



Is post-secondary education a safe port and for whom? Evidence from Canadian data[☆]

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ABSTRACT

Previous studies document that adverse labor market conditions, proxied by the unemployment rate, stimulate post-secondary enrollment. This paper shows for the first time that unemployment not only affects enrollment but also changes the composition of the student body and students' educational path, with important consequences for intergenerational mobility. Results show that unemployment stimulates university enrollment especially among individuals with highly educated parents. This has consequences for educational inequality. Students are also more likely to choose university over community college when unemployment rises. Thus, labor market conditions affect the type of education and skills that students acquire. Further, unemployment is shown to affect the decision of workers to return to school and complete their unfinished studies or acquire additional training.

1. Introduction

Young and unskilled individuals are hit strongly by recessions since they face a high unemployment risk and earn low wages (e.g. Mukoyama & Şahin, 2006; Storesletten, Telmer, & Yaron, 2001). However, post-secondary education could mitigate this impact. The benefits of education and human capital accumulation are well understood by economists. Human capital impacts individuals' productivity and earnings (Mincer, 1974) but it also stimulates economic growth and generates other positive externalities, such as lower crime rates and increased civic participation (Hanushek & Woessmann, 2008; Oreopoulos & Salvanes, 2011). If adverse economic conditions increase human capital accumulation, both individuals and society may benefit.

In North America, post-secondary education has been a safe port during economic storms over the last 50 years. In the United States, aggregate unemployment stimulated post-secondary enrollment (e.g. Betts & McFarland, 1995; Dellas & Koubi, 2003; Méndez & Sepúlveda, 2012) and increased aggregate time spent studying (Aguiar, Hurst, & Karabarbounis, 2013). Enrollment in community colleges has been more responsive to the unemployment rate than university enrollment, possibly due to colleges' open admission policies (Betts & McFarland, 1995; Dellas & Sakellaris, 2003). Overall, post-secondary education acted as a buffer and played the role of an automatic stabilizer.

Among studies on Canadian provinces, Handa and Skolnik (1975) and Foot and Pervin (1983) show that youth unemployment increased

undergraduate enrollment in Ontario during the 1950s through 1970s. However, enrollment in community colleges and graduate degree programs was not significantly affected. More recent Canadian studies focus on oil prices rather than unemployment but reach similar conclusions. For oil producing provinces, a decrease in oil prices reduces wage growth and employment in the natural resource sector. As a result, labor force participation decreases and school enrollment increases (Emery, Ferrer, & Green, 2012; Morissette, Chan, & Lu, 2015; Neill & Burdzy, 2010).

This paper contributes to the existing literature by showing that the impact of labor market conditions on enrollment is heterogeneous and more complex than previously shown. Using Canadian data from the Survey of Labor and Income Dynamics (1993–2011), I find that not everyone enrolls in post-secondary education (PSE) when unemployment rises and not all types of PSE institutions are considered a safe port. Unemployment changes the composition of the student body as well as students' educational path. Oreopoulos, von Wachter, and Heisz (2012) and Kahn (2010) documented the negative and long-lasting impact of labor market conditions on university graduates' wages and other outcomes. This paper shows that unemployment also impacts individuals at the time of enrollment by affecting their educational path and the type of skills they acquire. This in turn can influence their future labor market outcomes.

I focus on Canada because of its peculiarity. Canada has the highest post-secondary attainment among OECD countries and the highest

[☆] While the research and analysis are based on data from Statistics Canada, the opinions expressed do not represent the views of Statistics Canada.
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Table 1
Educational attainment in 2011, proportion of 25–64 year-olds by highest level of education.

Country	Total post-secondary	Post-secondary non-tertiary education	College education	University education
Canada	63.17	11.84	24.55	26.77
Ireland	50.65	12.93	14.67	23.05
New Zealand	50.58	11.25	15.51	23.83
Japan	46.40	n/a	20.10	26.30
Israel	46.40	n/a	15.40	31.00
Estonia	43.52	7.20	12.08	24.24
Australia	42.72	4.38	10.44	27.91
United States	42.45	n/a	10.26	32.19
Sweden	42.00	6.83	9.01	26.16
Norway	41.67	3.61	2.22	35.83
OECD average	34.75	5.95	10.23	22.71

Source: Table A1.1a Education at a glance, 2013, OECD. College education refers to tertiary education type B. University education refers to tertiary education type A and advanced research programs (undergraduate and graduate education).

fraction of students with a non-university post-secondary degree (e.g. college diploma, trade certification). In comparison, individuals in other countries are more likely to attend university than college or vocational programs (see Table 1). Therefore, Canada is particularly suited to investigate the impact of unemployment across different types of post-secondary institutions. Further, contrary to the majority of studies in the literature, I use panel data. This allows me to investigate the impact of labor market conditions on education decisions after enrollment, such as the decision to drop out of school or return to school later in life.¹ The results in this paper suggest that we should pay more attention to what happens after enrollment. Centering the analysis around enrollment leads to incomplete results. The paper contributes to the literature by presenting the following new results.

- (i) Labor market conditions affect the type of post-secondary education chosen and the set of skills that students acquire. When unemployment is high, some students choose university over community college. This finding is in contrast with previous American studies (Betts & McFarland, 1995; Dellas & Sakellaris, 2003). I provide evidence showing that, in Canada, university is a better investment than community college when unemployment is high.
- (ii) Unemployment reduces intergenerational education mobility by changing the composition of the student body. When unemployment increases, the fraction of students with highly educated parents increases. This effect is independent of family income. I provide evidence showing that this group of individuals is more likely to take advantage of the fact that university becomes a better investment when unemployment is high.
- (iii) Labor market conditions also affect the decision of workers to return to school. Changes in unemployment encourage workers to return to school to acquire occupation-specific skills through community college education, but do not encourage workers to acquire general skills through university education.

Understanding how labor market conditions affect education is important for several reasons. Higher enrollment during economic contractions could explain the sharp decrease in labor force participation experienced in Canada during the Great Recession. Among Canadians aged 15–24, the participation rate fell from 67.9% in

¹ Also Méndez and Sepúlveda (2012) use panel data, but they focus on training in the US and do not investigate the decision to drop out or return to school.

October 2008 to 63.2% in November 2010.² Flows into education may help to explain this phenomenon. Further, if unemployment stimulates human capital accumulation, adverse labor market conditions may increase workers' productivity and may have some positive impact on the economy. Finally, it is important to understand how unemployment affects the student body and who enrolls in school. Counter-cyclical education (i.e. higher enrollment when macroeconomic conditions worsen) may help individuals climbing the social ladder if they earn degrees that they would not have earned otherwise.

The paper proceeds as follows. The next section provides information about the Canadian post-secondary education system. An overview of the dataset used for the analysis is presented in Section 3. Sections 4 and 5 discuss the results regarding the cyclicity of enrollment and the role of parental background. In Section 6, I analyze the impact of labor market conditions on the decision to return to school after a period of unemployment. Section 7 concludes by summarizing the main findings.

2. Post-secondary education in Canada

In Canada, the majority of PSE institutions are public and education is a responsibility of provincial governments. Provinces provide funding and have control on tuition policies as well as enrollment levels. For this reason, the education system differs from province to province. Students usually graduate from secondary school after completing 12 or 13 years of schooling depending on the province. Then, if a student desires to attend higher education, he or she can pursue a university degree (which usually requires 4 years), a college diploma (which usually lasts 2–3 years and is comparable to an American community college degree) or a certificate at a trade/vocational school (which requires 1–4 years).

Following the International Standard Classification of Education (ISCED) developed by UNESCO, university corresponds to ISCED level 5A, college refers to ISCED level 5B, trade/vocational education refers to ISCED level 4. The last two categories are more closely tied to labor market needs and aim at developing occupation-specific skills. The type of credentials achieved by students also differ in that universities offer university degrees, whereas colleges and trade schools offer college diplomas and certificates. Compared to college and university attendees, students in trades and vocational programs are older, more likely to be married with children and more likely to work while studying.

The province of Quebec represents an exception. In this province, high school students typically graduate after 11 years of schooling. After graduation, they can attend a technical program (e.g. community-college program) or a two-year pre-university program which is usually required to enroll in university. Because students need to complete two years before entering university, undergraduate programs in Quebec typically last 3 years as opposed to 4 years.

Table 1 documents the importance of post-secondary education, and especially non-university PSE, in Canada. The table reports the proportion of 25–64 year-olds by highest level of education for the top 10 countries ranked by post-secondary attainment. Among OECD countries, Canada has the highest proportion of 25–64 year-olds with a post-secondary degree and this is primarily due to the high fraction of students with a college education. Compared to other countries, also the proportion of individuals with a trade or vocational certification is very high.

Fig. 1 shows the time series for the unemployment rate and the post-secondary enrollment rate from available academic years (1992–1993 to 2015–2016). The first panel is for Canada, while the other panels report the time series for several Canadian provinces separately: Ontario (where 38% of Canadians live) followed by Quebec (24%), British Columbia (13%), Alberta (10%) and the remaining six provinces grouped together (15%). The Canadian economy experienced a severe

² Source: Statistics Canada, Cansim Table 282-0087.

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