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# International students as a source of labour supply: A summary of recent trends



by Eden Crossman, Youjin Choi, Yuqian Lu and Feng Hou

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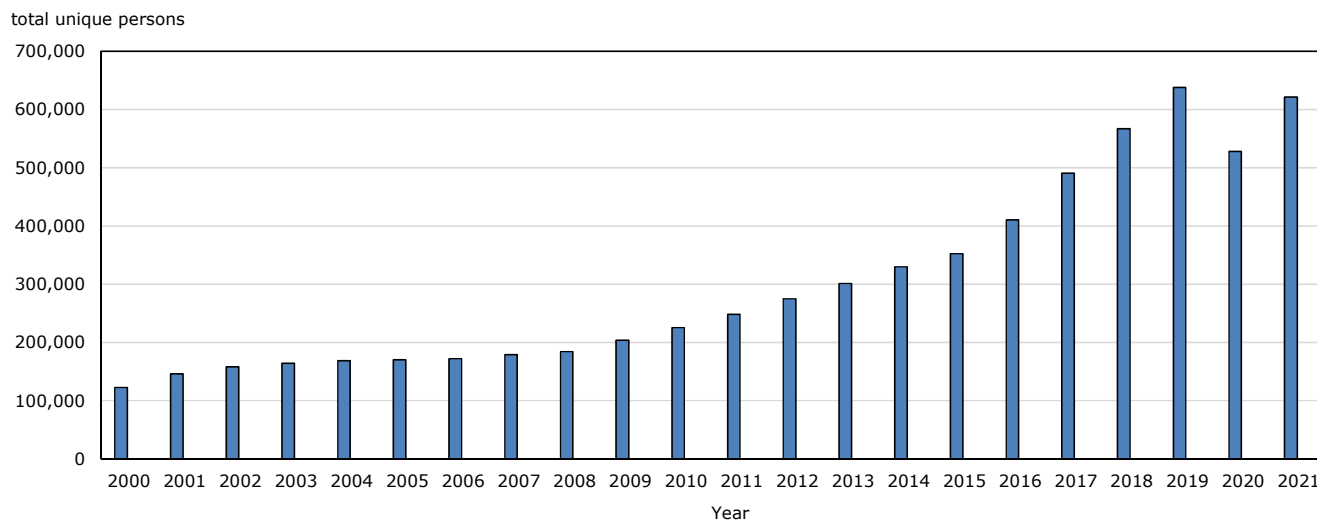
# International students as a source of labour supply: A summary of recent trends

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In Canada, the number of international students (measured here as the number of study permit holders in Canada with a valid permit on December 31 of a given year) has increased steadily since the mid-2000s, and reached 638,300 in 2019. As a result of the COVID-19 pandemic, there were 528,200 international students in 2020, representing a 17% decrease from 2019 and the first annual decline in the international student population in Canada in 20 years. The number of international students increased to 621,600 in 2021.

**Chart 1**  
**Study permit holders in Canada with a valid permit on December 31st, total unique persons, 2000 to 2021**



**Note:** Data are preliminary estimates and are subject to change.  
**Source:** Immigration, Refugees and Citizenship Canada, Study permit holders on December 31st by province/territory of intended destination and study level. <https://open.canada.ca/data/en/dataset/90115b00-f9b8-49e8-afa3-b4cff8facaee/resource/b2340357-b3f8-4ba1-b19b-431ade55d11e>.

The number of international students has grown considerably worldwide. In recent years, Canada has led other major Western countries in the rise of international students. The faster growth in the inflows of international students in Canada is likely related to both the changing reception environment in other major receiving countries (particularly in the United States, where the new admission of postsecondary international students declined by 23% between 2016 and 2019) and the concrete measures adopted by the Canadian government and educational sector to attract international students (Crossman et al., 2021a).

Recently, Immigration, Refugees and Citizenship Canada and Statistics Canada jointly released a series of six research articles examining the role of international students as a source of labour in Canada. Topics covered include recent trends in the number and characteristics of international students; the transition of international students to permanent residency; their retention in the province of study after graduation; and their labour market engagement while they hold a study permit, during the period between graduation and becoming a permanent resident, and after having become a permanent resident (Choi et al., 2021a, b; Crossman et al., 2021a, b; Crossman et al., 2022; Crossman & Hou, 2022). These studies focused largely on international students studying at the postsecondary level and arriving since 2000. The findings of these articles are summarized here.

## **Despite growing in size, the international student population has become less diverse over the past two decades in many ways**

The program composition associated with first-time study permit holders has evolved since 2000 because the increase in the absolute number of students was faster in some programs than in others. Specifically, the share of first-time study permit holders for non-university postsecondary programs (referred to as college programs) grew from 27% in 2000 to 41% in 2019. The share intending to study at the master's degree level doubled, going from 5% in 2000 to 10% in 2019.

There was increased concentration in source countries, provinces of study and fields of study of international students. The share of international students from the same seven countries (South Korea, China, Japan, the United States, France, Mexico and India) increased from 59% in the 2000-to-2004 cohort to 67% in the 2015-to-2019 cohort. Ontario attracted the largest share of international students in the early 2000s, and this attraction grew from 37% in the 2000-to-2004 cohort to 49% in the 2015-to-2019 cohort. The field of business, management and public administration attracted a large and growing share of international students studying at the college level. The increasing concentration of international students by level of education, source country, province of study and field of study may have a downstream impact on the potential pool of candidates for permanent immigration and the Canadian labour force.

## **About 3 in 10 international students who entered Canada in 2000 or later became a landed immigrant within 10 years**

There were clear differences in the rate of transition to permanent residency by program of study. More than half of international students who had come to study for a master's or doctoral degree in the 2000s became a landed immigrant within 10 years. This compares with one in three bachelor's degree students.

The rate of transition also varied by source country. International students from Nigeria, India, Vietnam and China had rates of transition that were two to three times higher than those of students from other major source countries within 10 years after the first study permit. However, while transition rates for international students from Nigeria, Vietnam and China decreased considerably across arrival cohorts, the rates for those from India increased.

International students who obtained a work permit had a much higher rate of transition to permanent residency than those who did not obtain a work permit. Six in 10 international students who were employed (with paid earnings) during their period of study or after graduation became landed immigrants

within 10 years of receiving their first study permit, compared with less than 2 in 10 among those who did not work.

## **One in two international student graduates remained in their province of study one year after graduation**

The retention of international students in their province of study is increasingly being looked at by regions seeking new sources of skilled labour to contribute to local economies. Nearly half of all international student postsecondary graduates who completed their studies between 2010 and 2016 remained in their province of study for the first year after graduation (compared with 8 in 10 domestic students). This rate decreased to 36% five years after graduation for international students, compared with about 75% for domestic students. This difference between international students and domestic students is primarily the result of a higher share of international students without a tax record. This may suggest that these international students have left Canada.

At five years after graduation, the retention rate of international students who had tax records in Canada was 73%, compared with 87% for domestic students. The rates were considerably lower in the Atlantic provinces, Manitoba and Saskatchewan than in the largest immigrant-receiving provinces, Ontario, British Columbia, Alberta and Quebec. These results suggest factors that attract the majority of immigrants to settle in these provinces (e.g., scope of labour market opportunities, city size, presence of family and social ties) also influence the mobility decisions of international students after graduation.

## **The share of international students reporting earnings during their period of study has increased, with the largest gains occurring among those studying at the college level**

Increases over the past two decades in the number of international students, alongside programs designed to facilitate their availability for work while studying, parallel a growing role played by this population in the Canadian labour market. The share of international students with paid employment income among total paid workers grew from 0.1% in 2000 to 1.4% in 2018, corresponding to a 10-fold increase from 21,800 to 277,400 in the number of international student paid workers. Notably, the labour market participation of international students studying at the college level has increased markedly from 7% in 2000 to 57% in 2018.

While all sectors experienced gains in the share of their workforce composed of international students, the gains were particularly large in accommodation and food services; business, building and other support services; wholesale and retail trade; and professional, scientific and technical services. The labour market contribution of international students in the accommodation and food services sector was considerably higher than in others, accounting for 4.6% of workers and 2.5% of employment earnings in this industry in 2018.

## **International students provided a growing source of labour for the Canadian labour market that extended beyond their periods of study**

When international students decide to stay and work in Canada after graduation, one of the main avenues to do so is through the Post-Graduation Work Permit (PGWP) Program, a temporary worker program that provides labour market opportunities for international student graduates. The number of international students participating in the PGWP Program after studying has increased markedly, driven by increasing numbers of international students in Canada and larger shares of international student graduates obtaining a PGWP. Since 2010, there have been higher rates of participation in the PGWP Program among international students completing programs at the college and master's degree levels, relative to programs at the bachelor's and doctoral degree levels.

The labour market participation of PGWP holders (defined by the share of PGWP holders with positive T4 earnings) remained fairly stable from 2008 to 2018, with roughly three-quarters reporting T4 earnings annually. With rising numbers of PGWP holders, this equated to the number of PGWP holders with T4 earnings growing more than 13 times in size, from 10,300 in 2008 to 135,100 in 2018.

## **For international students who become permanent residents, Canadian credentials take some time to translate into stronger economic outcomes**

Over the 2000-to-2019 period, the share of new economic principal applicant immigrants with Canadian study experience increased from 6% to 38%. Immigrants with Canadian study experience were younger, more educated, more likely to speak an official language and much more likely to have pre-admission earnings in Canada than immigrants who did not study in Canada.

During the first two years after immigration, economic principal applicants with Canadian study experience earned considerably more than those who did not study in Canada. This advantage was due entirely to their better official language ability and much higher shares of Canadian work experience. With similar language profiles and pre-admission Canadian work experience, those with Canadian study experience earned significantly less than those without, and this was due mostly to the higher tendency to pursue further schooling in the initial years after immigration among those with Canadian study experience.

Economic immigrants with at least one year of Canadian study experience had higher earnings 10 to 11 years after immigration than those without such experience, regardless of whether they had pre-admission Canadian work experience. These findings suggest that, for economic immigrants who are new graduates and new entrants to the labour market, Canadian credentials translate into stronger economic outcomes in the longer term.

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