RETURN TO A HIGH SCHOOL DIPLOMA
and the Decision to Drop Out
New Evidence from Canada

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HIGH SCHOOL DROPOUT RATES HAVE HISTORICALLY BEEN HIGHER IN CANADA THAN IN THE UNITED STATES. ALTHOUGH THE GAP BETWEEN THE TWO COUNTRIES HAS BEEN PARTIALLY CLOSED IN RECENT YEARS, THE DROPOUT RATE IN CANADA IS STILL SOMEWHAT HIGHER THAN IN THE U.S., AT LEAST FOR MEN, AND ESPECIALLY SO WHEN WE LIMIT THE COMPARISON TO THE STATES THAT ARE NEIGHBOURING CANADA. TO PERHAPS GAIN SOME INSIGHT AS TO WHY THIS DISCREPANCY IN HIGH SCHOOL DROPOUT RATES HAS EXISTED, IT MAY THEN BE USEFUL TO STUDY THE LABOUR MARKET OUTCOMES OF YOUNG CANADIANS IN RELATION TO THEIR SCHOOLING LEVEL.

It is generally believed that individuals with low levels of schooling will have greater difficulties thriving in today's environment compared to what previous generations of low education individuals experienced, which should have the effect of inducing people to study beyond high school. Yet the evidence shows that a fairly large proportion of the population does not complete high school (the high school non completion rate was estimated at around 18% for Canada in 1991 using Statistics Canada's School Leavers' Survey). It may be that for those individuals who do not plan to go to university after high school, the value of finishing high school hinges on whether doing so brings large enough benefits and if, as the Canadian data show, those benefits appear to have been very low, then we may find ourselves with a situation in which we have both a relatively high dropout rate from high school and a large fraction of young people enrolling and completing university education. In other words, for high school dropouts, the margin at which schooling decisions are made is different from that of people who hesitate between stopping after high school graduation and going to university. If the university to high school wage premium increases while the high school completion to high school non-completion wage premium decreases, then the result may be that those who are hesitating between high school and university will be more likely to enroll in university while the others will be more likely to dropout, given that they heavily discount any potential benefit from a university education.

HIGH SCHOOL NON COMPLETION RATES (CANADA AND THE U.S.)

Figure 1 shows the high school non-completion rate among individuals aged 20-21. Those numbers represent annual averages computed using the basic CPS monthly files and the LFS monthly files. As we can see from the comparison, the difference in 'male' rates at the start of the decade was about 4%, roughly the same as in 1997, while it was smaller for women. Indeed women's dropout rates essentially converged over the nineties while the gap closed somewhat for men. However, once we compare Canada with the neighbouring U.S. states, we can see that even in the case of women there is still a higher fraction of Canadians not completing high school. For men the gap in 1997 was still about 5% compared with roughly 7% at the start of the decade. Naturally, one difficulty in making comparisons of the high school dropout rate in Canada and the United States stems from the fact that while the twelve years of schooling criterion is uniformally applied in the U.S., it is not in Canada. The two largest Canadian provinces, Ontario and Quebec, have until recently required thirteen and eleven years of schooling respectively, while the others require twelve.

Also, individuals in both countries have ways other than the "regular" schooling process to acquire their high school diploma. In the United States individuals can get certification through an equivalency exam such as the General Educational Development (GED) (see Cameron-Heckman, 1993). As argued by Cameron and Heckman, individuals getting GED certification may be closer to dropouts than to "true" high school graduates. Individuals may also achieve certification through night classes. This may consequently inflate the U.S. high school completion rate. In Canada, more or less similar alternative routes of completing the requirement for a high school diploma exist. For example, in Quebec individuals who left high school without a diploma may get their certification through night classes. In Ontario a GED-like certification process is available for people aged at least 18 and who have been out of high school for at least a year. It is difficult to judge the relative difficulty of these different institutional arrangements in terms of getting certification as the requirements are likely to vary across countries.

In summary, it appears that Canada is catching up to the United States in terms of the rate at which young individuals complete high school, especially in the case of women. Yet, there still are differences when we compare the average completion rate across Canadian provinces with that of their immediate neighbours. It should also be noted that while the parents' educational attainment no doubt plays a role, other evidence suggests that it cannot really be the whole story behind the historical differences in dropout rates in Canada and the United States. In a recent paper, Card-Lemieux (1997) show that the fraction of men and women aged 20-24 who are enrolled in school is actually higher in Canada than in the United States, and especially so for women. They also show the reverse is true for individuals aged 16-17.

THE RETURN TO A HIGH SCHOOL DEGREE IN CANADA AND THE UNITED STATES, 1981-1998

In this section, I document the evolution of the return to holding just a high school diploma in both countries using the 1981, 86, 91, and 96 Canadian Censuses, the 1998 Canadian Labour Force Survey (LFS), and the 1981-1998 March Supplements of the Current Population Survey (CPS). Except for the LFS, whose earnings measure refers to the job held at the time of the interview, both the CPS and the Census ask questions on earnings and weeks worked during the previous calendar year. In

addition, the CPS (but not the Canadian Census) asks a question on usual hours worked per week in the previous year.

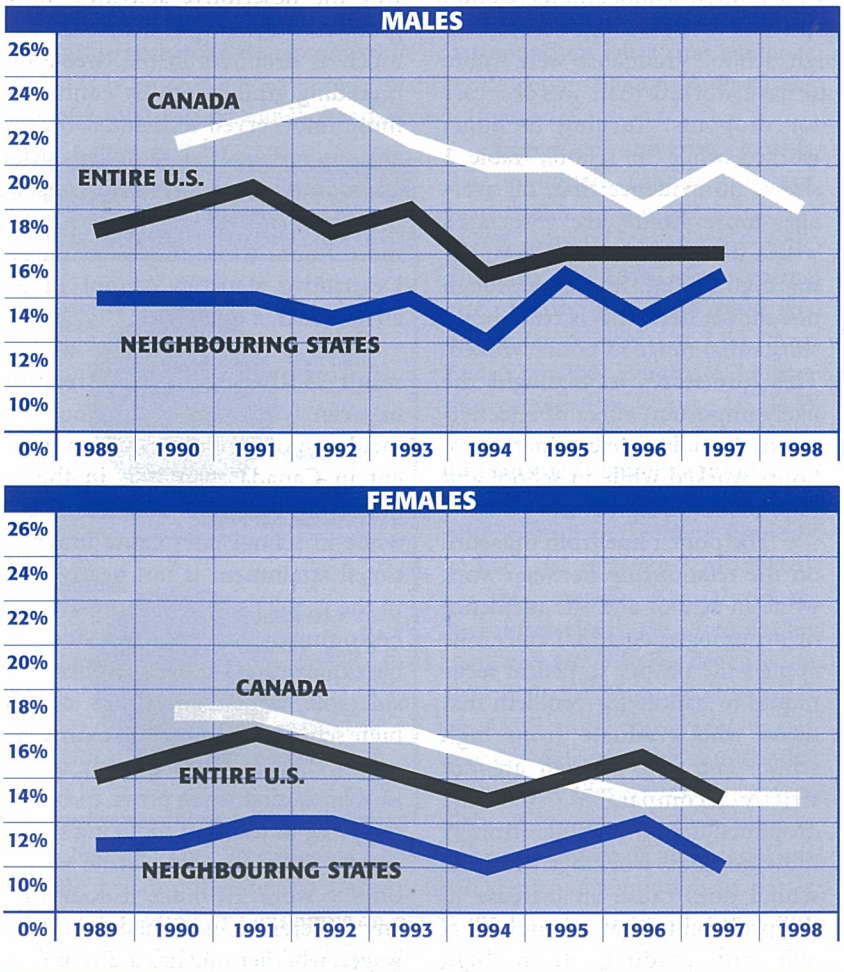
To measure the return to a high school degree, I focus on individuals with a strong degree of labour market attachment. Consequently, I only used individuals who worked full-time for at least 39 weeks the year before the respective surveys. For 1998 I cannot impose quite the same restrictions with the LFS. I use only individuals working full-time at the time of the interview. Note that all self-employed individuals are excluded from the analysis. I also exclude people attending school, when possible.

For 1998 with the LFS, I also exclude the summer months so as not to include summer jobs (the sample restrictions made little difference in the results). The next step was to run a series of regressions by sex and by age group of the log weekly wage on a linear age term and a dummy indicator for high school graduation. Note that all wage observations in the bottom and top percentiles were excluded to eliminate outliers. These figures reveal that while the return to a high school diploma in Canada is very small for the youngest individuals compared to their U.S. counterparts, the return is actually smaller for all age groups. This strongly suggests that whatever factor is causing the wage premium to be smaller in Canada appears to affect all individuals with low levels of education. Indeed, it seems that the difference in the return to a high school diploma is the largest for workers aged 25 and above. As for the youngest individuals, the return is consistently at most half of what it is in the United States. Also, although it has been shown recently that the return to a high school degree in the United States has increased markedly over the last twenty years for workers aged 25 and over (Krueger, 1997), it appears that much of that increase is in fact the result of composition effects. Older workers' return has indeed increased somewhat over that time period but the overall rise in the average return stems from the increasingly important demographic weight of the older workers.

Naturally, such persistent differences beg for an explanation, such as perhaps the ways in which the different institutional arrangements in Canada like the minimum wage and the unionization rate interact with the operation of the labour market for individuals with low levels of education. Perhaps also the fact that Canada has a much higher proportion of individuals with some post-secondary education than in the United States (Riddell-Sweetman, 1999) and that those individuals may be close substitutes to high school graduates in the labour market might depress the wages paid to high school graduates.

Overall, then, there is little in the Canadian data that suggests that the value of holding a high school diploma has increased over time or even that it is substantial. Again, it is worth reiterating that this statement applies to people who do not envision pursuing university education; in fact the "real" value of holding a high school diploma would include the expected added return from higher (university) education. However, it is still the case that high school graduates in 1998 have a larger employment rate compared to high school dropouts, even though there is very little advantage in terms of wages, conditional on having found a job.

FIGURE 1 – HIGH SCHOOL NON COMPLETION RATES INDIVIDUALS AGED 20-21



PERSONAL CHARACTERISTICS OF GRADUATES AND DROPOUTS

In 1991, Statistics Canada collected information on the school and post-school labour market experiences of 9,460 young people aged 18 to 20. One of the main purposes of that survey was to estimate the high school completion rate. In 1994, Human Resources Development Canada commissioned Statistics Canada to re-interview the same individuals in 1995. These individuals were thus aged 22 to 24 at the time of the re-interview and, as a consequence, the data are best suited for studying the early labour market experiences of the less educated among them. Table 1 shows some simple descriptive statistics documenting the differences in individual characteristics by schooling attainment. In terms of family background variables, it seems clear that high school graduates come from families with

better educated parents than is the case for dropouts (with no post-secondary education) and, also, they performed substantially better when they attended school, as reflected by the much higher proportion of individuals with a B grade point average or better. They also were significantly less likely to have failed a grade in elementary school. This last piece of information suggests that, at least to a degree, poor performances in school precede the process by which students start to contemplate dropping out of high school, instead of the idea of dropping out subsequently affecting school performance.

The data indicate that although graduates seem to have fared better in terms of employment rates, the same cannot be said for labor earnings (or wages): both groups earn approximately the same on average. It is interesting to note that the characteristics of the dropouts who did pursue post-secondary education are different from the characteristics of the "real" dropouts on one important dimension: they are more likely to come from more educated families although they performed just as poorly in class. In fact, their parents are more educated than those of high school graduates. In terms of employment rates, dropouts with some additional post-secondary schooling are doing just as well as high school graduates. Therefore, it seems appropriate to separate them out from the other dropouts if one wants to evaluate the differences in labour market performance between graduates and dropouts.

TABLE 1 • SCHOLARLY ATTAINMENT

EDUCATIONAL SUCCESS AS A MEASURE OF A SERIES OF PERSONAL VARIABLES

Student Variable	H.S. Dropouts with no Post-second. Educ.	H.S. Dropouts with Some Post-sec. Educ.	High School Graduates	H.S. Graduates with Some Post-sec. Educ.	B.A Degree Or More
Father went to Coll/Univ.	5,25%	13,93%	6,31%	10,96%	33,51%
Mother Went to Coll/Univ.	3,49%	11,03%	8,54%	8,82%	24,62%
% Males	55,19%	49,83%	48,70%	44,97%	40,49%
GPA of A in H.S.	3,43%	2,51%	9,82%	18,38%	53,28%
GPA of B in H.S.	26,30%	31,19%	43,80%	48,14%	43,61%
GPA of C in H.S.	56,11%	52,29%	42,33%	31,27%	3,11%
GPA of D in H.S.	14,16%	14,01%	4,06%	2,20%	0,00%
Failed in Primary School	38,37%	25,98%	21,28%	12,35%	0,87%
Collected UI in Last 12 Months	21,99%	18,85%	19,05%	22,03%	15,05%
Collected Welfare in Last 12 Months	21,47%	17,37%	12,21%	6,29%	1,65%
With a Child	41,00%	29,66%	24,08%	16,26%	4,14%
Hours Worked While in School	13,43	15,71	13,60	12,43	8,73
Had a Job While in H.S.	56,29%	64,28%	66,36%	67,43%	58,40%
Had at least one reference job	80,33%	87,66%	87,12%	86,16%	71,93%
N (in the sample)	1188	285	1002	1572	568
N (population) Obtained from the sample weights	98149	29006	168248	326097	138555

Finally, if we look at the incidence of work while in high school and its relation to completion rates, we can see that in fact high school graduates were more likely to have worked than was the case for dropouts. Turning to hours worked while in school, Table 1 shows no evidence that, on average, more hours are associated with a lower incidence of completing high school. In fact, although not shown here, this is true over a substantial range in hours worked. This just serves to highlight the likely important effect of selectivity in the joint determination of hours worked while in school and high school completion.

The punch line from my work on the relationship between work while in school and the incidence of dropping out is that once one applies the proper statistical techniques to handle the problem that those who graduate from high school and who worked are not strictly comparable to the dropouts, then the results strongly indicate that working while in school does cause an increase in the probability that an individual will not graduate from high school. The intuition behind this result and the fact it reverses what simple descriptive statistics would lead us to believe is the following: high school graduates are better students than dropouts on average and some of the qualities that make them better students, such as motivation and work ethics, also seem to make them more likely to search for and find a job while they are in school. This explains why the descriptive statistics show that graduates actually worked at least as much as dropouts in the twelve months preceding graduation. By controlling for those unobserved individual traits, I am able to answer the so-called "what if" question: what would have happened to the same individuals had they worked more hours while they were in school? Descriptive statistics cannot in general answer such a question.

The interesting thing about this result is that the causal relationship between work while in school and the incidence of dropping out is very different in Canada than it is in the United States. Overall, the evidence that work while in school does cause lower educational attainment is not nearly as strong in the U.S. The evidence presented at the beginning of this article provides a possible explanation: in the U.S. there are considerable wage benefits to completing high school while such is clearly not the case in Canada. Consequently, work while in school might not prove to be quite as tempting in terms of inducing students to simply drop out and devote all of their time to work. In short, it does not make any difference in Canada, in terms of wages, whether one has a diploma or not; in the U.S. it does.

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