GPA of at

least 80 percent are less likely to leave post-secondary education than students with a high school GPA between 60 and 69 percent. College students are 0.450 times as likely to leave and university students are 0.509 times as likely to leave. Having a high school GPA below 60 percent or between 70 and 79 percent does not significantly affect college or university leaving.

Parental encouragement during high school has interesting effects on post-secondary leaving; the second columns of Table 3a and Table 4a present these results for college and university. Although college students who feel their parents think post-secondary education is not important are more likely to leave than students whose parents think it is fairly important, parents thinking it is very important does not affect college leaving. The importance of post-secondary education does not affect university leaving. Under the alternative definition, university students are more likely to leave if their parents think post-secondary education is not important, but thinking it is very important does not affect leaving (see the second column of Table 4b). So students may be more likely to leave post-secondary education if their parents think it is not important, but students are not less likely to leave if their parents think it is very important. Even more interesting is the effect of parents discussing future career or educational options with their children. Students whose parents discussed future options a few times each week are *more* likely to leave post-secondary education than students whose parents discussed future options a few times each month. Students whose parents discussed future options a few times a year or less are not more likely to leave post-secondary education.[7] When I control for

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[7] University students whose parents discussed future options a few times each year are more likely to leave than university students whose parents discussed future options a few

funding, the results of high school GPA and parental encouragement remain consistent,

except under the alternative definition students with a high school GPA between 80 and

100 percent are no longer less likely to leave university than students with a high school

GPA between 60 and 69 percent (see the third column of Table 4b).

Different sources of funding affect college and university leaving. The third columns of

Table 3a and Table 4a present the effects of funding on college and university leaving.

University students who receive a scholarship are 0.696 times as likely to leave as

students who do not receive a scholarship during the cycle they enroll. Receiving a

scholarship does not affect college leaving. College students who receive a grant during

the cycle they enroll are 0.695 times as likely to leave, but grants do not affect university

leaving. Receiving government student loans does not affect college or university

leaving. College students are 0.767 times as likely to leave if their main source of

funding during the cycle they enroll is non-repayable money from their parents or family.

Surprisingly, receiving non-repayable money does not affect university leaving.

However, under the alternative definition, university students who receive parental

funding are 0.774 times as likely to leave university (see the third column of Table 4b).

When I add first year GPA to this specification, scholarships become insignificant for

university leaving (see the fourth column of Table 4a), and grants become insignificant

for college leaving with the alternative definition (see the fourth column of Table 3b).

times each month with the original definition of university. I disregard this result because
it is only significant at the ten percent level, and because the results flips from being
significant with this specification to being insignificant when I add funding variables and
then flips to being significant when I add first year GPA.

Like Finnie & Qiu (2008), I find that scholarships capture commitment or ability, and do not directly affect university leaving.

First year post-secondary grades affect college and university leaving very similarly; the fourth column of Table 3a and Table 4a present these results. College and university students who have a first year GPA less than 60 percent are more likely to leave than their counterparts who have a GPA between 60 and 69 percent. College students with a low GPA are 1.428 times as likely to leave, and university students with a low GPA are 1.376 times as likely to leave (although the university result is only significant at the ten percent level). Both college and university students who earn a first year GPA of at least 70 percent are less likely to leave post-secondary education than their counterparts who earn a first year GPA between 60 and 69 percent. When I control for first year GPA, the importance of post-secondary education significantly affects college leaving. College students with parents who think post-secondary education is very important are 0.787 times as likely to leave as students with parents who think it is fairly important.

I analyze students reenrolling after leaving post-secondary education for the first time; the first columns of Table 5a and Table 6a show these results. The unemployment rate does not affect university reenrollment, but it does affect college reenrollment. A one percent increase in the unemployment rate makes college students 1.039 times as likely to reenroll; this result is significant at the ten percent level. Under the alternative definition of college, a one percent increase in the unemployment rate makes college students 1.049 times as likely to reenroll; this result is significant at the 5 percent level. Removing university transfer students from the college group increases the significance of the

unemployment rate and increases the estimated effect. So vocational college students are more responsive to the unemployment rate than university transfer students (and university students). Female students are more likely to reenroll than their male counterparts. I do not find that visible minority status, immigrant status, aboriginal status, or family type has a significant effect on post-secondary reenrollment. Both college and university students with a parent who completed university are more likely to reenroll than their counterparts whose highest parental education is high school; these effects are not significant when I include high school variables in the second specification (see the second columns of Table 5a and Table 6a) and are not significant under the alternative definitions (see the first columns of Table 5b and Table 6b). Having college as their highest parental education level does not affect college or university reenrollment. College students whose highest parental education is less than high school are 0.674 times as likely to reenroll than college students whose highest parental education level is high school, but this effect is not significant under the alternative specification (see the first column of Table 5b). Having a parental education level less than high school does not affect university leaving. Students' age at enrollment affects both university and college reenrollment. University leavers are more likely to reenroll when they are less than 19 years old than when they are 19 years old. College leavers are more likely to reenroll when they are 16 or 17 years old than when they are 19 years old; this effect is not significant under the alternative specification nor when I control for high school performance and parental encouragement (see the first column of Table 5b and the second column of Table 5a). University leavers are just as likely to reenroll when they are older than 19 as when they are 19 years old. College leavers who are older than 20 are 0.566 times as likely to reenroll as college leavers who are 19 years old; this result is consistent

and significant across all specifications. The only significant regional effect is that

university students are 0.454 times as likely to reenroll in British Columbia as in Ontario.[8]

Trade students are less likely to reenroll than other college students. University transfer

status does not affect college reenrollment, or university reenrollment under the

alternative definition (see the first column of Table 6b).

I find students' initial enrollment duration affects reenrollment for university students, but

not for college students[9] as the first columns of Table 5a and Table 6a show. Each

additional month of initial enrollment makes university students 0.974 times as likely to

reenroll in post-secondary education. So university students with longer initial

enrollment spells are *less* likely to reenroll. This result is consistent across all four

specifications and is significant at the one percent level. DesJardins et al. (2006) find that

university student with longer initial enrollment spells are *more* likely to reenroll at the

same institution. So I find the opposite effect of lagged duration dependence. The

opposite effects of initial enrollment duration may be driven by the fact that DesJardins et

al. (2006) are analyzing reenrollment at the same institution and I am analyzing

reenrollment in post-secondary education. For example, if students' credits from their

initial enrollment spell count towards the programs they reenroll in and if students with

longer initial enrollment spells have completed more credits, then students with longer

initial enrollment spells would have smaller monetary and time costs to complete a

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[8] Under the alternative definition, university students are less likely to reenroll in Atlantic
Canada than in Ontario, but this result is only significant at the ten percent level and it is
not significant in the other specifications.
[9] When I include high school GPA, parental encouragement, funding, and post-secondary
GPA, the initial enrollment duration is significant at the ten percent level for the original
definition of college. I disregard this result because of the significance level.

program. It is intuitive that students are more likely to reenroll if the cost of completing

the program is smaller. If students cannot apply credits from their initial enrollment

period to their new program, then a longer initial enrollment spell does not decrease the

costs of completing the new program. Since DesJardins et al. (2006) include students

enrolling at the same institution, it is more likely that their previous credits count when

they reenroll. This could explain DesJardins et al. (2006) finding that the initial

enrollment duration positively affects reenrollment and finding an insignificant result in

this analysis, but this does not explain why I find the initial enrollment duration

negatively affects reenrollment. Why are university students with longer initial

enrollment durations less likely to reenroll? It may be because these students have

depleted their savings or other sources of funding for post-secondary education. Or it

may be because university leavers with longer initial enrollment spells earn more so their

opportunity cost of reenrolling is higher.

High school GPA does not affect post-secondary reenrollment.[10] However, parental

encouragement during high school affects reenrollment. The second columns of Table 5a

and Table 6a present these results. If students think their parents value post-secondary

education when they are 18 to 20 years old, they are more likely to reenroll. College

students with parents who think post-secondary education is very important are 1.445

times as likely to reenroll as college students with parents who think post-secondary

education is fairly important. Similarly, university students are 1.419 times as likely to

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[10] College students with a 70 to 79 percent high school GPA are more likely to reenroll
than students with a 60 to 69 percent high school GPA. However, this result is only
significant at the ten percent level, it is not significant when I control for funding, and it is
not significant under the alternative definition.

reenroll if their parents think post-secondary education is very important. Even when I control for post-secondary funding and first year performance, students are more likely to reenroll if their parents think post-secondary education is important. How often students' parents discussed future career or educational options with them during high school does not affect college or university reenrollment.

The only source of funding that affects reenrollment is scholarships, as the third columns of Table 5a and Table 6a present. College leavers are more likely to reenroll if they receive a scholarship for their second program. This result is not significant under the alternative definition, when I exclude university transfer students from the group (see the third column of Table 5b). Scholarships do not affect reenrollment for university leavers. Grants, government student loans, nor parental funding entice college or university leavers back to post-secondary education. These results are consistent when I include first year post-secondary results in the analysis.

First year GPA does not affect college reenrollment (see the fourth column of Table 5a). University students with low first year GPAs are less likely to reenroll (see the fourth column of Table 6a). University students with a first year GPA of less than 60 percent are 0.647 times as likely to reenroll as university students with a first year GPA between 60 and 69 percent. High first year GPAs do not affect reenrollment for university students. When I control for first year performance, aboriginal students who leave university are 1.848 times as likely to reenroll than other students who leave university.

V. Conclusion

Currently, public policy focuses on post-secondary access and increasing participation by under-represented groups, such as Aboriginals and rural residents (Kirby, 2007). Policies should focus on program completion in addition to access to be most effective. To design public policies addressing post-secondary completion, the dynamics of post-secondary education must be understood, including switching programs, leaving post-secondary education, and reenrolling in post-secondary education.

I use the same data set as Finnie and Qiu (2008) to analyze the determinants of post-secondary persistence in Canada, but I extend the analysis in four significant ways. First, I use a monthly setup that addresses their arbitrary classification rule and allows me to capture the effect of the unemployment rate. Second, I construct alternative definitions for college and university that identifies that university transfer students intend to progress through post-secondary education by switching to university programs or by graduating and then enrolling in university programs. Third, I include the initial enrollment duration when I analyze reenrollment because DesJardins et al. (2006) find it is significant. Fourth, I consider the effects of parental encouragement and parental funding on post-secondary persistence.

I find mixed effects from the two measures of parental encouragement, and a positive effect from parental funding. If parents think post-secondary education is more important, this has a positive or insignificant effect on each rate. It does not affect the probability of switching or leaving university. It makes students less likely to leave college, and more likely to reenroll if they leave college or university. On the other hand,

if parents discuss future career or educational options more frequently, this has a negative or insignificant effect on each rate. It does not affect switching or reenrolling, but students are more likely to leave college or university if their parents discussed future options with them at least a few times each week. As previously mentioned, this estimate could be capturing a selection effect: parents may choose to discuss future options with their child if they feel he/she will have difficulty progressing through post-secondary education or along a career path. Given that parents may choose to discuss future career options more frequently if their children are unmotivated or uncommitted, it is important to differentiate between the effects of students' characteristics that cause their parents to discuss future options more frequently and the effect of parents discussing future options in further analyses. Identifying the effect of discussing future options on post-secondary persistence requires data to identify students' characteristics that motivate their parents to discuss future options more frequently. Cohort A of the Youth in Transition Survey includes parent interviews that asks whether a lack of interest or motivation will prevent their children from completing the level of education they hope they will complete. This data could differentiate between the effect of parents discussing future options and the effects of students' characteristics that motivate parents to discuss future options more frequently. Parental funding does not affect switching programs, leaving university, or reenrolling, but it decreases the probability that college students will leave. I identify that post-secondary importance and parental funding are significant determinants of post-secondary dynamics.

VI. Tables

Table 1a: Competing-risk regression for college students switching programs (original definition of college students)

Explanatory Variables:	(1)	(2)	(3)	(4)
	Hazard Ratios:			
Unemployment Rate	1.029	1.030	1.030	1.021
	(0.0249)	(0.0251)	(0.0250)	(0.0244)
Female	1.009	1.025	1.021	1.089
	(0.107)	(0.109)	(0.109)	(0.116)
Immigrant	1.012	0.989	0.987	0.964
	(0.275)	(0.271)	(0.269)	(0.268)
Visible Minority	1.002	1.009	1.009	0.974
	(0.220)	(0.220)	(0.220)	(0.216)
Aboriginal	0.789	0.766	0.772	0.703
	(0.309)	(0.304)	(0.308)	(0.281)
Single Parent	1.330**	1.319**	1.319**	1.274*
	(0.173)	(0.175)	(0.176)	(0.172)
PE: less than high school	0.756	0.757	0.757	0.742
	(0.140)	(0.141)	(0.142)	(0.143)
PE: college graduate	1.076	1.073	1.074	1.047
	(0.148)	(0.149)	(0.149)	(0.144)
PE: university graduate	1.098	1.116	1.117	1.136
	(0.153)	(0.158)	(0.164)	(0.162)
Less than 18 years old	1.745**	1.737**	1.729**	1.681**
	(0.393)	(0.395)	(0.392)	(0.362)
18 years old	1.386*	1.367*	1.362*	1.330*
	(0.234)	(0.231)	(0.230)	(0.221)
20 years old	0.659	0.659	0.662	0.702
	(0.213)	(0.213)	(0.214)	(0.230)
More than 20 years old	0.660	0.692	0.700	0.796
	(0.192)	(0.201)	(0.203)	(0.234)
Atlantic	0.498**	0.502**	0.505**	0.564*
	(0.163)	(0.164)	(0.166)	(0.185)
Quebec	1.293	1.267	1.262	1.251
	(0.266)	(0.263)	(0.264)	(0.257)
Prairies	0.741	0.760	0.755	0.762
	(0.158)	(0.163)	(0.163)	(0.167)
BC	0.778	0.790	0.785	0.769
	(0.194)	(0.197)	(0.195)	(0.193)
Trade	0.236***	0.237***	0.237***	0.287***
	(0.0793)	(0.0796)	(0.0799)	(0.0986)
University transfer	1.095	1.106	1.105	1.053
	(0.163)	(0.166)	(0.167)	(0.154)
HS GPA: <60%		0.366**	0.366**	0.371**
		(0.174)	(0.174)	(0.176)
HS GPA: 70-79%		1.385*	1.380*	1.512**
		(0.250)	(0.249)	(0.265)
HS GPA: 80-100%		1.181	1.171	1.673***
		(0.232)	(0.232)	(0.322)
PSE: Not important		1.050	1.055	0.941

		(0.255)	(0.257)	(0.229)
PSE: Very important		1.006	1.005	0.947
		(0.126)	(0.126)	(0.116)
Future options: less than once a year		0.795	0.797	0.776
		(0.178)	(0.179)	(0.175)
Future options: a few times a year		1.182	1.188	1.161
		(0.169)	(0.167)	(0.158)
Future options: a few times each week		1.090	1.094	1.066
		(0.131)	(0.131)	(0.127)
Scholarship			1.048	1.098
			(0.147)	(0.159)
Grant			0.964	1.063
			(0.196)	(0.218)
Government student loan			1.025	1.056
			(0.121)	(0.128)
Parent funding			1.039	1.070
			(0.125)	(0.126)
FPS GPA: <60%				1.201
				(0.199)
FPS GPA: 70-79%				0.618***
				(0.0795)
FPS GPA: 80-100%				0.298***
				(0.0464)
Observations	7777	7777	7777	7777
Number of failures:	844	844	844	844

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The original definition of college students includes university transfer students. This analysis only includes students enrolled in their first post-secondary program. The competing-risks are leaving post-secondary education and graduating from their first program. A "failure" is switching programs.

Table 1b: Competing-risk regression for college students switching programs (alternative definition of college students)

Explanatory Variables:	(1)	(2)	(3)	(4)
		Hazard	Ratio:	
Unemployment Rate	1.058**	1.060**	1.061**	1.050*
	(0.0287)	(0.0290)	(0.0287)	(0.0280)
Female	1.044	1.050	1.052	1.115
	(0.125)	(0.125)	(0.126)	(0.132)
Immigrant	0.869	0.844	0.847	0.820
	(0.272)	(0.266)	(0.266)	(0.261)
Visible Minority	0.729	0.704	0.704	0.615
	(0.310)	(0.303)	(0.304)	(0.267)
Aboriginal	1.104	1.131	1.132	1.124
	(0.281)	(0.288)	(0.288)	(0.291)
Single Parent	1.325*	1.312*	1.319*	1.273
	(0.193)	(0.194)	(0.197)	(0.190)
PE: less than high school	0.769	0.767	0.771	0.748
	(0.154)	(0.155)	(0.157)	(0.158)
PE: college graduate	1.099	1.099	1.100	1.069
	(0.166)	(0.167)	(0.167)	(0.162)
PE: university graduate	1.029	1.034	1.024	1.038
	(0.162)	(0.165)	(0.169)	(0.169)
Less than 18 years old	1.705**	1.649*	1.632*	1.579*
	(0.430)	(0.421)	(0.416)	(0.381)
18 years old	1.271	1.251	1.243	1.213
	(0.230)	(0.226)	(0.225)	(0.214)
20 years old	0.613	0.616	0.620	0.657
	(0.220)	(0.220)	(0.222)	(0.238)
More than 20 years old	0.632	0.668	0.674	0.766
	(0.195)	(0.205)	(0.206)	(0.237)
Atlantic	0.394**	0.397**	0.402**	0.463**
	(0.147)	(0.147)	(0.149)	(0.171)
Quebec	1.135	1.111	1.093	1.084
	(0.257)	(0.254)	(0.251)	(0.243)
Prairies	0.685	0.712	0.716	0.726
	(0.162)	(0.169)	(0.172)	(0.175)
BC	0.674	0.683	0.688	0.660
	(0.205)	(0.206)	(0.209)	(0.201)
Trade	0.358***	0.359***	0.356***	0.441**
	(0.114)	(0.115)	(0.114)	(0.143)
HS GPA: <60%		0.487	0.484	0.461
		(0.236)	(0.235)	(0.226)
HS GPA: 70-79%		1.715***	1.723***	1.862***
		(0.359)	(0.359)	(0.380)
HS GPA: 80-100%		1.503*	1.512*	2.153***
		(0.339)	(0.345)	(0.478)
PSE: Not important		1.092	1.096	0.977
		(0.283)	(0.285)	(0.255)
PSE: Very important		0.979	0.975	0.920
		(0.135)	(0.135)	(0.124)
Future options: less than once a year		0.750	0.750	0.739

		(0.186)	(0.186)	(0.184)
Future options: a few times a year		1.180	1.179	1.138
		(0.188)	(0.184)	(0.170)
Future options: a few times each week		1.059	1.057	1.042
		(0.143)	(0.143)	(0.140)
Scholarship			1.019	1.070
			(0.162)	(0.174)
Grant			0.881	0.977
			(0.211)	(0.235)
Government student loan			0.969	0.971
			(0.127)	(0.129)
Parent funding			1.034	1.054
			(0.141)	(0.140)
FPS GPA: <60%				1.247
				(0.231)
FPS GPA: 70-79%				0.619***
				(0.0880)
FPS GPA: 80-100%				0.285***
				(0.0491)
Observations	7104	7104	7104	7104
Number of failures:	695	695	695	695

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The alternative definition of college students excludes university transfer students. This analysis only includes students enrolled in their first post-secondary program. The competing-risks are leaving post-secondary education and graduating from their first program. A "failure" is switching programs.

Table 2a: Competing-risk regression for university students switching programs (original definition of university students)

Explanatory Variables:	(1)	(2)	(3)	(4)
	Hazard Ratios:			
Unemployment Rate	1.026	1.027	1.022	1.021
	(0.0205)	(0.0203)	(0.0199)	(0.0199)
Female	1.044	1.037	1.046	1.053
	(0.134)	(0.137)	(0.140)	(0.144)
Immigrant	0.671	0.659	0.669	0.683
	(0.213)	(0.208)	(0.210)	(0.213)
Visible Minority	0.939	0.938	0.917	0.879
	(0.214)	(0.215)	(0.209)	(0.196)
Aboriginal	0.627	0.595	0.575	0.530*
	(0.222)	(0.211)	(0.209)	(0.190)
Single Parent	0.837	0.854	0.873	0.866
	(0.154)	(0.160)	(0.165)	(0.166)
PE: less than high school	1.139	1.151	1.178	1.196
	(0.339)	(0.346)	(0.352)	(0.354)
PE: college graduate	1.057	1.048	1.067	1.076
	(0.203)	(0.199)	(0.201)	(0.202)
PE: university graduate	0.786	0.775	0.787	0.819
	(0.128)	(0.124)	(0.125)	(0.134)
Less than 18 years old	0.647**	0.661*	0.681*	0.671*
	(0.143)	(0.145)	(0.146)	(0.143)
18 years old	1.001	1.009	1.015	0.970
	(0.177)	(0.176)	(0.175)	(0.169)
20 years old	0.695	0.672	0.652	0.668
	(0.183)	(0.178)	(0.175)	(0.180)
More than 20 years old	0.853	0.856	0.793	0.818
	(0.322)	(0.334)	(0.314)	(0.322)
Atlantic	1.378	1.362	1.369	1.344
	(0.325)	(0.316)	(0.316)	(0.313)
Quebec	0.405*	0.414*	0.386*	0.394*
	(0.198)	(0.203)	(0.195)	(0.195)
Prairies	1.699***	1.702***	1.743***	1.699***
	(0.336)	(0.335)	(0.334)	(0.330)
BC	1.155	1.162	1.231	1.243
	(0.271)	(0.269)	(0.277)	(0.279)
HS GPA: <60%		1.034	1.079	1.210
		(0.605)	(0.633)	(0.680)
HS GPA: 70-79%		1.030	1.070	1.154
		(0.264)	(0.275)	(0.300)
HS GPA: 80-100%		0.842	0.991	1.195
		(0.219)	(0.269)	(0.324)
PSE: Not important		0.886	0.886	1.009
		(0.347)	(0.346)	(0.394)
PSE: Very important		1.232	1.198	1.287
		(0.201)	(0.196)	(0.214)
Future options: less than once a year		0.705	0.690	0.640
		(0.284)	(0.279)	(0.261)
Future options: a few times a year		0.877	0.881	0.892

		(0.158)	(0.158)	(0.161)
Future options: a few times each week		0.986	0.979	0.931
		(0.132)	(0.131)	(0.124)
Scholarship			0.686***	0.758*
			(0.0938)	(0.111)
Grant			1.054	1.088
			(0.182)	(0.188)
Government student loan			1.016	0.977
			(0.160)	(0.154)
Parent funding			1.102	1.105
			(0.158)	(0.159)
FPS GPA: <60%				1.549***
				(0.259)
FPS GPA: 70-79%				0.609***
				(0.0974)
FPS GPA: 80-100%				0.690*
				(0.136)
Observations:	4878	4878	4878	4878
Number of failures:	615	615	615	615

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The original definition of university students excludes university transfer students. This analysis only includes students enrolled in their first post-secondary program. The competing-risks are leaving post-secondary education and graduating from their first program. A "failure" is switching programs.

Table 2b: Competing-risk regression for university students switching programs (alternative definition of university students)

Explanatory Variables:	(1) Hazard Ratios:	(2)	(3)	(4)
Unemployment Rate	0.997	0.999	0.994	0.994
	(0.0219)	(0.0216)	(0.0213)	(0.0209)
Female	0.960	0.975	0.988	1.007
	(0.121)	(0.124)	(0.130)	(0.135)
Immigrant	0.658	0.648	0.643	0.664
	(0.217)	(0.214)	(0.212)	(0.218)
Visible Minority	0.623	0.605	0.586	0.540*
	(0.235)	(0.227)	(0.224)	(0.200)
Aboriginal	1.020	1.027	0.999	0.951
	(0.225)	(0.226)	(0.219)	(0.204)
Single Parent	0.765	0.764	0.769	0.743
	(0.133)	(0.137)	(0.139)	(0.136)
PE: less than high school	1.177	1.162	1.169	1.198
	(0.329)	(0.330)	(0.330)	(0.334)
PE: college graduate	1.024	1.027	1.041	1.060
	(0.180)	(0.179)	(0.180)	(0.182)
PE: university graduate	0.749*	0.758*	0.789	0.823
	(0.121)	(0.122)	(0.127)	(0.135)
Less than 18 years old	0.945	0.981	1.001	0.978
	(0.190)	(0.199)	(0.200)	(0.191)
18 years old	1.119	1.136	1.148	1.106
	(0.206)	(0.211)	(0.209)	(0.203)
20 years old	0.677	0.642	0.629*	0.659
	(0.187)	(0.177)	(0.175)	(0.184)
More than 20 years old	0.562*	0.530*	0.485**	0.513*
	(0.184)	(0.177)	(0.165)	(0.175)
Atlantic	1.522*	1.485*	1.468*	1.408
	(0.360)	(0.345)	(0.338)	(0.326)
Quebec	1.799**	1.830**	1.653**	1.684**
	(0.441)	(0.446)	(0.423)	(0.425)
Prairies	1.310	1.272	1.326	1.296
	(0.274)	(0.268)	(0.269)	(0.265)
BC	0.940	0.927	0.997	1.008
	(0.225)	(0.220)	(0.232)	(0.235)
University transfer	1.048	0.968	0.972	1.027
	(0.181)	(0.169)	(0.172)	(0.182)
HS GPA: <60%		0.627	0.645	0.767
		(0.421)	(0.433)	(0.492)
HS GPA: 70-79%		0.755	0.803	0.894
		(0.188)	(0.203)	(0.215)
HS GPA: 80-100%		0.622*	0.749	0.943
		(0.158)	(0.200)	(0.238)
PSE: Not important		0.999	0.968	1.051
		(0.359)	(0.348)	(0.377)
PSE: Very important		1.111	1.086	1.135
		(0.175)	(0.170)	(0.181)
Future options: less than once a year		0.822	0.805	0.769

		(0.290)	(0.281)	(0.271)
Future options: a few times a year		1.016	1.016	1.047
		(0.175)	(0.173)	(0.179)
Future options: a few times each week		1.054	1.056	0.996
		(0.142)	(0.141)	(0.131)
Scholarship			0.664***	0.736**
			(0.0922)	(0.107)
Grant			1.064	1.110
			(0.187)	(0.196)
Government student loan			1.150	1.133
			(0.169)	(0.168)
Parent funding			1.110	1.138
			(0.156)	(0.157)
FPS GPA: <60%				1.600***
				(0.261)
FPS GPA: 70-79%				0.629***
				(0.0956)
FPS GPA: 80-100%				0.622**
				(0.124)
Observations	5246	5246	5246	5246
Number of failures	618	618	618	618

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The alternative definition of university students includes university transfer students; it does not classify the transition from a university transfer program to a university program as switching, and it classifies completing a university transfer program and not enrolling in a university program as leaving. This analysis only includes students enrolled in their first post-secondary pathway. The competing-risks are leaving post-secondary education and graduating from a university program. A "failure" is switching programs.

Table 3a: Competing-risk regression for college students leaving post-secondary education (original definition of college students)

Explanatory Variables:	(1)	(2)	(3)	(4)
		Hazard Ratios:		
Unemployment Rate	0.998	0.999	0.999	0.993
	(0.0256)	(0.0256)	(0.0255)	(0.0248)
Female	0.703***	0.758***	0.777***	0.839*
	(0.0646)	(0.0713)	(0.0733)	(0.0790)
Immigrant	0.986	1.000	0.998	0.931
	(0.265)	(0.270)	(0.265)	(0.229)
Visible Minority	0.929	0.888	0.899	0.931
	(0.171)	(0.169)	(0.171)	(0.172)
Aboriginal	1.671*	1.570	1.537	1.450
	(0.508)	(0.476)	(0.472)	(0.432)
Single Parent	1.548***	1.510***	1.484***	1.349***
	(0.159)	(0.157)	(0.153)	(0.143)
PE: less than high school	0.993	0.974	0.956	0.976
	(0.151)	(0.151)	(0.148)	(0.145)
PE: college graduate	0.867	0.900	0.904	0.932
	(0.106)	(0.111)	(0.112)	(0.116)
PE: university graduate	0.713***	0.779**	0.788**	0.778**
	(0.0838)	(0.0899)	(0.0921)	(0.0941)
Less than 18 years old	0.659**	0.825	0.836	0.759
	(0.117)	(0.145)	(0.148)	(0.131)
18 years old	1.066	1.063	1.073	1.020
	(0.128)	(0.130)	(0.133)	(0.125)
20 years old	0.888	0.812	0.792	0.845
	(0.155)	(0.144)	(0.140)	(0.152)
More than 20 years old	1.047	0.876	0.852	0.971
	(0.171)	(0.158)	(0.154)	(0.175)
Atlantic	1.119	1.061	1.075	1.207
	(0.188)	(0.180)	(0.183)	(0.204)
Quebec	0.958	0.911	0.911	0.916
	(0.159)	(0.145)	(0.144)	(0.141)
Prairies	0.910	0.821	0.864	0.920
	(0.126)	(0.118)	(0.123)	(0.137)
BC	0.729*	0.769	0.808	0.804
	(0.134)	(0.141)	(0.149)	(0.154)
Trade	0.913	0.924	0.889	1.067
	(0.190)	(0.197)	(0.191)	(0.246)
University transfer	1.380*	1.506**	1.550**	1.393*
	(0.244)	(0.259)	(0.267)	(0.256)
HS GPA: <60%		1.730	1.689	1.653
		(0.712)	(0.696)	(0.686)
HS GPA: 70-79%		1.054	1.075	1.191
		(0.128)	(0.129)	(0.144)
HS GPA: 80-100%		0.450***	0.469***	0.661***
		(0.0680)	(0.0714)	(0.102)
PSE: Not important		1.557***	1.548***	1.361**
		(0.239)	(0.240)	(0.210)
PSE: Very important		0.840	0.861	0.787**

		(0.0909)	(0.0931)	(0.0853)
Future options: less than once a year		1.109	1.085	1.021
		(0.203)	(0.199)	(0.198)
Future options: a few times a year		0.942	0.940	0.887
		(0.114)	(0.114)	(0.108)
Future options: a few times each week		1.271**	1.260**	1.235**
		(0.132)	(0.129)	(0.128)
Scholarship			0.843	0.867
			(0.116)	(0.119)
Grant			0.695**	0.754*
			(0.108)	(0.115)
Government student loan			0.937	0.963
			(0.0986)	(0.103)
Parent funding			0.767**	0.777**
			(0.0809)	(0.0849)
FPS GPA: <60%				1.428***
				(0.183)
FPS GPA: 70-79%				0.553***
				(0.0680)
FPS GPA: 80-100%				0.283***
				(0.0399)
Observations	7777	7777	7777	7777
Number of failures:	1166	1166	1166	1166

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The original definition of college students includes university transfer students. This analysis only includes students enrolled in their first post-secondary program. The competing-risks are switching programs and graduating from their first program. A "failure" is leaving post-secondary education.

Table 3b: Competing-risk regression for college students leaving post-secondary education (alternative definition for college students)

Explanatory Variables:	(1)	(2)	(3)	(4)
	Hazard Ratios:			
Unemployment Rate	1.002	1.003	1.000	0.992
	(0.0278)	(0.0278)	(0.0278)	(0.0272)
Female	0.682***	0.732***	0.747***	0.803**
	(0.0659)	(0.0726)	(0.0743)	(0.0793)
Immigrant	1.044	1.071	1.065	0.999
	(0.287)	(0.296)	(0.288)	(0.243)
Visible Minority	1.696*	1.617	1.572	1.483
	(0.531)	(0.504)	(0.497)	(0.456)
Aboriginal	0.910	0.876	0.891	0.936
	(0.181)	(0.180)	(0.183)	(0.186)
Single Parent	1.570***	1.518***	1.485***	1.343***
	(0.169)	(0.166)	(0.161)	(0.151)
PE: less than high school	1.016	1.001	0.986	1.015
	(0.160)	(0.162)	(0.159)	(0.156)
PE: college graduate	0.890	0.933	0.943	0.979
	(0.114)	(0.120)	(0.122)	(0.127)
PE: university graduate	0.733***	0.795*	0.816*	0.822
	(0.0873)	(0.0940)	(0.0972)	(0.0998)
Less than 18 years old	0.675**	0.851	0.872	0.783
	(0.127)	(0.157)	(0.162)	(0.142)
18 years old	1.097	1.104	1.119	1.064
	(0.136)	(0.139)	(0.142)	(0.133)
20 years old	0.870	0.807	0.785	0.852
	(0.155)	(0.149)	(0.144)	(0.158)
More than 20 years old	1.052	0.887	0.855	1.001
	(0.178)	(0.166)	(0.160)	(0.186)
Atlantic	1.124	1.074	1.087	1.258
	(0.196)	(0.192)	(0.195)	(0.221)
Quebec	0.928	0.885	0.891	0.911
	(0.162)	(0.148)	(0.149)	(0.147)
Prairies	0.922	0.833	0.869	0.926
	(0.133)	(0.124)	(0.129)	(0.143)
BC	0.760	0.781	0.832	0.810
	(0.152)	(0.156)	(0.167)	(0.174)
Trade	0.836	0.855	0.823	1.004
	(0.182)	(0.193)	(0.188)	(0.246)
HS GPA: <60%		1.783	1.744	1.649
		(0.735)	(0.721)	(0.695)
HS GPA: 70-79%		1.031	1.052	1.163
		(0.130)	(0.131)	(0.146)
HS GPA: 80-100%		0.444***	0.463***	0.664**
		(0.0699)	(0.0737)	(0.106)
PSE: Not important		1.497**	1.486**	1.323*
		(0.242)	(0.242)	(0.214)
PSE: Very important		0.838	0.861	0.788**
		(0.0951)	(0.0974)	(0.0892)
Future options: less than once a year		1.134	1.117	1.016

		(0.215)	(0.212)	(0.204)
Future options: a few times a year		0.979	0.975	0.901
		(0.123)	(0.123)	(0.113)
Future options: a few times each week		1.236*	1.225*	1.201*
		(0.135)	(0.133)	(0.129)
Scholarship			0.816	0.854
			(0.124)	(0.130)
Grant			0.711**	0.769
			(0.116)	(0.124)
Government student loan			0.993	0.997
			(0.111)	(0.113)
Parent funding			0.758**	0.748**
			(0.0869)	(0.0883)
FPS GPA: <60%				1.347**
				(0.181)
FPS GPA: 70-79%				0.515***
				(0.0673)
FPS GPA: 80-100%				0.242***
				(0.0332)
Observations	7104	7104	7104	7104
Number of failures:	1068	1068	1068	1068

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The alternative definition of college students excludes university transfer students. This analysis only includes students enrolled in their first post-secondary program. The competing-risks are switching programs and graduating from their first program. A "failure" is leaving post-secondary education.

Table 4a: Competing-risk regression for university students leaving post-secondary education (original definition of university students)

Explanatory Variables:	(1)	(2)	(3)	(4)
	Hazard Ratios:			
Unemployment Rate	0.964	0.971	0.966	0.958*
	(0.0218)	(0.0223)	(0.0219)	(0.0223)
Female	0.768**	0.815	0.827	0.837
	(0.102)	(0.106)	(0.109)	(0.110)
Immigrant	1.016	0.994	1.017	1.080
	(0.296)	(0.291)	(0.299)	(0.321)
Visible Minority	0.542**	0.568**	0.552**	0.533**
	(0.131)	(0.137)	(0.135)	(0.131)
Aboriginal	1.781	1.739	1.656	1.615
	(0.665)	(0.679)	(0.626)	(0.570)
Single Parent	1.235	1.158	1.133	1.170
	(0.208)	(0.201)	(0.192)	(0.200)
PE: less than high school	1.171	1.035	1.035	1.020
	(0.319)	(0.282)	(0.284)	(0.294)
PE: college graduate	0.897	0.922	0.939	0.928
	(0.159)	(0.165)	(0.166)	(0.165)
PE: university graduate	0.818	0.883	0.923	0.969
	(0.114)	(0.123)	(0.126)	(0.134)
Less than 18 years old	0.920	1.002	1.057	1.032
	(0.201)	(0.223)	(0.238)	(0.234)
18 years old	0.965	1.004	1.020	0.985
	(0.175)	(0.185)	(0.186)	(0.185)
20 years old	1.172	0.978	0.909	0.956
	(0.270)	(0.231)	(0.214)	(0.217)
More than 20 years old	2.913***	2.305***	2.086***	2.337***
	(0.735)	(0.628)	(0.562)	(0.598)
Atlantic	1.619**	1.448	1.395	1.444*
	(0.373)	(0.331)	(0.314)	(0.321)
Quebec	1.150	1.227	1.176	1.339
	(0.550)	(0.579)	(0.558)	(0.628)
Prairies	1.921***	1.721***	1.719***	1.691***
	(0.355)	(0.319)	(0.314)	(0.310)
BC	1.688**	1.570**	1.645**	1.691**
	(0.360)	(0.336)	(0.359)	(0.370)
HS GPA: <60%		0.745	0.770	0.699
		(0.557)	(0.568)	(0.529)
HS GPA: 70-79%		0.871	0.891	0.874
		(0.186)	(0.194)	(0.180)
HS GPA: 80-100%		0.509***	0.593**	0.670*
		(0.114)	(0.137)	(0.143)
PSE: Not important		1.224	1.223	1.361
		(0.294)	(0.293)	(0.323)
PSE: Very important		0.799	0.808	0.833
		(0.136)	(0.139)	(0.144)
Future options: less than once a year		1.340	1.324	1.255
		(0.353)	(0.347)	(0.338)
Future options: a few times a year		1.376*	1.352	1.368*

		(0.260)	(0.257)	(0.257)
Future options: a few times each week		1.403**	1.389**	1.319*
		(0.202)	(0.199)	(0.188)
Scholarship			0.696**	0.801
			(0.104)	(0.121)
Grant			0.862	0.899
			(0.142)	(0.148)
Government student loan			1.033	0.964
			(0.151)	(0.144)
Parent funding			0.806	0.797
			(0.122)	(0.121)
FPS GPA: <60%				1.376*
				(0.230)
FPS GPA: 70-79%				0.650***
				(0.0991)
FPS GPA: 80-100%				0.442***
				(0.0924)
Observations:	4878	4878	4878	4878
Number of failures:	627	627	627	627

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The original definition of university students excludes university transfer students. This analysis only includes students enrolled in their first post-secondary program. The competing-risks are switching programs and graduating from their first program. A "failure" is leaving post-secondary education.

Table 4b: Competing-risk regression for university students leaving post-secondary education (alternative definition of university students)

Explanatory Variables:	(1) Hazard Ratios:	(2)	(3)	(4)
Unemployment Rate	0.969	0.976	0.976	0.974
	(0.0196)	(0.0199)	(0.0197)	(0.0201)
Female	0.785**	0.827	0.848	0.871
	(0.0927)	(0.0973)	(0.101)	(0.103)
Immigrant	0.962	0.952	0.982	1.026
	(0.275)	(0.273)	(0.283)	(0.298)
Visible Minority	1.552	1.493	1.400	1.327
	(0.540)	(0.544)	(0.494)	(0.452)
Aboriginal	0.621**	0.645**	0.633**	0.613**
	(0.130)	(0.134)	(0.133)	(0.129)
Single Parent	1.295*	1.255	1.236	1.233
	(0.190)	(0.185)	(0.178)	(0.175)
PE: less than high school	1.084	0.989	0.978	0.965
	(0.250)	(0.226)	(0.224)	(0.227)
PE: college graduate	0.810	0.822	0.824	0.821
	(0.130)	(0.132)	(0.132)	(0.134)
PE: university graduate	0.726**	0.780*	0.788*	0.794*
	(0.0965)	(0.103)	(0.103)	(0.106)
Less than 18 years old	0.908	0.960	0.976	0.945
	(0.177)	(0.193)	(0.200)	(0.194)
18 years old	0.929	0.928	0.944	0.915
	(0.156)	(0.158)	(0.159)	(0.157)
20 years old	1.145	0.990	0.915	0.952
	(0.245)	(0.212)	(0.194)	(0.195)
More than 20 years old	3.056***	2.559***	2.393***	2.588***
	(0.713)	(0.632)	(0.589)	(0.618)
Atlantic	1.520*	1.412	1.351	1.337
	(0.331)	(0.305)	(0.287)	(0.284)
Quebec	1.510	1.460	1.316	1.380
	(0.393)	(0.390)	(0.351)	(0.372)
Prairies	1.864***	1.739***	1.753***	1.757***
	(0.331)	(0.311)	(0.307)	(0.307)
BC	1.476*	1.454*	1.486*	1.504**
	(0.302)	(0.296)	(0.306)	(0.310)
University transfer	3.093***	2.812***	2.799***	2.908***
	(0.510)	(0.483)	(0.477)	(0.487)
HS GPA: <60%		0.626	0.627	0.643
		(0.491)	(0.495)	(0.505)
HS GPA: 70-79%		1.017	1.045	1.071
		(0.204)	(0.213)	(0.217)
HS GPA: 80-100%		0.624**	0.699	0.796
		(0.133)	(0.153)	(0.171)
PSE: Not important		1.461*	1.441*	1.482*
		(0.316)	(0.315)	(0.319)
PSE: Very important		0.874	0.874	0.874
		(0.131)	(0.133)	(0.135)
Future options: less than once a year		1.016	1.003	0.991

		(0.246)	(0.244)	(0.245)
Future options: a few times a year		1.201	1.177	1.204
		(0.203)	(0.203)	(0.207)
Future options: a few times each week		1.340**	1.342**	1.290**
		(0.174)	(0.173)	(0.166)
Scholarship			0.739**	0.813
			(0.0994)	(0.111)
Grant			0.800	0.834
			(0.128)	(0.134)
Government student loan			0.908	0.889
			(0.117)	(0.116)
Parent funding			0.774*	0.795*
			(0.102)	(0.104)
FPS GPA: <60%				1.315*
				(0.210)
FPS GPA: 70-79%				0.684***
				(0.0961)
FPS GPA: 80-100%				0.577***
				(0.106)
Observations	5246	5246	5246	5246
Number of failures	733	733	733	733

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The alternative definition of university students includes university transfer students; it classifies completing a university transfer program and not enrolling in a university program as leaving, and it does not classify the transition from a university transfer program to a university program as switching. This analysis only includes students enrolled in their first post-secondary pathway. The competing-risks are switching programs and graduating from a university program. A "failure" is leaving post-secondary education.

Table 5a: Cox regression for college leavers reenrolling in post-secondary education (original definition of college students)

Explanatory Variables:	(1)	(2)	(3)	(4)
	Hazard Ratios:			
Unemployment Rate	1.039*	1.041*	1.043*	1.042*
	(0.0232)	(0.0233)	(0.0233)	(0.0233)
Female	1.433***	1.375***	1.366***	1.348***
	(0.153)	(0.151)	(0.152)	(0.150)
Immigrant	1.340	1.224	1.190	1.176
	(0.518)	(0.479)	(0.478)	(0.474)
Visible Minority	1.039	0.977	0.982	1.000
	(0.292)	(0.275)	(0.272)	(0.283)
Aboriginal	1.139	1.089	1.089	1.122
	(0.341)	(0.334)	(0.335)	(0.347)
Single Parent	1.094	1.101	1.123	1.150
	(0.139)	(0.141)	(0.146)	(0.150)
PE: less than high school	0.674**	0.699*	0.677**	0.666**
	(0.123)	(0.130)	(0.129)	(0.127)
PE: college graduate	1.132	1.092	1.105	1.109
	(0.144)	(0.141)	(0.142)	(0.143)
PE: university graduate	1.308*	1.261	1.240	1.229
	(0.183)	(0.180)	(0.179)	(0.178)
Less than 18 years old	1.312*	1.286	1.286	1.281
	(0.214)	(0.212)	(0.211)	(0.210)
18 years old	0.959	0.966	0.956	0.960
	(0.135)	(0.137)	(0.136)	(0.137)
20 years old	0.824	0.835	0.835	0.827
	(0.186)	(0.191)	(0.193)	(0.191)
More than 20 years old	0.566**	0.591**	0.601*	0.599*
	(0.152)	(0.158)	(0.161)	(0.161)
Atlantic	0.728	0.727	0.761	0.780
	(0.186)	(0.194)	(0.203)	(0.209)
Quebec	0.824	0.849	0.869	0.884
	(0.128)	(0.135)	(0.138)	(0.141)
Prairies	1.176	1.321	1.297	1.336*
	(0.197)	(0.224)	(0.221)	(0.228)
BC	1.365	1.399	1.303	1.329
	(0.291)	(0.299)	(0.279)	(0.286)
Trade	0.702*	0.693*	0.682*	0.680*
	(0.149)	(0.149)	(0.150)	(0.149)
University transfer	1.168	1.111	1.110	1.103
	(0.232)	(0.224)	(0.223)	(0.221)
Initial enrollment duration	0.993	0.991	0.991	0.989*
	(0.00550)	(0.00559)	(0.00578)	(0.00606)
HS GPA: <60%		0.707	0.665	0.689
		(0.329)	(0.314)	(0.326)
HS GPA: 70-79%		1.308*	1.277	1.276
		(0.202)	(0.197)	(0.197)
HS GPA: 80-100%		1.300	1.249	1.249
		(0.230)	(0.223)	(0.227)

PSE: Not important		1.034	1.060	1.061
		(0.199)	(0.206)	(0.207)
PSE: Very important		1.445**	1.485***	1.484***
		(0.211)	(0.220)	(0.219)
Future options: less than once a year		1.021	1.041	1.043
		(0.242)	(0.247)	(0.250)
Future options: a few times a year		0.917	0.910	0.914
		(0.135)	(0.135)	(0.136)
Future options: a few times each week		0.972	0.974	0.977
		(0.119)	(0.121)	(0.121)
Scholarship			1.474**	1.482**
			(0.229)	(0.228)
Grant			0.853	0.856
			(0.188)	(0.187)
Government student loan			0.859	0.859
			(0.108)	(0.108)
Parent funding			0.845	0.841
			(0.111)	(0.111)
FPS GPA: <60%				1.001
				(0.155)
FPS GPA: 70-79%				1.217
				(0.167)
FPS GPA: 80-100%				1.029
				(0.170)
Observations	1166	1166	1166	1166
Number of failures:	383	383	383	383

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The original definition of college students includes university transfer students. This analysis only includes students who left their first post-secondary program. A "failure" is reenrolling in post-secondary education.

Table 5b: Cox regression for college leavers reenrolling in post-secondary education (alternative definition of college students)

Explanatory Variables:	(1)	(2)	(3)	(4)
	Hazard Ratios:			
Unemployment Rate	1.049**	1.053**	1.054**	1.053**
	(0.0254)	(0.0255)	(0.0254)	(0.0256)
Female	1.526***	1.478***	1.474***	1.453***
	(0.176)	(0.176)	(0.179)	(0.177)
Immigrant	1.552	1.430	1.390	1.380
	(0.658)	(0.614)	(0.610)	(0.612)
Visible Minority	1.185	1.120	1.129	1.174
	(0.373)	(0.358)	(0.365)	(0.382)
Aboriginal	0.805	0.745	0.760	0.767
	(0.279)	(0.256)	(0.264)	(0.273)
Single Parent	1.139	1.152	1.169	1.192
	(0.151)	(0.155)	(0.159)	(0.163)
PE: less than high school	0.742	0.772	0.761	0.751
	(0.139)	(0.148)	(0.148)	(0.147)
PE: college graduate	1.127	1.098	1.111	1.114
	(0.154)	(0.152)	(0.154)	(0.155)
PE: university graduate	1.238	1.192	1.177	1.172
	(0.193)	(0.189)	(0.188)	(0.188)
Less than 18 years old	1.184	1.177	1.180	1.175
	(0.204)	(0.205)	(0.205)	(0.204)
18 years old	0.876	0.889	0.888	0.889
	(0.131)	(0.135)	(0.135)	(0.135)
20 years old	0.900	0.906	0.903	0.889
	(0.206)	(0.211)	(0.214)	(0.212)
More than 20 years old	0.572**	0.605*	0.608*	0.602*
	(0.162)	(0.172)	(0.173)	(0.172)
Atlantic	0.688	0.677	0.707	0.720
	(0.189)	(0.197)	(0.206)	(0.211)
Quebec	0.833	0.881	0.889	0.902
	(0.135)	(0.145)	(0.146)	(0.150)
Prairies	1.168	1.330	1.314	1.339
	(0.209)	(0.240)	(0.238)	(0.244)
BC	1.177	1.204	1.186	1.200
	(0.287)	(0.292)	(0.293)	(0.299)
Trade	0.619**	0.618**	0.611**	0.605**
	(0.142)	(0.144)	(0.145)	(0.144)
Initial enrollment duration	0.994	0.992	0.992	0.990
	(0.00588)	(0.00601)	(0.00612)	(0.00642)
HS GPA: <60%		0.704	0.672	0.698
		(0.333)	(0.322)	(0.335)
HS GPA: 70-79%		1.219	1.198	1.195
		(0.196)	(0.194)	(0.193)
HS GPA: 80-100%		1.123	1.101	1.095
		(0.212)	(0.209)	(0.212)
PSE: Not important		1.074	1.097	1.099
		(0.225)	(0.232)	(0.233)
PSE: Very important		1.601***	1.629***	1.625***

		(0.257)	(0.264)	(0.263)
Future options: less than once a year		0.938	0.954	0.957
		(0.235)	(0.241)	(0.244)
Future options: a few times a year		0.853	0.851	0.854
		(0.134)	(0.134)	(0.135)
Future options: a few times each week		0.903	0.911	0.916
		(0.121)	(0.123)	(0.124)
Scholarship			1.306	1.315
			(0.234)	(0.234)
Grant			0.833	0.835
			(0.207)	(0.205)
Government student loan			0.877	0.878
			(0.117)	(0.117)
Parent funding			0.892	0.892
			(0.126)	(0.127)
FPS GPA: <60%				0.981
				(0.164)
FPS GPA: 70-79%				1.196
				(0.178)
FPS GPA: 80-100%				1.073
				(0.191)
Observations	1068	1068	1068	1068
Number of failures:	328	328	328	328

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The alternative definition of college students excludes university transfer students. This analysis only includes students who left their first post-secondary program. A "failure" is reenrolling in post-secondary education.

Table 6a: Cox regression for university leavers reenrolling in post-secondary education (original definition of university students)

Explanatory Variables:	(1)	(2)	(3)	(4)
	Hazard Ratios:			
Unemployment Rate	1.023	1.019	1.021	1.019
	(0.0288)	(0.0288)	(0.0298)	(0.0291)
Female	1.393**	1.370**	1.371**	1.290*
	(0.184)	(0.189)	(0.192)	(0.183)
Immigrant	0.942	0.825	0.835	0.861
	(0.456)	(0.432)	(0.438)	(0.459)
Visible Minority	1.120	1.159	1.152	1.065
	(0.440)	(0.502)	(0.495)	(0.472)
Aboriginal	1.608	1.600	1.570	1.848*
	(0.504)	(0.507)	(0.507)	(0.624)
Single Parent	1.329	1.294	1.286	1.270
	(0.247)	(0.247)	(0.250)	(0.243)
PE: less than high school	1.454	1.445	1.446	1.433
	(0.389)	(0.402)	(0.413)	(0.403)
PE: college graduate	1.154	1.097	1.095	1.081
	(0.202)	(0.199)	(0.202)	(0.200)
PE: university graduate	1.300*	1.229	1.246	1.163
	(0.206)	(0.195)	(0.205)	(0.192)
Less than 18 years old	1.709**	1.712**	1.730**	1.674**
	(0.385)	(0.389)	(0.395)	(0.391)
18 years old	1.388*	1.446**	1.440**	1.447**
	(0.235)	(0.249)	(0.251)	(0.248)
20 years old	0.815	0.899	0.899	0.850
	(0.241)	(0.265)	(0.266)	(0.247)
More than 20 years old	0.774	0.866	0.880	0.827
	(0.264)	(0.296)	(0.302)	(0.294)
Atlantic	0.764	0.755	0.768	0.772
	(0.180)	(0.182)	(0.186)	(0.184)
Quebec	0.417	0.458	0.466	0.416
	(0.313)	(0.358)	(0.364)	(0.321)
Prairies	0.861	0.866	0.863	0.838
	(0.185)	(0.184)	(0.185)	(0.178)
BC	0.454***	0.456***	0.452***	0.416***
	(0.124)	(0.122)	(0.125)	(0.116)
Initial enrollment duration	0.974***	0.974***	0.974***	0.972***
	(0.00551)	(0.00553)	(0.00552)	(0.00567)
HS GPA: <60%		1.470	1.423	1.311
		(0.836)	(0.826)	(0.850)
HS GPA: 70-79%		0.872	0.866	0.834
		(0.204)	(0.202)	(0.195)
HS GPA: 80-100%		0.933	0.901	0.841
		(0.220)	(0.214)	(0.201)
PSE: Not important		0.937	0.934	0.893
		(0.272)	(0.272)	(0.255)
PSE: Very important		1.419**	1.434**	1.394*
		(0.246)	(0.251)	(0.241)
Future options: less than once a year		0.811	0.831	0.777

		(0.270)	(0.278)	(0.259)
Future options: a few times a year		0.749	0.745	0.776
		(0.139)	(0.140)	(0.146)
Future options: a few times each week		0.830	0.831	0.825
		(0.125)	(0.125)	(0.128)
Scholarship			1.120	1.055
			(0.184)	(0.177)
Grant			0.930	0.915
			(0.176)	(0.173)
Government student loan			0.975	0.961
			(0.166)	(0.161)
Parent funding			0.869	0.859
			(0.145)	(0.142)
FPS GPA: <60%				0.647**
				(0.131)
FPS GPA: 70-79%				0.889
				(0.139)
FPS GPA: 80-100%				1.186
				(0.265)
Observations:	627	627	627	627
Number of failures:	250	250	250	250

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The original definition of university students excludes university transfer students. This analysis only includes students who left their first post-secondary program. A "failure" is reenrolling in post-secondary education. A "failure" is reenrolling in post-secondary education.

Table 6b: Cox regression for university leavers reenrolling in post-secondary education (alternative definition of university students)

Explanatory Variables:	(1) Hazard Ratios:	(2)	(3)	(4)
Unemployment Rate	1.015	1.011	1.013	1.013
	(0.0286)	(0.0293)	(0.0299)	(0.0297)
Female	1.244*	1.210	1.230	1.188
	(0.155)	(0.155)	(0.159)	(0.155)
Immigrant	0.895	0.829	0.850	0.877
	(0.396)	(0.387)	(0.403)	(0.411)
Visible Minority	1.944**	2.031**	1.942**	2.223***
	(0.565)	(0.601)	(0.577)	(0.681)
Aboriginal	1.274	1.279	1.272	1.250
	(0.432)	(0.468)	(0.460)	(0.455)
Single Parent	1.139	1.129	1.143	1.141
	(0.206)	(0.205)	(0.210)	(0.208)
PE: less than high school	1.115	1.148	1.132	1.114
	(0.299)	(0.313)	(0.325)	(0.319)
PE: college graduate	1.021	0.962	0.961	0.947
	(0.171)	(0.165)	(0.166)	(0.164)
PE: university graduate	1.263	1.185	1.195	1.155
	(0.190)	(0.181)	(0.186)	(0.181)
Less than 18 years old	2.206***	2.159***	2.218***	2.241***
	(0.451)	(0.446)	(0.459)	(0.469)
18 years old	1.550**	1.579***	1.569**	1.582***
	(0.270)	(0.279)	(0.281)	(0.280)
20 years old	0.865	0.931	0.931	0.899
	(0.253)	(0.273)	(0.273)	(0.260)
More than 20 years old	0.812	0.861	0.875	0.839
	(0.271)	(0.286)	(0.293)	(0.284)
Atlantic	0.660*	0.678	0.712	0.709
	(0.157)	(0.165)	(0.174)	(0.171)
Quebec	0.681	0.706	0.767	0.756
	(0.255)	(0.272)	(0.292)	(0.286)
Prairies	0.745	0.757	0.741	0.728
	(0.158)	(0.161)	(0.156)	(0.153)
BC	0.522**	0.540**	0.532**	0.503***
	(0.133)	(0.138)	(0.138)	(0.130)
University transfer	0.792	0.791	0.760	0.764
	(0.232)	(0.240)	(0.226)	(0.231)
Initial enrollment duration	0.979***	0.979***	0.979***	0.977***
	(0.00528)	(0.00540)	(0.00543)	(0.00554)
HS GPA: <60%		1.708	1.627	1.558
		(0.863)	(0.857)	(0.880)
HS GPA: 70-79%		0.824	0.822	0.782
		(0.183)	(0.184)	(0.177)
HS GPA: 80-100%		1.003	0.946	0.886
		(0.218)	(0.211)	(0.200)
PSE: Not important		1.106	1.114	1.054
		(0.284)	(0.287)	(0.273)
PSE: Very important		1.353*	1.384*	1.343*

		(0.224)	(0.232)	(0.224)
Future options: less than once a year		0.758	0.801	0.770
		(0.244)	(0.256)	(0.249)
Future options: a few times a year		0.875	0.864	0.893
		(0.153)	(0.154)	(0.160)
Future options: a few times each week		0.934	0.925	0.918
		(0.131)	(0.130)	(0.130)
Scholarship			1.232	1.204
			(0.191)	(0.190)
Grant			0.864	0.849
			(0.156)	(0.152)
Government student loan			0.878	0.876
			(0.144)	(0.142)
Parent funding			0.738*	0.730**
			(0.117)	(0.116)
FPS GPA: <60%				0.682**
				(0.132)
FPS GPA: 70-79%				0.898
				(0.133)
FPS GPA: 80-100%				0.914
				(0.188)
Observations	732	732	732	732
Number of failures	277	277	277	277

Notes:
Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The alternative definition of university students includes university transfer students; it classifies completing a university transfer program and not enrolling in a university program as leaving, and it does not classify the transition from a university transfer program to a university program as switching. This analysis only includes students who left their first post-secondary pathway. A "failure" is reenrolling in post-secondary education.

References

Cleves, M., Gould, W., Gutierrez, R., Marchenko, Y. (2008). *An Introduction to Survival Analysis Using Stata* (2nd ed.). College Station, Texas: Stata Press.

DesJardins, S., Ahlburg, D., McCall, B. (2006). The effects of interrupted enrollment on graduation from college: Racial, income, and ability differences. *Economics of Education Review,* 25, 575-590.

Ferrer, A., Riddell, C. (2002). The role of credentials in the Canadian labour market. *Canadian Journal of Economics,* 35(4), 879-905.

Fine, J., Gray, R. (1999). A Proportional Hazards Model for the Subdistribution of a Competing Risk. *Journal of the American Statistical Association, 94,* 496-509.

Finnie, R., Qiu, H. (2008). The Patterns of Persistence in Post-Secondary Education in Canada: Evidence from the YITS-B Dataset. *MESA Project Working Paper.* Retrieved March 13, 2010 from http://www.mesa-project.org/research.php

Kirby, D. (2007). Reviewing Canadian Post-Secondary Education: Post-Secondary Education Policy in Post-Industrial Canada. *Canadian Journal of Educational Administration and Policy,* 65, 1-24.

Statistics Canada. (2010). *Table 282-0087 - Labour force survey estimates (LFS), by sex and age group, seasonally adjusted and unadjusted, monthly*. Retrieved December 26, 2010, from http://estat.statcan.gc.ca/cgi-win/CNSMCGI.EXE