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The Earnings Advantage of Landed Immigrants Who Were Previously Temporary Residents in Canada

by Feng Hou and Aneta Bonikowska

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Abstract

This paper compares the entry earnings and earnings growth of economic immigrants who initially arrived as temporary residents and held a work or study permit with those of economic immigrants who were directly selected as permanent residents from abroad. Using the Longitudinal Immigration Database, this study finds that the skill level of prior Canadian work experience matters significantly to earnings. Former temporary residents with work permits for skilled jobs had much higher initial earnings than immigrants without any prior Canadian experience. This earnings gap narrowed during the first 10 years but did not disappear. By comparison, former temporary residents with work permits for non-skilled jobs had significantly lower initial earnings and slower earnings growth than immigrants without any prior Canadian experience. Former foreign students without prior Canadian skilled work experience had slightly higher initial earnings than immigrants landing directly from abroad, entirely because of their longer stay in Canada.

Executive summary

Although most Canadian temporary foreign worker programs did not include provisions that allow participants to apply for permanent residency until recently, a substantial number of temporary foreign workers have become landed immigrants since the 1980s. For instance, from 2008 to 2012, about 32,000 temporary foreign workers gained permanent residency each year, accounting for 13% of the total inflow of landed immigrants.

This paper examines the earnings of economic immigrants who initially arrived as temporary residents and held a work or study permit, and compares them to economic immigrants who were directly selected as permanent residents from abroad. It seeks to answer three questions. First, do economic immigrants who were initially temporary residents with work permits for skilled jobs, work permits for non-skilled jobs, or study permits earn significantly more than economic immigrants who were not previously temporary residents? Second, does any earnings advantage of immigrants who were temporary residents simply reflect the fact that they resided in Canada longer than other economic immigrants? If so, there should be no significant earnings differences between groups when comparisons start from the year of first arrival (i.e., the year in which individuals first came to Canada to work or study as temporary or permanent residents), rather than from the year of landing (i.e., the year in which individuals became landed immigrants or permanent residents). Third, does any earnings advantage appear only in the initial years after arrival or landing, or does it continue over the longer term?

The analysis is based on the Longitudinal Immigration Database, which combines immigrant landing records and annual tax records for immigrants who arrived in Canada since 1980. To make immigrants with and without prior Canadian experience as comparable as possible, this study focuses on immigrants in the Economic Class and excludes those in the Family Class and refugee categories. This is done because immigrants with prior Canadian experience are mostly admitted through the Economic Class. Within the Economic Class, those who came as live-in caregivers (a major source of low-skilled temporary foreign workers) or in the Business Class are excluded. The study sample is restricted to immigrants who landed between 1990 and 2006, who were aged 20 to 54 at the time of landing, and who had at least $1,000 (2011 constant dollars) in paid employment earnings in a given income year. Additional analysis is conducted to include immigrants with earnings under $1,000.

The results show that immigrants who had prior Canadian skilled work experience had a very large initial earnings advantage over economic immigrants who were selected for permanent residency directly from abroad, no matter whether the comparison was made from the year of landing or the year of arrival. In their first full year after immigration, they earned even more than the average among Canadian-born workers. Their advantage is likely related in large part to labour market institutional selection in terms of the role of employers in selecting foreign workers and of subsequent on-the-job screening, and to self-selection among skilled temporary foreign workers. The earnings advantage of immigrants with prior Canadian skilled work experience over immigrants without any prior Canadian experience narrowed rapidly in the initial years after landing as the latter group experienced more rapid earnings growth, but the advantage did not disappear.

Immigrants who had both prior Canadian skilled work experience and study experience also had superior labour market performance after landing. They had a large initial earnings advantage over immigrants without any prior Canadian experience. This advantage narrowed gradually in the first 10 years after landing but expanded subsequently. Although their initial earnings advantage at the time of landing was much smaller than that of immigrants with only prior Canadian skilled work experience, their earnings growth was more rapid. They surpassed immigrants with only prior skilled work experience within 10 years after landing.

By comparison, immigrants with prior Canadian study experience but without prior Canadian skilled work experience had only a small earnings advantage at the time of landing over immigrants without any prior Canadian experience, and this advantage was entirely attributable to their longer stay in Canada. Immigrants with only prior Canadian non-skilled work experience had significantly lower earnings at the time of landing and slower earnings growth after landing than did economic immigrants without any prior Canadian experience.

1 Introduction

Although work experience is an important characteristic that typically contributes to the earnings potential of individuals, many immigrants from developing countries do not benefit from or are even penalized for work experience acquired abroad. Indeed, many Canadian studies show that through the 1990s and 2000s there were no earnings returns—or negative returns—on the foreign work experience of immigrants (Aydemir and Skuterud 2005; Green and Worswick 2010; Hou 2013). This may place immigrants in a catch-22 situation in which they are unable to obtain jobs commensurate with their skills and education because they lack Canadian work experience, but are unable to obtain appropriate Canadian work experience because they are underemployed.

However, immigrants who initially come to Canada as temporary foreign workers and then subsequently become permanent residents may be able to avoid this problem, obtaining Canadian work experience during their initial temporary residence in Canada. The potential scope for this practice has certainly increased over the last decade. Canada formally established temporary foreign worker programs in the early 1970s, with a focus on a small number of highly skilled workers (Vineberg 2010). Temporary foreign worker programs remained small in scope through the 1980s and 1990s, but were broadened through the 2000s to include a larger number of workers, including workers in low-skilled occupations (Foster 2012). By the late 2000s, the number of temporary foreign workers present in Canada exceeded the annual admission of permanent residents. Like many developed Western countries, Canada has increasingly relied on temporary foreign workers to address short-term labour shortages (Pang 2013). Although most Canadian temporary foreign worker programs did not include provisions that allow participants to apply for permanent residency until recently, a substantial number of temporary foreign workers eventually became landed immigrants, even in the 1980s and 1990s.[1] The provincial nominee programs (PNPs), introduced in the late 1990s, and the Canadian Experience Class (CEC), introduced in 2008, have become two pathways from temporary to permanent residence (Citizenship and Immigration Canada 2013b). From 2008 to 2012, about 32,000 temporary foreign workers gained permanent residency each year, accounting for 13% of the total inflow of landed immigrants.[2]

This paper examines the earnings of economic immigrants who initially arrived as temporary residents and held a work or study permit, and compares them to economic immigrants who were directly selected as permanent residents from abroad. The paper addresses three questions. First, do economic immigrants who were initially temporary residents with work permits for skilled jobs, work permits for non-skilled jobs, or study permits earn significantly more than economic immigrants who were not previously temporary residents? Second, does any earnings advantage of immigrants who were temporary residents simply reflect the fact that they resided in Canada longer than other economic immigrants? If so, there should be no significant earnings differences between groups when comparisons start from the year of first arrival (i.e., the year in which individuals first came to Canada to work or study as temporary or permanent residents), rather than from the year of landing (i.e., the year in which individuals became landed immigrants or permanent residents). Third, does any earnings advantage appear only in the initial years after arrival or landing, or does it continue over the longer term?

1. For instance, on average, 16,000 temporary foreign workers became landed immigrants annually in the 1990s, accounting for 7% of all landed immigrants (Citizenship and Immigration Canada 2008).
2. These figures are based on the authors' calculations from statistics published by Citizenship and Immigration Canada (2013a).

The remainder of this paper is organized in four sections. Section 2 reviews the literature on the potential advantages of gaining host-country work experience before acquiring permanent residency. Section 3 discusses the data source, measures, and analytical approaches. Section 4 presents descriptive statistics and multivariate analysis results. Section 5 concludes the paper.

2 Potential advantages of host-country work experience before permanent residency

It is expected that in the years immediately after gaining permanent residency, immigrants who were temporary residents would have better labour market outcomes than immigrants admitted directly from abroad. This is because immigrants who were temporary residents would have had more years of host-country work or study experience. Indeed, previous studies show that host-country work experience is one of the most important predictors of immigrants' earnings (Aydemir and Skuterud 2005; Bonikowska, Hou and Picot 2015*).* Aydemir and Skuterud (2005) show that the earnings return of an extra year of Canadian work experience among immigrants tends to be similar to or higher than that among the Canadian-born. Canadian work experience is also an important factor associated with finding a job. Oreopoulos (2011) examines the likelihood of obtaining a job interview and finds that it makes no difference whether an immigrant obtained his or her bachelor's degree in Canada or abroad if the candidate also has four to six years of Canadian work experience. If the length of host-country experience is the only difference between immigrants who were temporary residents and other immigrants, one would not expect significant differences in earnings to remain once the duration of host-country experience is taken into account.

In addition to the length of host-country experience, the literature suggests that immigrants who were temporary residents may outperform other immigrants because they were successfully screened through multiple selection processes before becoming permanent residents. One such process is labour market institutional selection (Hao 2013). Hao (2013) argues that unlike the supply-driven system for selecting permanent residents, such as the points system in Canada, the admission of temporary foreign workers is demand-driven. In demand-driven systems, as practiced in the United States for economic immigrants, employers who face a shortage of domestic-born workers initiate the process of hiring foreign workers by submitting a request to immigration authorities (Koslowski 2014). Foreign workers admitted through this process normally have a job lined up upon arrival. Furthermore, because of the high cost of recruiting and of hiring temporary foreign workers, employers likely conduct stringent screening of potential recruits to ensure a good fit between jobs and workers. More importantly, employers may further screen foreign workers using their actual performance on the job to decide whether to retain and sponsor them for immigration (Hao 2013). In short, foreign workers are offered a job at admission on a trial basis, and only those whose employers want to retain them for long-term employment will be sponsored for permanent residency. By comparison, in the supply-driven system, permanent residency is offered at admission to applicants whose human capital characteristics are considered to offer high potential for labour market success but who have not been directly screened and tested by employers.

There may also be an element of individual self-selection differentiating immigrants who were temporary residents from those admitted directly from abroad (Sweetman and Warman 2014). Returning to the country of origin is an option for immigrants whose experience in the host country is not satisfactory. For temporary foreign workers, dissatisfaction would manifest itself in the decision not to seek permanent residency. Return migration is less costly and more prevalent because of the transient nature of their stay in Canada. By contrast, return migration may be less prevalent among immigrants directly admitted from abroad, because their costs of return migration may be higher and because labour market difficulties are offset by eligibility for

a wider range of public programs and benefits than available to temporary residents. The higher degree of self-selection among immigrants who were temporary residents may lead to better labour market outcomes. On the other hand, if prospective immigrants are becoming temporary residents as a foot-in-the-door strategy for permanent residency, regardless of their labour market prospects in Canada, the self-selection effect may not be substantial.

Empirical studies in the United States have provided some evidence of the labour market performance of highly skilled temporary foreign workers. Using the 2003 National Survey of College Graduates, Hunt (2011) shows that immigrants who initially entered the United States on temporary work visas or student or trainee's visas earned higher wages and registered more patents than native-born college graduates. This was primarily because of their higher levels of educational attainment and fields of study. By contrast, immigrants who arrived as lawful permanent residents (mostly through family reunification) did not outperform native-born college graduates in wages and innovative activities. Mithas and Lucas (2010) find that foreign information technology (IT) professionals, most of them on H-1B or other work visas,[3] have a large salary premium when compared with IT professionals with U.S. citizenship. They argue that foreign IT professionals offer skills that are complementary to those of U.S. IT professionals. Similarly, Lofstrom and Hayes (2011) find that H-1B visa holders in IT and postsecondary education occupations have higher earnings than U.S.-born workers, while those in health, engineering, and mathematics and science occupations have earnings similar to those of U.S.-born workers.

While the above studies compare highly skilled temporary foreign workers with U.S.-born workers, Hao (2013) focuses on the earnings differences among foreign-born workers admitted to the United States through temporary worker visas, through permanent residence visas for economic purposes, and through student visas. Hao (2013) argues that the earnings differentials between these groups support the hypothesis of labour market institutional selection. Similarly, Lowell and Avato (2014) focus on earnings differences between foreign-born workers admitted to the United States through temporary worker visas and through student visas. They argue that foreign-born workers who first come to the United States to pursue education are likely not as highly selective as those admitted via temporary work visas, the latter having to demonstrate their skills and job readiness to U.S. employers. An Australian study also finds that former international students who lack advanced English ability and are in low-demand fields fare poorly in employment and earnings compared with other skilled immigrants (Hawthorne and To 2014).

Recent Canadian studies generally confirm the earnings advantage associated with Canadian work experience obtained before permanent residency. A government evaluation report prepared by Citizenship and Immigration Canada (2010) finds that having a minimum of one year of full-time authorized work in Canada, before applying for permanent residency, increases an immigrant's earnings by about 30%. By comparison, having studied in Canada, before applying, is associated with lower earnings, when factors related to age, educational level, language, and work experience are controlled for. Using census data, Thomas (2010) finds that non-permanent residents working full time have higher average weekly earnings than recent immigrants who have been in the country for five years or less. He attributes this advantage of non-permanent residents to the fact that most of them are recruited to remedy specific skill shortages and have prearranged jobs. Warman (2010) shows that temporary foreign workers have positive earnings returns on their foreign work experience, but recent regular immigrants obtain no such returns. The only Canadian study directly comparing former temporary foreign

3. H-1B is the largest temporary visa program in the United States. The program is designed to increase the flexibility of immigration admission and allows firms to fill shortages of highly skilled labour, particularly in science, technology, engineering and mathematics occupations. Other temporary programs for highly skilled workers include those for intracompany transferees (L-1), individuals with extraordinary ability (O-1) and skilled workers from other North American Free Trade Agreement countries (TN) (Lofstrom and Hayes 2011).

workers, former foreign students and other immigrants is a study by Sweetman and Warman (2014). Based on the Longitudinal Survey of Immigrants to Canada, which interviewed immigrants who landed between late 2000 and early 2001, their study found that men who were previously temporary foreign workers had higher employment rates and higher earnings six months and four years after landing than other skilled worker principal applicants (who were evaluated through the points system) and other categories of immigrants (e.g., spouses and dependants of skilled worker principal applicants, family, and refugees). The advantage of former foreign students over other skilled worker principal applicants was found to be small and not statistically significant.

This study contributes to the literature in several ways. First, by using information on the actual years of work experience temporary residents have in Canada before becoming landed immigrants, it directly examines the extent to which any earnings advantage of former temporary residents is attributable to more years of Canadian work experience relative to other immigrants. Information on actual years of prior Canadian experience also allows this study to estimate any earnings advantage associated with an extra year of prior Canadian experience. Second, this study distinguishes between former temporary residents who had skilled and non-skilled Canadian work experience, as defined by type of work permits issued to temporary foreign workers, as well as between former foreign students with or without prior Canadian work experience. This provides far more nuance than available in previous U.S. and Canadian studies. Moreover, this disaggregation of former temporary residents is highly relevant to policy, given that low-skilled workers were a major component of the expansion of temporary foreign worker programs in Canada through the 2000s (Foster 2012). Third, with multiple cross-sections of data, this study can follow immigrants for a minimum of 5 years and up to 30 years. This makes it possible to determine whether earnings advantages (or disadvantages) of former temporary residents are evident only in the years immediately after becoming landed immigrants or persist over the longer term.

3 Data and methods

3.1 Data

This study used the Longitudinal Immigration Database (IMDB). The IMDB combines immigrant landing records and annual tax records for immigrants who arrived in Canada after 1980. Immigrants who have filed at least one tax return since 1982 are included in the database. Information on immigrant characteristics at landing, including age, education, marital status, source country, official language, and immigration category (e.g., skilled worker, family, and refugee) is drawn from immigrant landing records. Information on earnings and other income, current marital status, and place of residence is drawn from the tax records. This study is based on tax records covering the period from 1982 to 2011. Information on Canadian experience obtained before landing is derived from administrative data on temporary residents.

To make immigrants with and without prior Canadian experience as comparable as possible, this study focuses on immigrants in the Economic Class. Immigrants with prior Canadian experience are predominantly admitted as permanent residents through this class. Immigrants in the Family Class and refugee categories are excluded. Within the Economic Class, immigrants who came under the live-in caregivers program (a major stream of low-skilled

temporary foreign workers) and the Business Class are also excluded.[4] The analysis is restricted to immigrants who landed between 1990 and 2006, although earnings were traced back to 1982 for former temporary residents who filed taxes during that period, and trace them forward to 2011. The focus on immigrants landing between 1990 and 2006 makes it possible to observe the earnings of immigrants who worked in Canada prior to landing and to track earnings after landing for at least 5 years. The final sample is restricted to immigrants who were aged from 20 to 54 at the time of landing and who had at least $1,000 (2011 constant dollars) in paid employment earnings in a given income year.[5] The restriction on minimum earnings is to reduce the possible inconsistency in the tax-filing patterns of low earners (mostly zero earners) over time because of the implementation of new tax rules in the late 1980s and early 1990s.[6] To show the effect of the sample restriction, some descriptive results are produced for the sample with no earnings or small earnings and are discussed in the results section.

Although immigrants can be followed longitudinally in the IMDB, this study treats the data as repeated cross-sections.[7] The final sample size for the earnings model is 4.01 million person-years for men, and 3.15 million person-years for women.

3.2 Measures

The outcome variable in the analysis is annual earnings from paid employment (wages and salaries). Annual earnings reflect the combined effect of annual hours worked (i.e., weeks worked and weekly full-time or part-time status), hourly wage rates, and bonuses and other supplementary earnings. The IMDB does not contain information on work times (weeks and hours worked), so it is not possible to disaggregate wage rates and time worked. Annual earnings are adjusted to 2011 constant dollars. To reduce the influence of outliers, real annual earnings were capped at $300,000.[8] All models use the natural logarithm of real annual earnings.

The key independent variable in this analysis is the type of Canadian experience obtained before receiving permanent residency in Canada. It is derived from the type of permits held: work permits for skilled jobs or non-skilled jobs, and study permits.[9] This variable consists of six

4. The live-in caregiver program is a low-skilled stream of temporary foreign workers who are eligible to apply for permanent residency after completing 24 months of paid employment within a period of 4 years. The specific occupation conditions for members of this group (caring for children, the disabled or the elderly while living in the private homes of these individuals) and the narrow range of source countries they typically come from (the Philippines and a few Caribbean countries) make comparisons with other immigrants inappropriate. The Business Class is designed to attract entrepreneurs and investors.
5. The results are broadly similar if total employment earnings (paid employment earnings plus positive self-employment and other employment income) are used in the analysis.
6. This restriction on minimum earnings understates the overall labour market advantages of immigrants who were former temporary foreign workers because they are much less likely to have annual earnings under $1,000 than immigrants without any prior Canadian residence experience, particularly in the early years after immigration. In the study sample, the average share of immigrants with annual paid earnings from $0 to $1,000 was 16% among male immigrants with prior Canadian skilled work experience and 31% among male immigrants without any prior Canadian residence experience in the first full year after immigration. By the 10th year after immigration, the share was 24% for the former group, and 31% for the latter. Among immigrants with earnings from $0 to $1,000, in the first full year after immigration, about 96% of those with prior Canadian skilled work experience had no paid earnings, as did 93% of those without any prior Canadian work experience. By the 10th year, about 98% of both groups of immigrants with earnings from $0 to $1,000 had no paid earnings.
7. The advantage of this approach is that the analysis can capture all immigrants who are working in any given year, thus providing a fuller picture of the economic performance of immigrants instead of restricting the sample to those who were employed in all years and can be followed to produce a balanced longitudinal panel.
8. In the study sample, only 0.2% of male immigrants and 0.03% of female immigrants had earnings over $300,000. The results change little when real annual earnings are capped at $500,000.
9. The information on the work or study permits of temporary residents is not part of the regular IMDB. These supplementary variables are derived from Citizenship and Immigration Canada's administrative database for temporary residents and merged with the IMDB. These variables cover all principal applicants to the skilled worker program and the PNP who ever obtained a temporary work or study permit, as well as their spouses.

categories: (1) immigrants with only prior Canadian skilled work experience,[10] (2) immigrants with prior Canadian skilled work and study experience, (3) immigrants with prior Canadian non-skilled work experience,[11] (4) immigrants with only prior Canadian study experience, (5) immigrants with other prior Canadian experience (those who had neither work permits nor study permits, but who appeared in the tax files before the landing year),[12] and (6) immigrants without any prior Canadian experience. In regression models, this variable is entered as five dummy variables, and immigrants without any prior Canadian experience are the common reference group. An alternative model specification uses the number of years of Canadian skilled work, non-skilled work, study, and other experience to replace the type of prior Canadian experience.

This study distinguishes between year of landing and year of arrival. Year of landing represents the year in which a person became a permanent resident of Canada. For many immigrants, this is also the year in which they first arrived in Canada. However, the year of arrival precedes the year of landing for immigrants who first came to Canada temporarily to work, study, or stay for other reasons. This study uses this distinction to derive two other key independent variables: years since landing and years since arrival. For those with prior Canadian experience, years since arrival are counted from the year of first appearance in the tax files.[13] For those without any prior Canadian experience, this variable is counted from the year of landing.

3.3 Models

Three alternative models are constructed to examine the effects of Canadian experience obtained before landing on immigrant earnings:

$$\begin{aligned}\text{Log earnings} = {} & \beta_{type} * TYPE_j + \beta_{ysl} * YSL + \beta_{ysl2} * YSL^2 + \beta_{tysl} * TYPE_j * YSL \\ & + \beta_{tysl2} * TYPE_j * YSL^2 + \Sigma\beta X + \beta_u * U + e\end{aligned} \tag{1}$$

$$\begin{aligned}\text{Log earnings} = {} & \beta_{type} * TYPE_j + \beta_{ysl} * YSA + \beta_{ysa2} * YSA^2 + \beta_{tysa} * TYPE_j * YSA \\ & + \beta_{tysa2} * TYPE_j * YSA^2 + \Sigma\beta X + \beta_u * U + e\end{aligned} \tag{2}$$

$$\begin{aligned}\text{Log earnings} = {} & \beta_{ypej} * TYPE_j + \beta_{ysl} * YSL + \beta_{ysl2} * YSL^2 + \beta_{typsl} * TYPE_i * YSL \\ & + \beta_{typsl2} * TYPE_j * YSL^2 + \Sigma\beta X + \beta_u * U + e\end{aligned} \tag{3}$$

The first model uses the year of landing as the starting point to compare earnings by type of prior Canadian experience. YSL is years since landing. The $TYPE_j$ variable includes the five dummy variables identifying the different types of Canadian experience prior to landing. X represents the selected individual-level socio-demographic characteristics. U represents the regional unemployment rate variables in the year of arrival and the year when the earnings are observed. The significance and size of the interaction terms between years since landing and type of prior Canadian experience show how long the earnings differentials by type of prior

10. Skilled work experience refers to experience in occupations at the National Occupational Classification skill level 0 (management occupations), level A (occupations requiring a university degree), and level B (occupations requiring at least some postsecondary education).
11. This group also includes a very small share of immigrants who had both prior Canadian non-skilled work experience and study experience. Furthermore, foreign residents in some occupations do not require a work permit, such as athletes, academics and students working on campus. Under certain trade agreements, workers in certain occupations are not required to obtain work permits (Sweetman and Warman 2010).
12. This group includes individuals with prior visitor visas or refugee claimants who landed in the Economic Class.
13. Immigrants who held work permits held them on average for 3 years and filed taxes on average for 3 years.

Canadian experience last after landing. The squared years since landing $\left(YSL^2\right)$ capture the possibility that immigrants without prior Canadian experience might have a faster rate of catch-up with immigrants who had some prior Canadian experience in the years immediately after immigration, but that this rate of catch-up might level off over time. This model excludes earnings observations before landing for former temporary residents from the analysis.

The second model uses the year of arrival as the starting point to compare earnings by type of prior Canadian experience. In this model, YSL is replaced by YSA—years since arrival. This model includes in the analysis all earnings observations before landing for former temporary residents.

The third model examines earnings advantages associated with an extra year of prior Canadian experience. This model replaces the $TYPE$ variables by four variables: years of prior Canadian skilled work experience,[14] years of prior Canadian non-skilled work experience,[15] years of prior Canadian study experience,[16] and years of other prior Canadian residence experience.[17] As does the first model, this model excludes earnings observations before landing for former temporary residents from the analysis.

All models also control for individual-level socio-demographic characteristics and macro labour market conditions. Individual-level characteristics include the following: (1) landing cohort and its interaction term with years since landing or arrival; (2) age at landing; (3) principal applicant, or spouse or dependant; (4) education at landing; (5) official language at landing, derived from the combination of mother tongue and self-reported ability to speak an official language at landing; (6) months of full-time school attendance in a given year;[18] (7) immigrant source region; and (8) geographic location of residence in each tax year.[19] Table 2 presents the coding of these variables.[20] The variables for labour market conditions include the regional unemployment rates of males in prime working ages (25 to 54 years old) in the year of arrival, and the regional unemployment rates for males in prime working ages in the year earnings are observed.[21] The first measure is commonly used to reflect the macroeconomic conditions for immigrants at landing (e.g., Aydemir 2003; Chiswick, Cohen and Zach 1997). This variable was included to control for the effect of economic conditions at landing on immigrant earnings and the possibility that the transition from temporary foreign worker status and foreign student status to permanent residency is more likely to occur in tight labour markets. The second measure controls for the effect of changes in economic conditions on immigrant earnings profiles in years after landing or arriving in Canada.

14. This is derived from the number of years with work permits for skilled jobs. It may not fully capture true skilled work experience, as some temporary foreign workers held work permits but did not work, and some might have worked in Canada before obtaining work permits. The current dataset does not have information to identify those who held work permits but did not work. Those who worked in Canada without work permits are counted in the fourth variable, years of other prior Canadian residence experience.
15. This is derived from the number of years with work permits for non-skilled jobs.
16. This is derived from the number of years with study permits.
17. This is derived from the number of years from the first appearance in the tax files to the year of landing, minus the above years of work experience and study experience.
18. This variable is derived from the total educational deduction an individual claimed for a year, divided by the maximum amount that a person could claim for each month in a qualifying educational program.
19. Note that this study does not attempt to derive a variable for foreign experience. However, the inclusion of education level and age at landing (for a given landing cohort) roughly controlled for differences in foreign (potential) experience.
20. The coding of immigrant source regions and geographic locations is not shown in the data tables, to reduce the size of the tables. The source-region variable is grouped into 10 categories: the United States; the Caribbean, Central America, and South America; Northern and Western Europe; Southern and Eastern Europe; Africa; South Asia; East Asia; Southeast Asia; other Asian countries; and other countries. The United States is used as the reference. The geographic location of residence is grouped into 14 categories: Montréal, Toronto, Vancouver, the 10 provinces individually (excluding the three aforementioned cities from their respective provinces), and the territories combined (Yukon, Northwest Territories and Nunavut). Toronto is used as the reference group.
21. The unemployment data are downloaded from CANSIM table 282-000211 (Statistics Canada), which is based on Labour Force Survey estimates. The regions are based on 14 categories: Toronto, Montréal, Vancouver, the 10 provinces, and the 3 territories combined.

The IMDB contains the intended occupation reported by principal applicants in the Economic Class. This variable is used as an additional control in the analysis on a subsample of principal applicants in the Economic Class to examine the extent to which the earnings advantage of skilled temporary foreign workers is associated with their intention to work in high-paying occupations. This variable is coded into 14 broad groups.[22]

All models are estimated separately for men and women. These models are also estimated separately for principal applicants in the Economic Class and their spouses. Given that the same immigrant could appear in the tax files in different tax years, cluster-robust standard errors are estimated to correct for autocorrelation among the repeated observations of the same immigrant.

4 Empirical results

In this section, descriptive statistics are first presented to show the percentage distribution of immigrants by type of prior Canadian experience. Observed earnings differences are presented by type of prior Canadian experience and years since landing or arrival. Next, model estimates are provided to show the earnings differences by type of prior Canadian experience or by years of prior Canadian experience, after adjusting for individual-level socio-demographic characteristics and macroeconomic conditions.

4.1 Descriptive results

Among male economic immigrants in the study sample who landed between 1990 and 2006, about 22.8% had some prior Canadian experience (Table 1). The share with prior Canadian experience was around 29.6% among those who landed in the early 1990s, decreased to slightly below 20% in the late 1990s and early 2000s, then increased to 29.7% over the period from 2005 to 2006. The relatively high rate in the early 1990s coincided with the implementation of the Backlog Clearance Program, although this study excluded immigrants who were admitted directly under this program from the study sample.[23] The high rate in the mid-2000s reflects the expansion of the PNPs, which often recruit immigrants from among temporary foreign workers. The rate of transition from temporary to permanent residency continued to increase in the late 2000s and early 2010s with the further expansion of the PNPs and the introduction of the CEC in 2008.[24]

Among immigrant men with prior Canadian experience, just over one-half had prior Canadian skilled work experience or a combination of Canadian skilled work and study experience (Table 1). The share of immigrant men with Canadian non-skilled work experience was small through most of the reference period, reflecting the fact that temporary foreign worker programs were primarily confined to skilled workers until the mid-2000s.[25] The share of immigrant men

22. The occupational groups are management; business, finance, and skilled administration; clerical occupations; professional occupations in natural and applied sciences; technical occupations in natural and applied sciences; professional occupations in health; technical and skilled occupations in health; social sciences and social services; art, culture and sports; sales and services; trades and transportation; occupations in primary industries; occupations in processing and manufacturing; and others.
23. The Backlog Clearance Program was introduced in 1988 to deal with the surge in the number of inland refugee claims in the late 1980s. Likely related to the implementation of the program in the early 1990s, many former visitors and international students were allowed to stay with minister's permits and given permanent residency as economic immigrants. For instance, minister's permits were issued to temporary residents from China with temporary work, visit, or student visas who did not want to go back to China after the 1989 Tiananmen Square student movement.
24. According to Citizenship and Immigration Canada (2013a), 31% of landed immigrants in 2012 were previously temporary residents.
25. The study excluded immigrants under the live-in caregiver program—a main source of low-skilled temporary foreign workers who were allowed to apply for permanent residency—from the study sample.

with only Canadian study experience was small in the early 1990s but increased in subsequent years and by 2005/2006 accounted for about one-fifth of immigrants with prior Canadian experience. The trend for women is generally similar to that for men, although women were much more likely to have prior Canadian experience that was neither work nor study.

Table 1
Percentage distribution of landed immigrants by type of Canadian experience before permanent residence, landing year, and sex

	Year of becoming permanent residents				
	1990 to 2006	1990 to 1994	1995 to 1999	2000 to 2004	2005 to 2006
			percent		
Men					
Prior Canadian skilled work experience only	7.9	10.4	6.5	6.3	11.4
Prior Canadian skilled work and study experience	4.1	4.8	4.8	2.5	5.7
Prior Canadian non-skilled work experience	0.6	0.7	0.7	0.4	1.2
Prior Canadian study experience only	2.5	0.7	2.5	3.2	5.7
Other prior Canadian experience	7.7	13.0	5.3	6.3	5.8
No prior Canadian experience	77.2	70.4	80.4	81.4	70.3
Women					
Prior Canadian skilled work experience only	5.0	5.4	3.9	4.2	9.8
Prior Canadian skilled work and study experience	3.0	2.5	3.2	2.4	5.5
Prior Canadian non-skilled work experience	0.7	1.2	0.5	0.3	0.8
Prior Canadian study experience only	1.9	0.7	1.9	2.3	4.3
Other prior Canadian experience	12.4	20.8	7.7	9.2	12.1
No prior Canadian experience	77.1	69.4	82.8	81.5	67.5

Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Chart 1 presents observed (i.e., not regression-adjusted) earnings of immigrant men by type of prior Canadian experience and year since landing. Immigrant men with only prior Canadian skilled work experience earned about $84,900 in their first full year in Canada. As a point of reference, Canadian-born male workers aged 25 to 64 with minimum annual earnings of $1,000 on average earned $60,900 in 2000, and university-educated Canadian-born male workers on average earned $91,200.[26] Thus, these immigrants in their first full year earned more than average Canadian-born workers, but earned slightly less than university-educated Canadian-born workers.

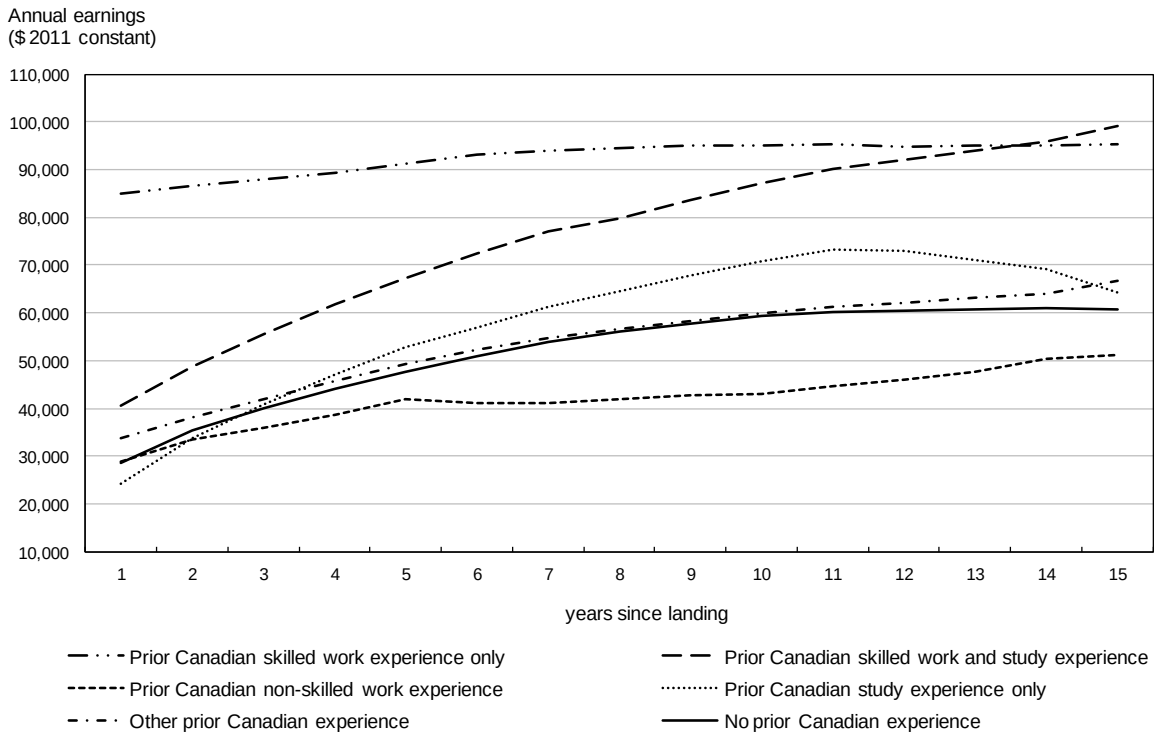
Furthermore, immigrant men with only prior Canadian skilled work experience clearly had the largest earnings advantage over immigrants without prior Canadian experience both in the initial years after landing and in the long term. The advantage was about $56,000 in the first full year after landing, or twice the average earnings of immigrants without prior Canadian experience, and remained at $35,000, or 60%, 15 years after landing.[27] Immigrants with both prior Canadian skilled work and study experience had the second highest initial earnings. They earned 42% more than immigrants without prior Canadian in the first full year after landing, and the advantage increased to 63% in the 15th year after landing. Immigrants in the other four

26. The earnings for Canadian-born workers were calculated from the 2011 National Household Survey.
27. Including observations with annual earnings under $1,000 increases the relative advantage of those with only prior Canadian skilled work experience or with both skilled work and study experience, particularly in the initial years after immigration. For instance, in the restricted sample, male immigrants with prior Canadian skilled work experience earned 2.94 times that of immigrants without prior Canadian experience in the first year after immigration, and 1.57 times in the 15th year after immigration. When immigrants with annual earnings under $1,000 are included, these relative rates become 3.64 and 1.72, respectively. The inclusion of immigrants with annual earnings under $1,000 only slightly improves the relative position of immigrants with only study experience or non-skilled work experience in the initial years.

categories all had low earnings initially after landing relative to immigrants without prior Canadian experience. Over time, immigrants with only prior Canadian study experience had higher earnings growth than those without any prior Canadian experience, while immigrants with Canadian non-skilled work experience had lower earnings growth than those without any prior Canadian experience.

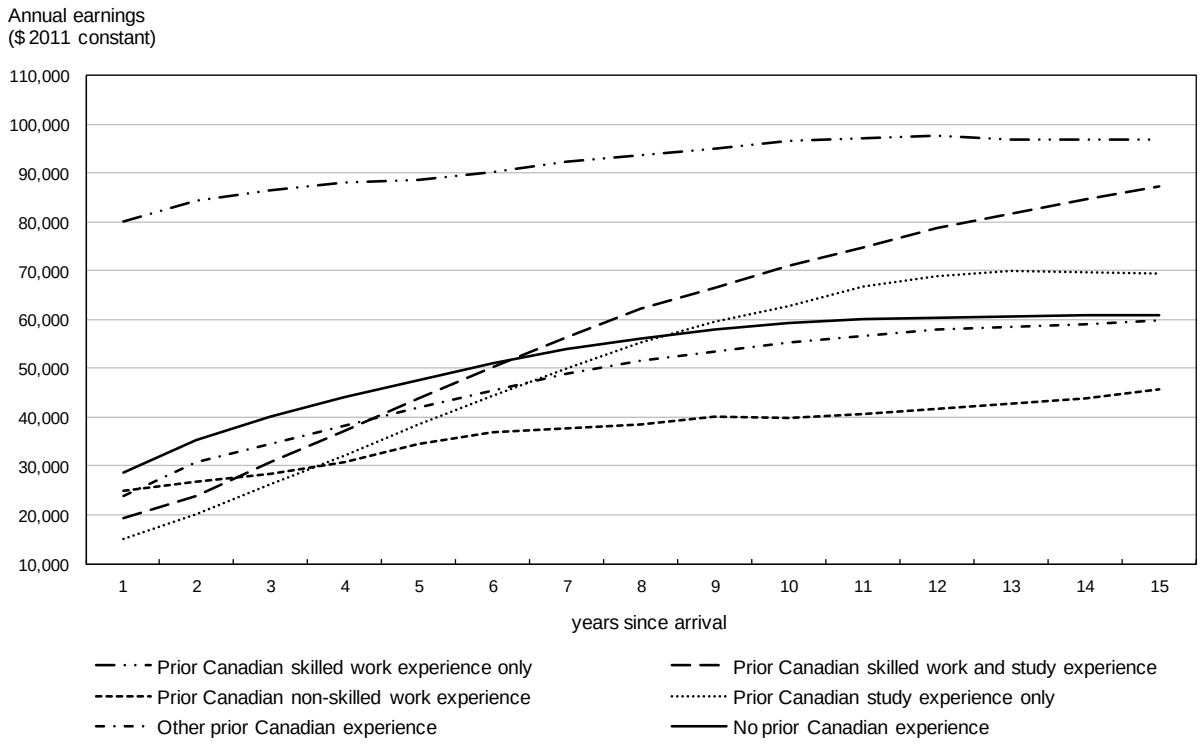
A different pattern emerges when comparing immigrant men with and without prior Canadian experience, after taking into account group variations in the length of stay in Canada (Chart 2). Immigrant men with only prior Canadian skilled work experience still had the highest average annual earnings in the initial years and in the long term. Immigrant men without any prior Canadian experience had higher earnings than the other four groups in the first five years after arriving in Canada. However, over the longer term, the annual earnings of immigrant men with both prior Canadian skilled work and study experience and of immigrant men with only prior Canadian study experience were higher. Immigrant men with prior Canadian non-skilled work experience had lower earnings than immigrant men without any prior Canadian experience over both the short and long term.

Chart 1
Average annual earnings of immigrant men, by years since landing



Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Chart 2
Average annual earnings of immigrant men, by years since arrival

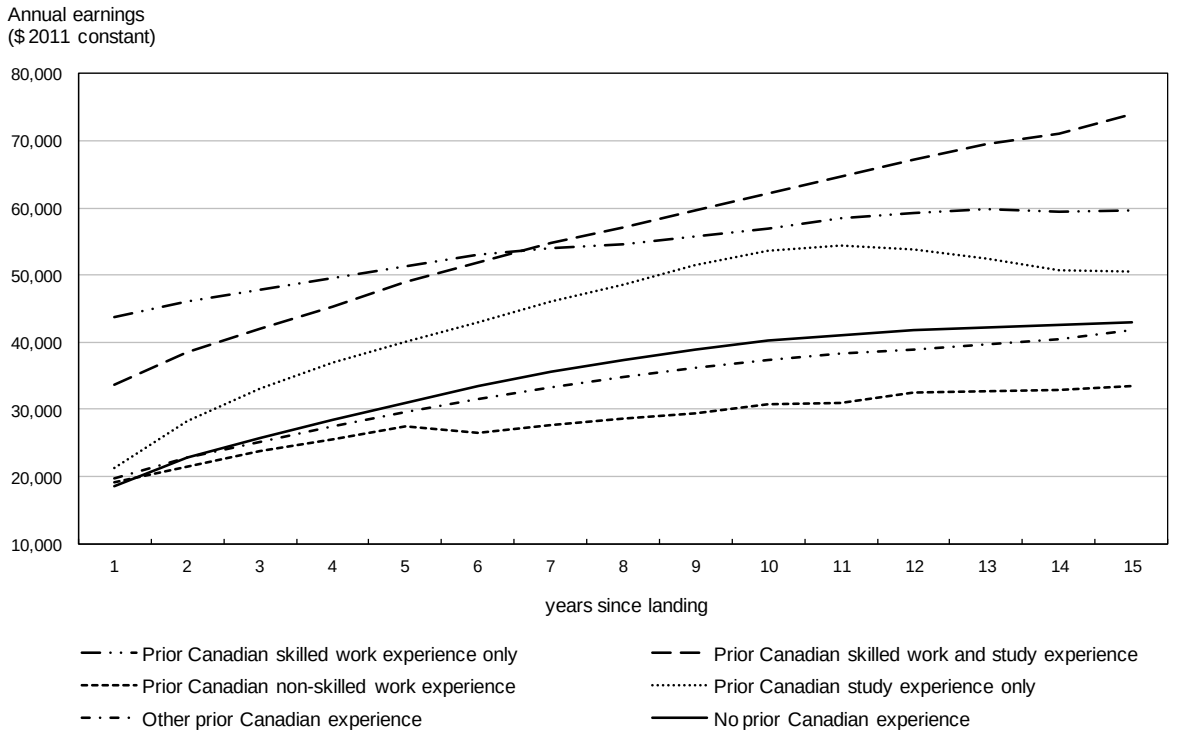


Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

The average annual earnings trajectories of female immigrants in the various groups are generally similar to those of male immigrants, although the group differences tend to be smaller, particularly among those with skilled work experience or study experience, or both (Charts 3 and 4). In the first full year after landing, female immigrants with only prior Canadian skilled work experience on average earned $43,800, which was higher than the average of similar aged Canadian-born female workers at $41,300 in 2000, but lower than the average of university-educated Canadian-born female workers at $58,000.[28]

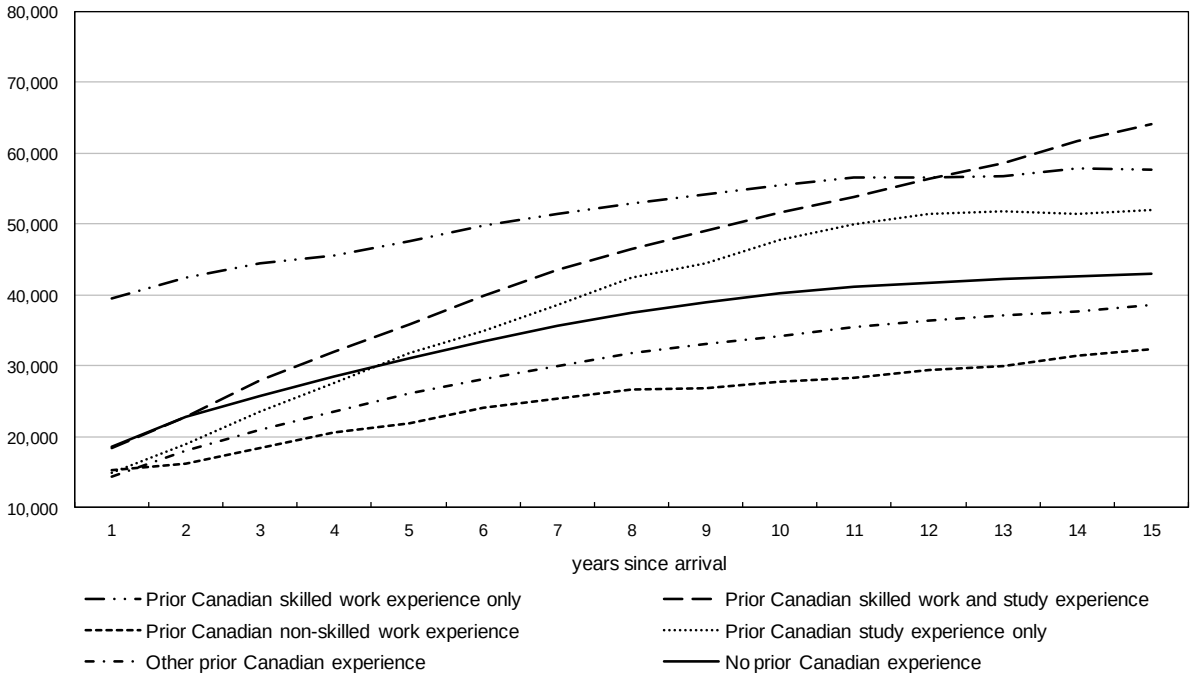
28. The earnings for Canadian-born workers were calculated from the 2011 National Household Survey.

Chart 3
Average annual earnings of immigrant women, by years since landing



Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Chart 4
Average annual earnings of immigrant women, by years since arrival



Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

The observed differences in earnings growth by type of prior Canadian experience may partly originate from group differences in human capital factors and source regions. As shown in Table 2, immigrants with only prior Canadian skilled work experience were more likely to have a graduate degree, to have English as their mother tongue, to be older, and to come from Northern and Western Europe and the United States than immigrants without any prior Canadian experience. Immigrants with prior Canadian study experience, either with or without Canadian skilled work experience, were most likely to have a graduate degree and to be in younger age groups. Immigrants with prior Canadian non-skilled work experience had lower educational attainment and were more likely to come from Southern and Eastern Europe, and the Caribbean and South America. These differences raise the question of whether the differences in earnings presented above remain significant when group differences in human capital and source regions are taken into account. This question is addressed in the following sections.

Table 2
Group differences in human capital factors and source regions among immigrant men

	Prior Canadian skilled work experience only	Prior Canadian skilled work and study experience	Prior Canadian non-skilled work experience	Prior Canadian study experience only	Other prior Canadian experience	No prior Canadian experience
			percent			
Age at landing						
20 to 24	2.5	8.3	6.9	9.9	6.0	4.6
25 to 29	17.1	39.8	24.0	45.2	19.5	19.9
30 to 34	27.3	30.6	25.7	28.8	28.8	28.2
35 to 39	23.3	14.3	21.6	10.6	22.7	23.4
40 to 44	16.1	5.1	12.2	3.8	13.0	15.1
45 to 54	13.8	2.0	9.6	1.6	10.1	8.8
Education at landing						
Secondary or less	9.5	1.3	24.9	2.0	18.3	10.3
Trade or apprenticeship	9.6	1.5	13.0	2.0	8.5	7.6
Some postsecondary	13.4	8.0	24.1	8.1	14.7	14.6
Bachelor's degree	28.5	30.6	27.2	30.9	30.2	47.9
Graduate degree	39.0	58.7	10.9	57.0	28.4	19.7
Language ability						
English mother tongue	32.9	11.2	9.2	4.1	11.8	7.6
French mother tongue or speak French	3.2	4.5	15.1	6.2	4.3	5.4
English or French mother tongue, bilingual	8.8	9.4	4.9	9.4	3.3	2.3
Other mother tongue, speak English	44.5	63.0	41.2	60.1	64.7	56.3
Other mother tongue, bilingual	5.4	10.7	19.7	17.7	6.0	10.2
Speak neither English nor French	5.3	1.3	10.0	2.5	9.9	18.3
Source region						
Northern and Western Europe	31.1	9.5	10.5	7.7	6.9	6.2
Southern and Eastern Europe	10.5	5.4	41.1	6.6	12.8	17.9
Africa	8.0	19.4	9.4	23.1	8.3	9.0
East Asia	17.5	29.0	3.7	30.1	33.5	23.4
South Asia	8.6	16.0	7.3	13.5	14.2	22.5
Southeast Asia	2.4	4.2	3.0	2.1	6.7	8.5
Other Asian countries	2.5	5.6	3.2	7.7	4.4	6.5
Caribbean and South America	5.2	7.4	21.0	7.4	9.8	5.2
United States	11.1	2.4	0.3	1.2	2.7	0.2
Oceania and other countries	3.1	1.2	0.7	0.7	0.7	0.6

Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

4.2 Multivariate analyses: Comparisons by type of prior Canadian experience

Table 3 presents regression-model estimates that compare earnings among immigrant groups starting from the landing year. When controls are added to account for characteristics at landing, including landing cohort, age, education, language ability, source region, months of school attendance in a given year, geographic location and macroeconomic conditions, immigrants with only prior Canadian skilled work experience still have much higher earnings upon landing than immigrants without any prior Canadian experience. Indeed, additional analysis shows that differences in control variables, primarily individual-level characteristics, accounted for less than one-fifth of the observed earnings advantage of immigrants with prior Canadian skilled work experience. In other words, most of the observed earnings advantage was not attributable to group differences in the control variables included.[29]

In the model with the full set of controls (Table 3), the initial earnings advantage of immigrant men with prior Canadian skilled work experience over immigrant men without any prior Canadian experience was 1.107 log points or about 202%.[30] The negative and significant interaction term between prior Canadian skilled work experience and years since landing, plus the positive and significant interaction term between prior Canadian skilled work experience and squared years since landing, suggests that the earnings advantage of immigrants with prior Canadian skilled work experience over immigrants without Canadian experience narrowed, at least in the years immediately after landing. Chart 5 plots estimated earnings differences by type of prior Canadian experience and by year since landing based on the regression model. The chart shows that the earnings advantage of immigrants with prior Canadian skilled work experience narrowed to about 0.07 log points or 7.3% by year 13 and then stabilized.

The initial advantage of immigrant men with both Canadian skilled work and study experience over those without any prior Canadian experience was 0.545 log points, or about 70%. This initial advantage was smaller than the advantage for immigrants with only prior skilled work experience, but it narrowed at a much slower rate and remained at 0.19 points by the 10th year after landing before expanding again (Chart 5). Among the remaining three groups with some prior Canadian experience, the initial earnings advantage disappeared by the 4th year after landing for those with prior Canadian non-skilled work experience, by the 14th year for those with only prior Canadian study experience, and by the 7th year for those with other prior Canadian experience. Similar patterns held among immigrant women (Table 3 and Chart 6).

29. The coefficient on the indicator for prior Canadian skilled work experience only decreased from 1.364 in the model including only the type of prior Canadian experience, years since landing, arrival cohort, and the interaction between the type of prior Canadian experience and years since landing, to 1.197 (a decrease of 12%) when adding age at landing, education, language and source region to the model. The coefficient further decreased to 1.107 when adding school attendance, location of residence and macroeconomic conditions to the model.

30. This is about a 202% difference in mean earnings, which is derived from $\exp(1.107) - 1 = 2.02$.

Table 3-1
Regression models showing earnings differences by type of Canadian experience and sex, based on years since landing — Part 1

	Men		Women	
	coefficient	robust standard error	coefficient	robust standard error
Intercept	9.832 ***	0.015	9.417 ***	0.018
Years since landing	0.196 ***	0.001	0.176 ***	0.001
Squared years since landing	-0.008 ***	0.000	-0.006 ***	0.000
Prior Canadian skilled work experience only	1.107 ***	0.006	0.786 ***	0.008
Prior Canadian skilled work and study experience	0.545 ***	0.007	0.608 ***	0.010
Prior Canadian non-skilled work experience	0.278 ***	0.016	0.252 ***	0.019
Prior Canadian study experience only	0.121 ***	0.008	0.189 ***	0.012
Other prior Canadian experience	0.359 ***	0.005	0.225 ***	0.005
Prior Canadian skilled work experience only interacted with years since landing	-0.164 ***	0.001	-0.119 ***	0.002
Prior Canadian skilled work and study experience interacted with years since landing	-0.074 ***	0.001	-0.083 ***	0.003
Prior Canadian non-skilled work experience interacted with years since landing	-0.085 ***	0.002	-0.076 ***	0.005
Prior Canadian study experience only interacted with years since landing	-0.016 ***	0.001	-0.020 ***	0.004
Other prior Canadian experience interacted with years since landing	-0.085 ***	0.001	-0.065 ***	0.001
Prior Canadian skilled work experience only interacted with squared years since landing	0.006 ***	0.015	0.005 ***	0.000
Prior Canadian skilled work and study experience interacted with squared years since landing	0.004 ***	0.001	0.004 ***	0.000
Prior Canadian non-skilled work experience interacted with squared years since landing	0.004 ***	0.000	0.003 ***	0.000
Prior Canadian study experience only interacted with squared years since landing	0.001 *	0.006	0.001 *	0.000
Other prior Canadian experience interacted with squared years since landing	0.004 ***	0.008	0.003 ***	0.000
Landing cohort (reference: 1990–1994 cohort)				
1995–1999 cohort	0.079 ***	0.018	0.025 ***	0.004
2000–2004 cohort	-0.062 ***	0.009	-0.075 ***	0.005
2005–2006 cohort	-0.117 ***	0.006	-0.143 ***	0.006
1995–1999 cohort interacted with years since landing	-0.012 ***	0.002	-0.005 ***	0.000
2000–2004 cohort interacted with years since landing	0.011 ***	0.002	0.015 ***	0.001
2005–2006 cohort interacted with years since landing	0.044 ***	0.005	0.042 ***	0.001
Spouse or dependant of principal applicant	-0.130 ***	0.003	-0.220 ***	0.002
Age at landing (reference: 45 to 54 at landing)				
Age 20 to 24 at landing	0.208 ***	0.002	0.179 ***	0.007
Age 25 to 29 at landing	0.288 ***	0.000	0.199 ***	0.006
Age 30 to 34 at landing	0.248 ***	0.000	0.181 ***	0.006
Age 35 to 39 at landing	0.185 ***	0.000	0.149 ***	0.006
Age 40 to 44 at landing	0.104 ***	0.000	0.081 ***	0.006

* significantly different from reference category ($p<0.05$)

*** significantly different from reference category ($p<0.001$)

Notes: Every model also includes source region, geographic-location fixed effects, and two macroeconomic variables.

Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Table 3-2
Regression models showing earnings differences by type of Canadian experience and sex, based on years since landing — Part 2

	Men		Women	
	coefficient	robust standard error	coefficient	robust standard error
Education at landing (reference: graduate degree)				
Secondary education or less	-0.456 ***	0.004	-0.492 ***	0.004
Trade or apprenticeship	-0.366 ***	0.004	-0.416 ***	0.005
Some postsecondary education	-0.271 ***	0.005	-0.306 ***	0.004
Bachelor's degree	-0.121 ***	0.000	-0.151 ***	0.004
Language ability (reference: not speaking English or French)				
English mother tongue	0.367 ***	0.001	0.366 ***	0.005
French mother tongue or speak French	0.018 **	0.003	0.171 ***	0.007
English or French mother tongue, bilingual	0.176 ***	0.006	0.336 ***	0.009
Other mother tongue, speak English	0.142 ***	0.004	0.154 ***	0.003
Other mother tongue, bilingual	0.150 ***	0.004	0.259 ***	0.005
Months of full-time school attendance	-0.087 ***	0.004	-0.071 ***	0.000

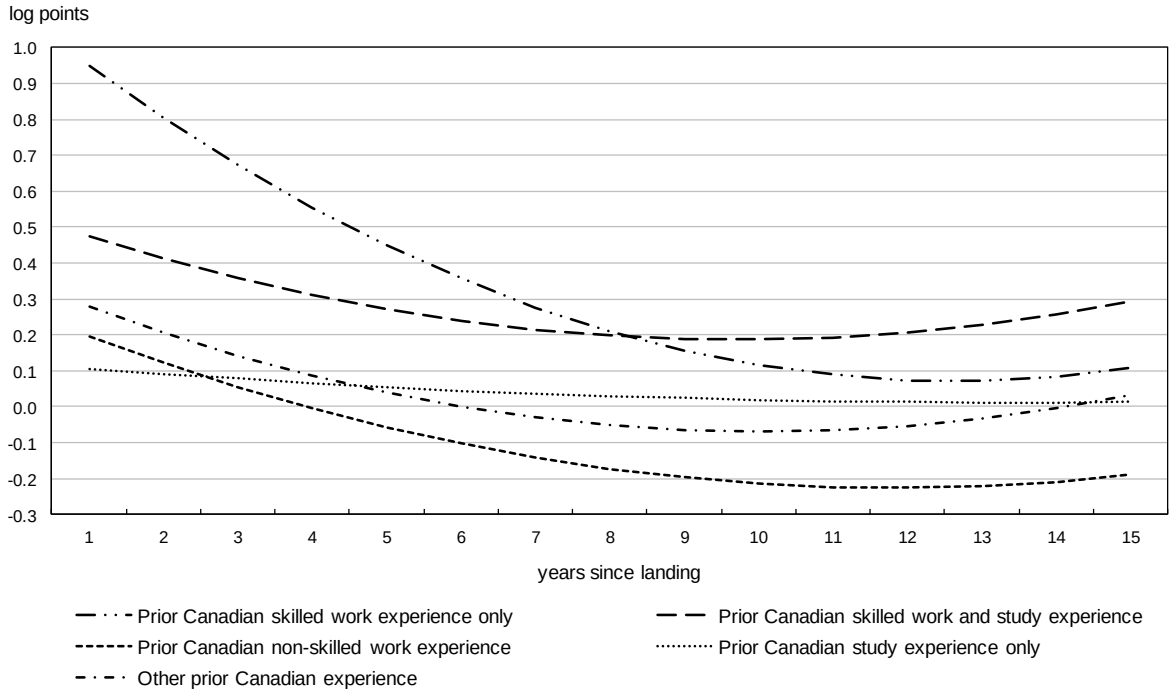
** significantly different from reference category (p<0.01)

*** significantly different from reference category (p<0.001)

Notes: Every model also includes source region, geographic-location fixed effects, and two macroeconomic variables.

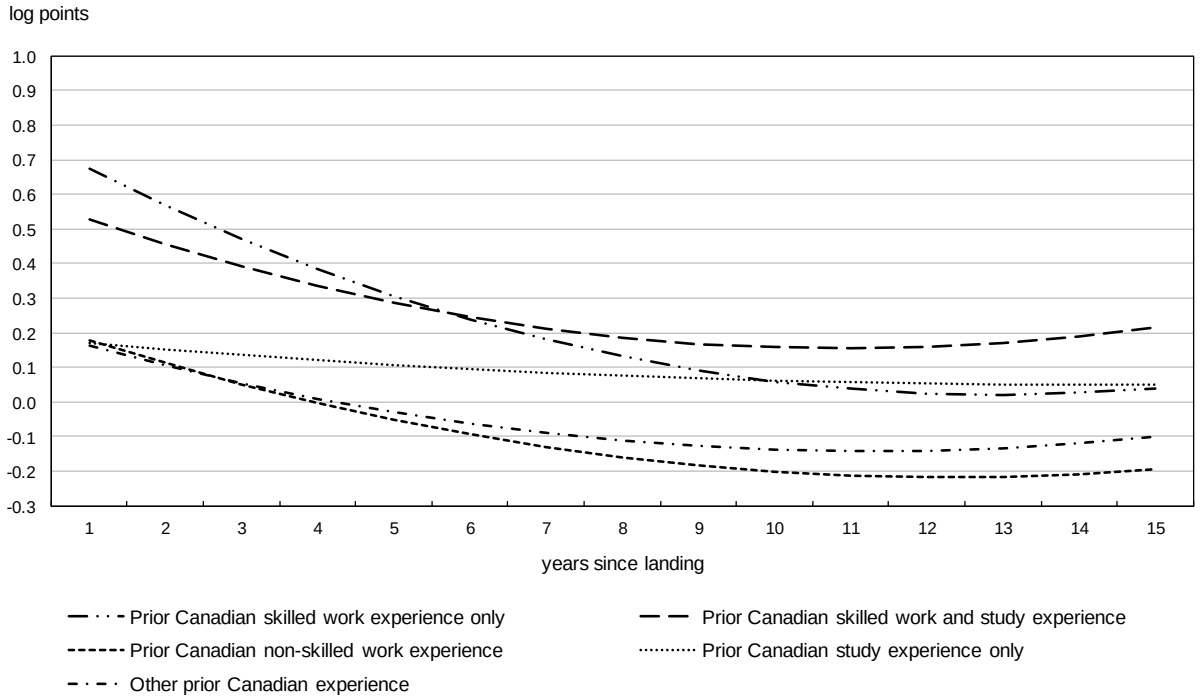
Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Chart 5
Estimated differences in log earnings with immigrant men without prior experience, by years since landing



Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Chart 6
Estimated differences in log earnings with immigrant women without prior experience, by years since landing



Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Table 4 presents regression-model estimates that compare earnings among immigrant groups starting from the arrival year. When group differences in actual years of residence in Canada and all the control variables were taken into account, immigrant men with only prior Canadian skilled work experience still had much higher initial earnings than immigrant men without any prior Canadian experience. Their initial advantage, 0.859 log points, narrowed as their years in Canada increase. The advantage decreased to around 0.13 log points by the 12th year after arrival, before starting to expand again (Chart 7). By comparison, immigrant men with other types of prior Canadian experience did not have an advantage in initial earnings over immigrant men without any prior Canadian experience. However, earnings growth after arrival tended to be stronger among immigrant men with both prior Canadian skilled work and study experience and among immigrants with only prior Canadian study experience than among immigrant men without any prior Canadian experience. Consequently, the initial negative earnings gaps of the former two groups disappeared by 11 to 13 years after arrival. There was little catch-up in the earnings growth for immigrant men with prior Canadian non-skilled work experience.

Again, similar patterns were observed among immigrant women, although the differences in initial earnings by type of prior Canadian experience were smaller among women than among men (Table 4 and Chart 8).

Table 4
Regression models showing earnings advantages of immigrant men and women with Canadian skilled work experience before permanent residence, based on years since arrival

	Men		Women	
	coefficient	robust standard error	coefficient	robust standard error
Intercept	9.631 ***	0.013	9.317 ***	0.016
Years since arrival	0.214 ***	0.001	0.185 ***	0.001
Squared years since arrival	-0.008 ***	0.000	-0.007 ***	0.000
Prior Canadian skilled work experience only	0.859 ***	0.006	0.503 ***	0.009
Prior Canadian skilled work and study experience	-0.575 ***	0.010	-0.247 ***	0.012
Prior Canadian non-skilled work experience	-0.113 ***	0.021	-0.123 ***	0.020
Prior Canadian study experience only	-0.824 ***	0.012	-0.525 ***	0.014
Other prior Canadian experience	-0.036 ***	0.007	-0.046 ***	0.006
Prior Canadian skilled work experience only interacted with years since arrival	-0.121 ***	0.001	-0.086 ***	0.002
Prior Canadian skilled work and study experience interacted with years since arrival	0.036 ***	0.002	0.004	0.003
Prior Canadian non-skilled work experience interacted with years since arrival	-0.073 ***	0.005	-0.062 ***	0.005
Prior Canadian study experience only interacted with years since arrival	0.080 ***	0.004	0.048 ***	0.004
Other prior Canadian experience interacted with years since arrival	-0.055 ***	0.002	-0.049 ***	0.001
Prior Canadian skilled work experience only interacted with squared years since arrival	0.005 ***	0.000	0.004 ***	0.000
Prior Canadian skilled work and study experience interacted with squared years since arrival	0.002 ***	0.000	0.002 ***	0.000
Prior Canadian non-skilled work experience interacted with squared years since arrival	0.004 ***	0.000	0.003 ***	0.000
Prior Canadian study experience only interacted with squared years since arrival	-0.001 ***	0.000	-0.001 **	0.000
Other prior Canadian experience interacted with squared years since arrival	0.004 ***	0.000	0.003 ***	0.000

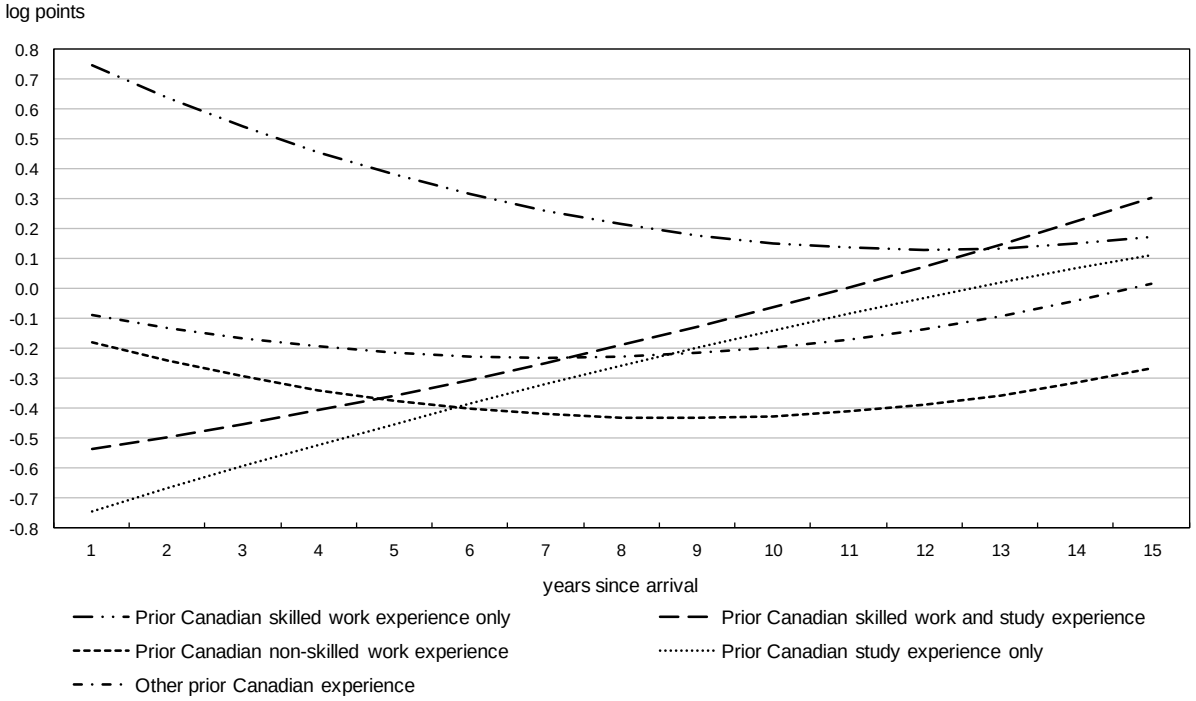
** significantly different from reference category (p<0.01)

*** significantly different from reference category (p<0.001)

Note: Every model also includes the same variables as those in Table 3.

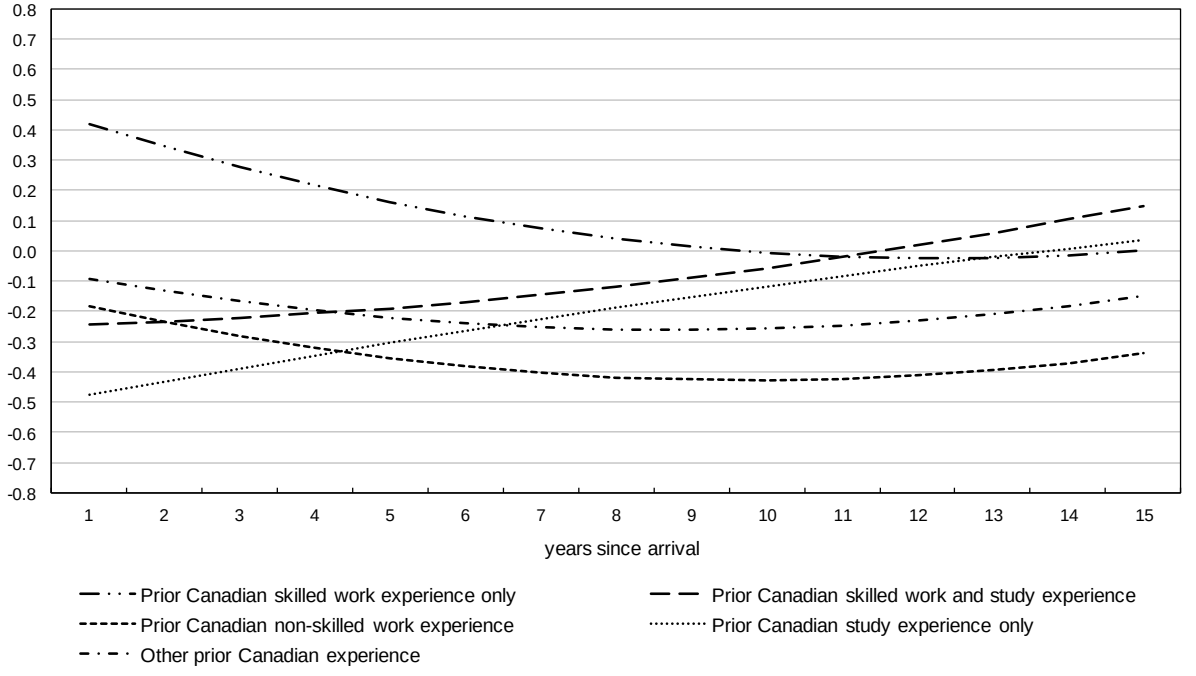
Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Chart 7
Estimated differences in log earnings with immigrant men without prior experience, by years since arrival



Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Chart 8
Estimated differences in log earnings with immigrant women without prior experience, by years since arrival



Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

Overall, immigrants who had prior Canadian skilled work experience had a very large initial earnings advantage over immigrants who were selected directly from abroad, regardless of whether they were compared from the year of landing or the year of arrival. Immigrants who initially came as foreign students, either with or without prior Canadian skilled work experience, did not have an earnings advantage over immigrants who were selected directly from abroad when they were compared from the year of arrival, but an advantage existed by the time of landing. Former foreign students also tended to have higher earnings growth over time.

4.3 Multivariate analyses: Earnings return of an extra year of prior Canadian experience

While the above analyses compare earnings by type of prior Canadian experience, this section further quantifies the effect of prior Canadian experience by examining the earnings return of an extra year of prior Canadian experience at the time of landing and how long any such effect lasts. Table 5 presents the results. As in Table 3, where the group comparison starts from the year of landing, immigrants with an extra year of prior Canadian experience had higher earnings than immigrants without any prior Canadian experience at the time of landing. The positive effect was largest among immigrants with only prior Canadian skilled work experience, 0.248 log points or 28% for an extra year of such experience. This effect decreased over time and reached its lowest point at 0.03 log points or 3% by the 12th year after landing, before expanding again.

Table 5
Regression models showing earnings advantages associated with an extra year of Canadian skilled work experience before permanent residence, by sex, based on years since landing

	Men		Women	
	coefficient	robust standard error	coefficient	robust standard error
Intercept	9.931 ***	0.016	9.443 ***	0.018
Years since landing	0.188 ***	0.001	0.170 ***	0.001
Squared years since landing	-0.007 ***	0.000	-0.006 ***	0.000
Years of prior Canadian skilled work experience only	0.248 ***	0.002	0.227 ***	0.002
Years of prior Canadian non-skilled work experience	0.071 ***	0.007	0.077 ***	0.007
Years of prior Canadian study experience only	0.004	0.002	0.031 ***	0.002
Years of other prior Canadian experience	0.074 ***	0.002	0.062 ***	0.002
Years of prior Canadian skilled work experience only interacted with years since landing	-0.036 ***	0.000	-0.032 ***	0.001
Years of prior Canadian non-skilled work experience interacted with years since landing	-0.025 ***	0.002	-0.029 ***	0.002
Years of prior Canadian study experience only interacted with years since landing	0.000	0.001	-0.003 ***	0.001
Years of other prior Canadian experience interacted with years since landing	-0.019 ***	0.000	-0.018 ***	0.000
Years of prior Canadian skilled work experience only interacted with squared years since landing	0.002 ***	0.000	0.001 ***	0.000
Years of prior Canadian non-skilled work experience interacted with squared years since landing	0.001 ***	0.000	0.001 ***	0.000
Years of prior Canadian study experience only interacted with squared years since landing	0.000	0.000	0.000	0.000
Years of other prior Canadian experience interacted with squared years since landing	0.001 ***	0.000	0.001 ***	0.000

*** significantly different from reference category (p<0.001)

Note: Every model also includes the same variables as those in Table 3.

Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

The effect of an extra year of other types of Canadian experience was much smaller. An extra year of prior Canadian non-skilled work experience was associated with an earnings advantage of 0.071 log points or 7.3% for immigrant men at the time of landing compared with immigrant men without any prior Canadian experience, but this effect decreased rapidly and became negative four years after landing. Similarly, an extra year of other prior Canadian experience was associated with about 0.075 log points or 7.8% at the time of landing, and this effect decreased gradually with time and disappeared about six years after landing. An extra year of prior Canadian study experience had no significant positive effect at the time of landing and this remained true over time.[31]

For immigrant women, the initial effects of an extra year of prior Canadian skilled work experience, non-skilled work experience, or other Canadian experience tended to be slightly smaller than the corresponding effects among immigrant men. However, the initial effects of prior Canadian study experience were much larger among women than among men (Table 5).

31. A follow-up study using a dataset with more detailed information shows that temporary residents with study permits are a heterogeneous group. Those who came to Canada to pursue postsecondary education and obtained advanced degrees tend to have high earnings after becoming landed immigrants (Lu and Hou 2015).

4.4 Multivariate analyses: Principal applicants in the Economic Class and their spouses

The above analyses cover all economic immigrants and thus provide a broad picture of differences in earnings by type of prior Canadian experience. This section replicates the same analyses for principal applicants in the Economic Class and their spouses. In the study sample, principal applicants comprise 85% of the economic immigrants among men but only 43% among women, reflecting the fact that men are more likely to be the principal applicant than women. Principal applicants in the Economic Class were directly evaluated under the points system of immigrant selection with the expectation that their human capital factors and other adaptability characteristics would increase their potential to succeed in the Canadian labour market. An analysis focused on this group may reduce the possible confounding effects of unobserved factors among principal applicants, their spouses and their dependants. Furthermore, principal applicants reported their intended occupation in their applications. The addition of this variable serves to control for possible group differences in knowledge about the host-country labour market and for allocation in high-paying occupations.[32] Information on actual occupation after landing is not available in the data file.

Tables 6-1 and 6-2 present the results of the models examining the overall effects of prior Canadian experience and the effects of an extra year of prior Canadian experience for principal applicants and for spouses separately. To save space, the tables present only the coefficients of variables representing types of Canadian experiences, years since landing, and the interaction between the two, although all the control variables were included in the model estimation. Overall, the results for principal applicants and spouses are broadly similar. The main difference is that the effects of prior Canadian work experience were stronger among principal applicants than among spouses. This pattern holds for both men and women. It is possible that when both members of a couple had prior Canadian work experience, the one who was more successful was more likely to apply as the principal applicant. Another possibility is the difference in the degree of employer selection. Temporary foreign workers can bring their spouses to Canada. These spouses can obtain work permits under certain circumstances and thus gain Canadian work experience. However, their work permits are not initiated by the employer, so they are not subject to the same level of labour market institutional selection as the original temporary foreign workers.

Controlling for intended occupation among principal applicants makes little difference to the positive effects of prior Canadian skilled work experience. It is clear that the higher initial earnings associated with prior Canadian skilled work experience are not due to group differences in intended occupation. However, after controlling for intended occupation, the positive effect of prior Canadian non-skilled work experience at the time of landing became slightly larger. For instance, the earnings return of an extra year of prior Canadian non-skilled work experience among male principal applicants was estimated at 0.072 log points without controlling for intended occupation, but increased to 0.083 log points after controlling for it. This suggests that immigrants with prior Canadian non-skilled work experience were disadvantaged by their intended occupation relative to immigrants without any prior Canadian experience.

32. For many immigrants, intended occupations are not the same as occupations before immigration, and many immigrants cannot find a job in their intended occupation (Goldmann, Sweetman and Warman 2009). However, the trends in intended occupation tend to respond to Canadian labour market demands. For instance, the share of immigrants who intended to work as IT professionals increased drastically in the late 1990s but decreased after the IT bust in the early 2000s. Furthermore, immigrants who intended to work in high-skill occupations had significantly higher earnings than other immigrants even after differences in observed human capital characteristics are taken into account (Picot and Hou 2009).

Table 6-1
Regression models for principal applicants in the economic class and their spouses — Overall effect of prior Canadian experience

	Men		Women	
	Principal applicants	Spouses	Principal applicants	Spouses
	coefficient			
Intercept	9.984 ***	9.455 ***	9.689 ***	9.002 ***
Years since landing	0.196 ***	0.198 ***	0.182 ***	0.176 ***
Squared years since landing	-0.008 ***	-0.008 ***	-0.007 ***	-0.006 ***
Prior Canadian skilled work experience only	1.137 ***	0.746 ***	0.949 ***	0.553 ***
Prior Canadian skilled work and study experience	0.551 ***	0.482 ***	0.657 ***	0.448 ***
Prior Canadian non-skilled work experience	0.323 ***	0.188 ***	0.430 ***	0.103 **
Prior Canadian study experience only	0.154 ***	0.162 ***	0.225 ***	0.244 ***
Other prior Canadian experience	0.418 ***	0.173 ***	0.385 ***	0.162 ***
Prior Canadian skilled work experience only interacted with years since landing	-0.168 ***	-0.109 ***	-0.154 ***	-0.074 ***
Prior Canadian skilled work and study experience interacted with years since landing	-0.076 ***	-0.055 ***	-0.098 ***	-0.035 ***
Prior Canadian non-skilled work experience interacted with years since landing	-0.088 ***	-0.052 ***	-0.103 ***	-0.038 ***
Prior Canadian study experience only interacted with years since landing	-0.020 ***	-0.003	-0.027 ***	-0.020 *
Other prior Canadian experience interacted with years since landing	-0.094 ***	-0.030 ***	-0.098 ***	-0.041 ***
Prior Canadian skilled work experience only interacted with squared years since landing	0.007 ***	0.005 ***	0.006 ***	0.003 ***
Prior Canadian skilled work and study experience interacted with squared years since landing	0.004 ***	0.003 ***	0.004 ***	0.002 ***
Prior Canadian non-skilled work experience interacted with squared years since landing	0.004 ***	0.001	0.004 ***	0.001 *
Prior Canadian study experience only interacted with squared years since landing	0.001 **	0.000	0.001 **	0.001
Other prior Canadian experience interacted with squared years since landing	0.005 ***	0.001 ***	0.004 ***	0.002 ***

* significantly different from reference category (p<0.05)

** significantly different from reference category (p<0.01)

*** significantly different from reference category (p<0.001)

Notes: Every model also includes the same variables as those in Tables 3 to 5. For principal applicants, the models also include intended occupation.

Table 6-2
Regression models for principal applicants in the economic class and their spouses — The effect of an extra year of prior Canadian experience

	Men		Women	
	Principal applicants	Spouses	Principal applicants	Spouses
	coefficient			
Intercept	10.096 ***	9.479 ***	9.768 ***	9.012 ***
Years since landing	0.186 ***	0.197 ***	0.168 ***	0.174 ***
Squared years since landing	-0.007 ***	-0.008 ***	-0.006 ***	-0.006 ***
Years of prior Canadian skilled work experience only	0.248 ***	0.206 ***	0.232 ***	0.188 ***
Years of prior Canadian non-skilled work experience	0.083 ***	0.064 **	0.124 ***	0.027
Years of prior Canadian study experience only	0.008 ***	0.019 *	0.032 ***	0.050 ***
Years of other prior Canadian experience	0.080 ***	0.062 ***	0.076 ***	0.067 ***
Years of prior Canadian skilled work experience only interacted with years since landing	-0.036 ***	-0.029 ***	-0.035 ***	-0.024 ***
Years of prior Canadian non-skilled work experience interacted with years since landing	-0.025 ***	-0.020 **	-0.034 ***	-0.013 **
Years of prior Canadian study experience only interacted with years since landing	0.000	-0.002	-0.003 **	-0.002
Years of other prior Canadian experience interacted with years since landing	-0.020 ***	-0.013 ***	-0.020 ***	-0.016 ***
Years of prior Canadian skilled work experience only interacted with squared years since landing	0.002 ***	0.001 ***	0.001 ***	0.001 ***
Years of prior Canadian non-skilled work experience interacted with squared years since landing	0.001 ***	0.000	0.002 ***	0.000
Years of prior Canadian study experience only interacted with squared years since landing	0.000	0.000	0.000	0.000
Years of other prior Canadian experience interacted with squared years since landing	0.001 ***	0.001 ***	0.001 ***	0.001 ***

* significantly different from reference category (p<0.05)

** significantly different from reference category (p<0.01)

*** significantly different from reference category (p<0.001)

Notes: Every model also includes the same variables as those in Tables 3 to 5. For principal applicants, the models also include intended occupation.

Source: Statistics Canada, Longitudinal Immigration Database, 1982 to 2011.

5 Conclusion and discussion

Temporary mobility has emerged as a major form of international migration, and many Western developed countries have relied on temporary foreign workers to address labour shortage. Such workers have become an important 'feeder pool' for permanent immigration to Canada. Even in the 1980s and 1990s, Canada already selected a substantial share of permanent residents from among former temporary residents, including those with work or study permits. The acceptance of temporary foreign workers and students as permanent residents increased during the 2000s with the expansion of the provincial nominee programs and the introduction of the Canadian Experience Class (CEC).

When foreign temporary workers become permanent residents, not all types of prior host-country experience have the same effect on their post-migration labour market outcomes. This study clearly demonstrates that immigrants with prior Canadian skilled work experience had a very large initial earnings advantage over immigrants who were selected directly from abroad, regardless of whether they were compared from the year of landing or the year of arrival. Less than one-fifth of the earnings advantage of immigrants with prior Canadian skilled work experience is attributable to their higher education level, to their stronger English skills, and to the fact that more of them come from the United States and Northern and Western Europe. It appears that their advantage is related in large part to labour market institutional selection in terms of the role of employers in selecting foreign workers and of subsequent on-the-job screening, and to self-selection among skilled temporary foreign workers. The earnings advantage of immigrants with prior Canadian skilled work experience over immigrants without any prior Canadian experience narrowed considerably in the initial years after landing as the latter group experienced faster earnings growth, but the advantage did not disappear and, if anything, began to expand after the first 13 years.

Immigrants with both prior Canadian skilled work and study experience also had superior labour market outcomes after landing. They had a large initial earnings advantage over immigrants without any prior Canadian experience, and the advantage narrowed gradually in the first 10 years after landing, but expanded subsequently. Although their initial earnings advantage at the time of landing was smaller than that of immigrants with only prior Canadian skilled work experience, their earnings growth was more rapid. They surpassed immigrants with only prior skilled work experience within 10 years after landing. The group of immigrants with both skilled work and study experience is similar to the stream of the CEC, introduced in 2008, that allowed foreign students who had studied in Canada for at least two years, obtained postsecondary-level educational credentials and had at least one year of skilled work experience to apply for landed immigrant status. This study shows that, among individuals with prior Canadian skilled work experience, having studied in Canada makes a large difference in terms of initial earnings at the time of landing and subsequent earnings growth.

By comparison, immigrants with prior Canadian study experience but without prior Canadian skilled work experience had only a small earnings advantage at the time of landing over immigrants without any prior Canadian experience, and this advantage was entirely attributable to their longer stay in Canada. This advantage narrowed to near zero by about 10 years after landing and remained small in subsequent years. These former foreign students were much less successful than foreign students who also had prior Canadian skilled work experience, even though the former were more likely to have postgraduate degrees. These findings are consistent with those of Lowell and Avato (2014) for the United States and of Hawthorne and To (2014) for Australia. Lowell and Avato (2014) argue that in spite of the common perception that foreign students in the United States are the best and brightest from the rest of the world, they may not be as well selected as temporary foreign workers in their ability to fit into the U.S. labour market. Similarly, Hawthorne and To (2014) discuss challenges foreign students face in Australia.

The group that had the lowest earnings was immigrants with only non-skilled work experience in Canada. This group had significantly lower earnings at the time of landing and slower earnings growth after landing than did immigrants without any prior Canadian experience. Overall, immigrants who were initially admitted to Canada as temporary residents to fill low-skilled jobs fare most poorly in the labour market over the longer term. This result is based on data from a period when non-skilled foreign temporary workers only accounted for a small fraction of temporary foreign workers. The large shift in temporary foreign worker programs towards low-skilled labour that occurred in the mid-2000s may or may not result in different outcomes.

Overall, this study makes an important qualification to the role of employers and on-the-job screening in the immigrant selection process. The U.S. literature, based mostly on the experience of highly skilled temporary foreign workers, suggests that labour market institutional selection can facilitate the match between immigrant job skills and labour market demand. This is consistent with the results of this study for immigrants with prior Canadian skilled work experience. Specifically, this study finds that foreign temporary workers with Canadian skilled work experience do better than immigrants without any prior Canadian experience in the short and long term. However, the results for immigrants with prior Canadian non-skilled work experience highlight some potential limitations of employer selection, and the effects of employer selection may vary across industrial sectors (Ferrer, Picot and Riddell 2014; Foster 2012). Temporary foreign workers who are recruited to work in low-wage jobs may have difficulty moving to high-paying jobs after becoming landed immigrants.

In terms of foreign students, just as Canadian-born students with Canadian education have divergent labour market outcomes, so too do international students. Consistent with previous U.S., Australian and Canadian studies, this study finds that host-country education in and of itself does not necessarily provide a clear advantage to immigrants; it is most likely to do so when accompanied by skilled work experience.

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