

Catalogue no. 11F0019M — No. 402
ISSN 1205-9153
ISBN 978-0-660-24168-5

Analytical Studies Branch Research Paper Series

How Temporary Were Canada's Temporary Foreign Workers?

by Elena Prokopenko and Feng Hou

Release date: January 29, 2018



 Statistics Canada Statistique Canada

Canada 

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, www.statcan.gc.ca.

You can also contact us by

email at STATCAN.infostats-infostats.STATCAN@canada.ca

telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following numbers:

- Statistical Information Service 1-800-263-1136
- National telecommunications device for the hearing impaired 1-800-363-7629
- Fax line 1-514-283-9350

Depository Services Program

- Inquiries line 1-800-635-7943
- Fax line 1-800-565-7757

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under “Contact us” > “Standards of service to the public.”

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2018

All rights reserved. Use of this publication is governed by the Statistics Canada [Open Licence Agreement](#).

An HTML version is also available.

Cette publication est aussi disponible en français.

How Temporary Were Canada's Temporary Foreign Workers?

by

Elena Prokopenko and Feng Hou

Social Analysis and Modelling Division
Statistics Canada

11F0019M No. 402
ISSN 1205-9153
ISBN 978-0-660-24168-5

January 2018

Analytical Studies Branch Research Paper Series

The Analytical Studies Branch Research Paper Series provides for the circulation of research conducted by Analytical Studies Branch staff and collaborators. The Series is intended to stimulate discussion on a variety of topics, such as labour, immigration, education and skills, income mobility, well-being, aging, firm dynamics, productivity, economic transitions, and economic geography. Readers of the Series are encouraged to contact the authors with their comments and suggestions.

All the papers in the Analytical Studies Branch Research Paper Series go through institutional and peer review to ensure that they conform to Statistics Canada's mandate as a governmental statistical agency and adhere to generally accepted standards of good professional practice.

Acknowledgements

The authors would like to thank Ying Gai, Luin Goldring, Delphine Nakache, and analysts at Immigration, Refugees and Citizenship Canada and Employment and Social Development Canada for advice and comments on an earlier version of this paper. Any errors are the responsibility of the authors.

Table of contents

Abstract	5
Executive summary	6
1 Introduction	7
2 Theoretical, empirical and policy background	7
2.1 Theoretical explanations of return migration.....	7
2.2 Empirical evidence	8
2.3 Canada’s temporary labour migration program	9
2.4 The current study	10
3 Data, measures and methods	11
3.1 Data	11
3.2 Measures	12
3.3 Methods	13
4 Results	14
4.1 The characteristics of Canada’s temporary foreign workers during the 1990s and 2000s	14
4.2 Canadian residence status over time	16
4.3 Multivariate results	21
5 Conclusion and discussion	25
6 Appendix	27
References	28

Abstract

Temporary foreign worker programs have become an increasingly important component of international migration to Western developed countries. However, there is little knowledge on how long foreign workers stay in the host country and what determinants are associated with their migratory trajectories. Using a national longitudinal administrative dataset of temporary foreign workers (TFWs) in Canada, this study examines their length and type of stay in Canada. It further examines the likelihood of staying given individual demographic characteristics, source-country attributes, host-country institutional factors and local community conditions. The results show that the majority of TFWs stayed in Canada only for a short period, while the majority of those who stayed for a long period obtained permanent resident status. Host-country institutional constraints play a dominant role in determining the length and type of stay of TFWs in Canada.

Executive summary

Temporary foreign workers (TFWs) have been playing a growing role in Canada's labour force and immigration system. The length and type of stay of TFWs in Canada have strong implications for the country's immigration and labour policies. This study assesses the distribution of temporary workers among possible post-arrival residential trajectories to determine which TFWs are more likely to return to their source country and which are more likely to stay in Canada. Specifically, this study examines the impact of individual characteristics, source-country attributes, host-country institutional factors and local community conditions on the probabilities of TFWs leaving, transitioning to permanent residence or continuing their temporary stay in Canada.

Data for this study are from the Temporary Residents File, which contains demographic and permit-related information on all temporary residents admitted to Canada since 1980. In this study, TFWs are defined as individuals aged 18 to 64 at arrival who received a work permit between 1990 and 2009 and whose first admission to Canada was primarily for work purposes. The analysis excludes TFWs who arrived after 2009 to ensure that the TFWs included in the study were observed for at least five years before the most recent year of observation (2014).

Results suggest that the majority of TFWs in Canada were temporary, meaning that most left within the first two years after arrival. However, the tendency to stay longer has increased among more recent arrivals. The share of remaining TFWs declined the most in the first two years after the first work permit. By the fifth year, the decline started to level off, when 13% of the 1995-to-1999 cohort and 37% of the 2005-to-2009 cohort still remained in Canada. By the 10th year, the share of TFWs remaining in Canada stabilized at about 11% for the 1995-to-1999 cohort and 18% for the 2000-to-2004 cohort. The overwhelming majority of those who stayed over the long term obtained permanent resident status.

Government regulations played the leading role in affecting the length and type of stay of TFWs. There were very large differences in the rate of stay in Canada by arrival cohort. These cohort differences were consistent with Canada's increased reliance on TFWs and the expanded pathways for TFWs to gain permanent residence. Work permit categories were also major indicators of the length and type of stay, even after other predictors were controlled for in a multivariate analysis. This suggests that the terms and conditions attached to most work permit types function mostly independently of individual characteristics, source-country attributes and local economic and social conditions.

TFWs from countries with lower levels of economic development and social stability were more likely to stay longer in Canada as temporary residents or to become permanent residents. However, many of the differences by source country were accounted for by work permit types. Countries with low levels of economic development and social stability were the main sources of TFWs in the Live-in Caregiver Program, Seasonal Agricultural Workers Program, and Low-Skill Pilot. TFWs in all of these programs had a high tendency to stay longer or come back after leaving for a few months.

Individual characteristics (including age and sex), regional unemployment rates and local ethnic concentration had a relatively weak association with the length and type of stay in Canada when work permit type and source-country attributes were considered.

1 Introduction

Global labour movement has intensified, diversified and become more fluid. Many Western developed countries have established institutional arrangements that improve access to a global labour pool. Although these arrangements are meant to be temporary, many temporary foreign workers (TFWs) go on to become long-term residents in the host countries (Martin 2001). Many TFWs intend to engage in a “two-step migration” process, through which they first come to the host country on temporary work permits, then find ways to obtain permanent resident status (Khoo, Hugo and MacDonald 2008; Nakache and Dixon-Perera 2015; Nakache and Kinoshita 2010). Some host countries, particularly Australia, Canada and the United States, have established pathways for TFWs to transition to legal permanent residence (Gregory 2014; Hou and Bonikowska 2016; Lowell and Avato 2014). While some TFWs transition to permanent resident status, others prolong their stay by extending their work permits or moving between authorized temporary categories (Goldring and Landolt 2012).

The rate and length of stay of TFWs can strongly influence the host country’s immigration and labour policies. While annual “stock” and “flow” statistics of TFWs are published by Immigration, Refugees and Citizenship Canada (IRCC), little is known about the number of TFWs who have extended their stay as temporary or permanent residents, and how many have left. Understanding the extent and characteristics of return migration among temporary migrants is essential for evidence-based policy making, given the rapid growth of temporary migration to Canada (Government of Canada 2015; CIC 2014).

To address these considerations, this study assesses the distribution of TFWs among possible post-arrival residential trajectories, determining which TFWs are more likely to stay in Canada. Specifically, this study examines the impact of individual characteristics, source-country attributes, host-country institutional factors and local community conditions to determine the probabilities of TFWs transitioning to permanent residence or continuing their temporary stay in Canada.

This paper is organized into five sections. Section 2 reviews the literature on theoretical explanations and empirical studies of return migration, and on institutional arrangements of TFWs in Canada. Section 3 contains a discussion on the data sources, measures and analytical approaches. Section 4 presents descriptive statistics and results of multivariate analyses. Section 5 presents the conclusions of the paper.

2 Theoretical, empirical and policy background

2.1 Theoretical explanations of return migration

A growing body of literature has expanded the scope of migration research, looking beyond the first migration event to subsequent movements—return migration to the individual’s country of origin, onward migration to a third country, and a circular migration pattern of frequent moves between two countries. Return migration has several theoretical underpinnings (for an overview, see Budnik 2011; Cassarino 2004; Massey and Espinosa 1997). Early economic theories focus on the decision to return as a means to maximize financial returns (Sjaastad 1962; Stark and Bloom 1985). These theories suggest that a potential migrant’s decision to leave the host country is based on a balance of costs and benefits (Borjas and Bratsberg 1996; Dustmann 2003).

More recent structural theories consider contextual dimensions of return migration, such as institutional arrangements, and value and power structures in the source country that affect how return migrants use the skills and capital they gain abroad (Cassarino 2004; Callea 1986).

In addition, political stability, conflict and wars also challenge the ability of return migrants to invest savings from abroad (Borjas and Bratsberg 1996). How much capital they gained abroad matters to migrants as much as whether and how they would benefit from it back home.

The transnational theory posits that migrants maintain a simultaneous sense of belonging to both the sending and host societies through so-called transnational practices (Waldinger 2015). While some sending states develop policies that engage the diaspora and compel their return (Faist 2010), many migrants keep abreast of developing opportunities and labour market conditions that are favourable for return to their country (Budnik 2011; Cassarino 2004). Diasporic communities can also facilitate the social and legal integration of new entrants (Castles 2002), curbing return.

While many theories on permanent residents examine reasons for return, other theories explore why temporary migrants who are supposedly bound to return may stay instead. Ruhs (2006) summarized how temporary labour programs can promote permanent settlement of temporary migrants: employer dependence on TFWs can become entrenched in the economy; recruitment and social networks that are established over time can perpetuate and facilitate permanent migration; the judiciary and civil society of liberal democracies can pressure states to extend rights and freedoms to migrants; and workers can exercise their own agency to choose temporary or permanent residence, changing their intentions after experiencing the host country. Balaz, Williams and Kollar (2004) proposed that temporary workers may intend for temporary migration to be the first step in a permanent migration from the outset. They also posit that even migrants who intend to eventually leave may want to use permanent resident status to expand employment and mobility opportunities.

The role of host-country institutional factors is unquestionably unique to temporary migrants. After arrival, the decision of permanent residents to leave largely depends on their own intentions. By contrast, the duration of stay among TFWs is jointly determined by both the worker's intentions and the host country's policies and regulations. Specifically, countries regulate the presence of temporary migrants with visa restrictions, qualifying some migrants more than others to extend their stay or apply for permanent residence under the conditions attached to their work permits. Host-country institutional arrangements dictate the legal terms on which temporary migrants can remain in the country, and can compel return migration regardless of individual intentions.

2.2 Empirical evidence

Common patterns in subsequent international mobility (return, onward and circular migration) of the foreign-born population in Western countries were identified from a large body of empirical studies. First, these studies show that the probability of return is highest initially after arrival. This probability declines rapidly at first, then eventually smooths out (Aydemir and Robinson 2008; Bijwaard, Schluter and Wahba 2014; Bratsberg, Raaum and Sørli 2007; Dustmann and Görlach 2015; Nekby 2006). Second, studies show that outmigration is non-random along several individual characteristics (e.g., Constant and Massey 2002; Borjas and Bratsberg 1996; Aydemir and Robinson 2008; Nekby 2006). For instance, Constant and Massey (2002) found that German language fluency reduced the probability of return migration in Germany. Third, the rate of return among migrants also depends on the socioeconomic and political situations of the source country (Borjas and Bratsberg 1996; Bratsberg, Raaum and Sørli 2007; Massey and Espinosa 1997).

To date, most studies of return migration have focused on foreign-born citizens, particularly permanent residents, of a country. To the knowledge of the authors, no large-scale quantitative analyses have been conducted of the return migration of TFWs. Temporary workers are difficult to identify in the large bodies of administrative data that do not contain the timing of outmigration and the associated covariates. Most studies on temporary residents rely on small-scale surveys (e.g., Massey and Espinosa 1997). Several small-scale and qualitative studies that focus on subsequent intentions of temporary migrants find strong support for a “two-step migration”

process, wherein temporary migration is seen as a precursor to permanent settlement (Khoo, Hugo and MacDonald 2008; Nakache and Dixon-Perera 2015). In a survey of high-skilled temporary workers in Australia, Khoo, Hugo and MacDonald (2008) showed that more than half of the workers who came to Australia intended to eventually settle permanently, and more than half of those who had no such intentions still applied or intended to apply for permanent residence after arriving. Similarly, Nakache and Dixon-Perera (2015) found from their interviews and focus group discussions with 99 participants that although not all migrants arrived in Canada with the intention to stay permanently, many workers changed their minds once in the country.

2.3 Canada's temporary labour migration program

In Canada, government policies and regulations structure the options for temporary residents remaining in Canada as either temporary or permanent. There are separate streams of temporary work permits that each targets specific industries, skill levels or countries involved in international agreements with Canada. Transitioning to permanent residence is possible through several immigration programs, each with its own criteria of acceptance. These institutional factors play an important role in the rate and duration of stay among TFWs.

Since 2014, various streams of temporary work permits have been organized into two overarching programs: the Temporary Foreign Worker Program (TFWP) and the International Mobility Program (IMP).

The goal of the TFWP is to fill short-term labour shortages. It is a “last resort for employers to fill jobs for which qualified Canadians are not available” (Government of Canada 2015, p. 1). It includes two of Canada's most long-standing programs—the Seasonal Agricultural Workers Program (SAWP) and the Live-in Caregiver Program (LCP)—which allow Canadian employers to hire agricultural and domestic workers on a temporary basis.¹ The Stream for Lower-Skilled Occupations, formerly and for the purposes of this report referred to as the Low-Skill Pilot (LSP), was introduced in 2002 and expanded substantially in the late 2000s. Other TFWP participants are mostly high-skilled workers.

Employers who hire workers through the TFWP must submit a labour market impact assessment (LMIA), administered by Employment and Social Development Canada (ESDC). The LMIA is designed to ensure that the employer has made all attempts to hire a Canadian worker for the position, in addition to fulfilling other labour market protecting criteria (Elgersma 2014). Most permits are job-, location- and employer-specific, which limits workers' mobility once they are in Canada (Government of Canada 2015).

The IMP, the second overarching temporary worker program, aims “to advance Canada's broad economic and cultural national interest” (Government of Canada 2015, p. 1) and is composed of several different programs.² The international agreements program targets nationals of countries with which Canada has signed agreements, such as the North American Free Trade Agreement (NAFTA). The reciprocal employment program includes youth work-exchange programs and facilitates exchanges of employees (e.g., athletes and coaches) or organizations that demonstrate reciprocity by employing Canadian workers abroad (IRCC 2014). The significant benefit program helps entrepreneurs, self-employed individuals and intra-company transferees enter the country. The research- and studies-related work permit holders include postdoctoral fellows, international students completing co-op terms, foreign medical residents who receive work permits with the

1. The size and importance of the LCP have been significantly reduced since changes to the program were made near the end of 2014 under ministerial instructions.

2. This study uses the subcategories used by IRCC until 2012. After 2012, the IMP was reorganized into three main subcategories: agreements, Canadian interests, and other IMP work permit holders. Under Canadian interests, there are four subgroups: significant benefit, reciprocal employment, competitiveness and public policy, and charitable or religious work.

educational institution as their employer, and former international students in Canada who hold postgraduate work permits (IRCC 2015). Other IMP programs include permits for spouses of IMP program participants, performing artists visiting Canada, and emergency repair and service specialists. Unlike the TFWP, IMP permits do not require a LMIA and thus are not directly tied to current labour market conditions. In most cases, IMP workers and their spouses can receive open work permits, allowing them to easily change employers (Government of Canada 2015).

TFWs may extend their stay by either becoming permanent residents or extending their temporary status, but the options for each stream can be very different. At two extremes are the SAWP and LCP. While all live-in caregivers were allowed to apply for permanent residence after two years of full-time work as domestic workers,³ SAWP workers have no dedicated stream for transition and may be employed only for a maximum period of eight months per year, after which they must leave Canada (Government of Canada 2016; Hennebry 2014). However, SAWP workers may return to Canada each year on a new LMIA and work permit (IRCC 2016).

In general, high-skilled TFWs in both the TFWP and the IMP have more pathways to become permanent residents because Canada's immigrant selection system rewards candidates for human capital assets such as education, Canadian work experience and official language abilities. For low-skilled workers, the primary pathway to permanent residence is through the provincial or territorial nominee program. Each province or territory with such a program⁴ creates criteria and programs for admission; unlike the federal streams, some provincial or territorial nominee programs aid transition for low-skilled workers if there is demand in the local labour market (see detailed discussions by Nakache and Blanchard 2014; Nakache and D'Aoust 2012).

2.4 The current study

Drawing on theoretical explanations and previous studies on return migration of immigrants, this study considers four sets of determinants for how long TFWs stay and whether they extend their stay by transitioning to permanent residence or remain temporary residents. The determinants are as follows: individual demographic characteristics, source-country socioeconomic environment, host-country institutional factors, and local destination factors.

With regard to individual demographic characteristics, younger TFWs may be more likely to seek longer residence in Canada. This is because younger TFWs are less attached to their sending country and can transition to permanent residence more easily through the Federal Skilled Worker program, which penalizes applicants over the age of 35. Female TFWs are more likely than male TFWs to obtain permanent residence and stay longer for two reasons. First, the LCP, which has a dedicated stream for transition to permanent residence, is largely composed of women. Second, many female TFWs arrive as spouses of high-skilled male TFWs who can easily qualify in the permanent residence application. Low-skilled TFWs are much less likely than high-skilled TFWs to bring their spouses. Even if they do, the spouses of low-skilled TFWs are not eligible for open work permits (Nakache and Kinoshita 2010).

Source-country economic and social conditions are key determinants of whether TFWs are motivated and have opportunities to stay longer in Canada. In particular, TFWs from countries with low levels of economic development or low levels of social stability may have a greater quality of life in Canada, and thus are likely more motivated to find ways to stay. TFWs from countries that are far away from Canada are more likely to stay longer because of higher travel costs.

3. Since 2014, new caregivers entering the Canadian market are not admitted through the LCP permanent residence stream. They are admitted through the regular process and do not have a guaranteed pathway to permanent residence. They must now apply under two categories — those caring for children, and those caring for people with high medical needs. Both categories have an annual cap.

4. To date, all provinces and territories except Quebec (which already administers its immigration programs separately) and Nunavut have a provincial or territorial nominee program. These programs were adopted at different times, starting with Manitoba in 1996, and ending with Ontario in 2007 (IRCC 2012).

Furthermore, TFWs from countries where English or French is an official language may find it easier to integrate into Canadian society, and thus may be more likely to stay longer than other immigrants. These TFWs would also be more likely to meet the language criteria for permanent resident applications.

Host-country institutional factors are also expected to play a major role in how long TFWs stay in Canada and the type of stay. These factors are represented in this study by arrival periods and work permit types. Because Canada is increasingly using TFWs to meet local or occupational labour demand and establishing more pathways of transition to permanent residence, TFWs who arrived during more recent periods should have higher chances of staying longer as temporary residents or gaining permanent residence (Foster 2012; Hou and Bonikowska 2016). Work permit types matter in three ways. First, specific transition pathways have been designated for certain types of TFWs, such as the LCP (in this study period) and high-skilled TFWs. Second, certain industrial sectors (e.g., farming, retail trade, accommodation and food services, and transportation and warehousing) have become reliant on the permanent inflow and presence of low-skilled TFWs. Since pathways to permanent residence for these workers are limited (Foster 2012; Nakache and Dixon-Perera 2015), these low-skilled workers are more likely to stay longer as temporary residents than other TFWs. Third, the duration of some categories of TFWs (e.g., the international agreement category and reciprocal employment category) is bound by the arrangements between Canada and the sending countries. These TFWs encounter more restrictions on staying longer in Canada, either as temporary residents or permanent residents, than other TFWs.

In addition to national institutional factors, local and regional socioeconomic conditions could affect how long TFWs stay in Canada by acting as push or pull factors. A co-ethnic network in the local communities where TFWs work would help TFWs integrate socioeconomically, which might in turn increase their opportunities and desires to stay in Canada longer. Since government services are generally not extended to temporary residents, these informal communities are particularly important sources of support and assistance for TFWs, especially when navigating the application process for permanent residence.⁵ In regions with a tighter labour market, there would be a stronger demand for TFWs. Employers in these regions are therefore more likely to extend TFW employment or sponsor TFW applications for permanent residence.

This study examines how strongly these four sets of determinants affect the duration of stay of TFWs in Canada. With multivariate models, this study can account for possible overlapping effects among these predictors and evaluate their relative importance.

3 Data, measures and methods

3.1 Data

Data for this study are from the Temporary Residents File (TRF), which is an administrative dataset from IRCC. The TRF contains demographic and permit-related information of all temporary residents admitted to Canada between 1980 and 2014, including over 1.3 million TFWs. Canadian census data and national statistics from international organizations were also used to derive variables representing attributes of the source country and local conditions of the host country.

5. Nakache and Dixon-Perera (2015) provided an interesting example in the Brandon community.

This study defines TFWs as individuals aged 18 to 64 at arrival who received a work permit between 1990 and 2009 and whose first admission to Canada was primarily for work purposes.⁶ TFWs who arrived after 2009 have been excluded to ensure that included TFWs have been observed for at least five years before 2014, the most recent year of observation. This study counts only unique persons who came to Canada for temporary work purposes. A person with multiple entries is counted only once in this study. It is important to note that the number of TFWs reported in this study is different from counts of TFWs present in Canada in a given year.

3.2 Measures

TFW residence status (temporary resident, permanent resident, or absence) is determined annually. Temporary resident status is defined as holding an authorized temporary resident permit, which could be a work permit or another type of temporary permit. Absence is defined as the lack of legal residence status in Canada for more than one consecutive year. This could include TFWs who left Canada for more than one consecutive year or who stayed in Canada as undocumented persons. Because Canada does not collect information on people leaving the country, it is not possible to estimate how many temporary residents remain in Canada after their permits have expired. In Canada, there are no efforts to systematically estimate the number of foreign residents without authorized residence status because undocumented immigration has largely been perceived as a non-issue (Goldring, Berinstein and Bernhard 2009).⁷ Although some TFWs might return to Canada after an absence of more than one year, the cut-off is imposed to simplify the analysis. Of all TFWs in the study population, roughly 6% were absent for more than one year, after which they returned, typically as temporary residents. Individual demographic characteristics include age at arrival and sex. Age at arrival is grouped into four categories: 18 to 24, 25 to 34, 35 to 44, and 45 to 64.

The socioeconomic environment of the source country (defined as the country of citizenship) is represented as the standard of living, measured by gross domestic product (GDP) per capita, social stability, distance to Canada and official language (English or French, or other). Each country's GDP per capita (adjusted for purchasing power parity) is averaged over 10 years (1990 to 1999 and 2000 to 2009), and three levels of GDP per capita (low, medium and high) are derived for each decade.⁸ Social stability is an index from the Worldwide Governance Indicators (Kaufman, Kraay and Mastruzzi 2010). It measures perceptions of the likelihood of social instability and politically motivated violence. The decade average associated with each country is assigned to each TFW by source country and decade of arrival. Values are then grouped into three levels.⁹ The distance between the source country and Canada is included as a proxy for costs of transportation. It is expressed in the hours a flight takes between the capital city of Canada and the capital city of the source country, then grouped into three levels.¹⁰ Finally, the source-country official language variable is a binary indicator of whether English or French is an official language in the TFW's source country.¹¹

6. This excludes TFWs who initially came to Canada as visitors, international students or refugee claimants and received a work permit at the same time or later.

7. Estimates of undocumented foreign residents range widely from tens of thousands to half a million. See overviews by Ellis (2015); Goldring, Berinstein and Bernhard (2009); and Magalhaes, Carrasco and Gastaldo (2010).

8. All yearly GDP per capita data are based on purchasing power parity, measured in constant 2010 U.S. dollars. Source-country GDP per capita was classified into low, medium and high levels as less than \$10,000, \$10,000 to \$25,000, and more than \$25,000 for the 1990s data; and less than \$15,000, \$15,000 to \$30,000, and more than \$30,000 for the 2000s data. The data were downloaded from the World Bank (2017).

9. The values of the original scale range from -2.5 (weak) to 2.5 (strong). In this analysis, they are grouped into low (less than 0), medium (0 to less than 0.75), and high (0.75 or more).

10. The levels are defined as short (less than 6 hours), medium (6 to less than 12 hours) and long (12 hours or more). The data were downloaded from the Happy Zebra Travel Tools (2017).

11. The data were taken from the *World Factbook* (Central Intelligence Agency n.d.).

Institutional constraints from the host country are represented by foreign worker streams and arrival cohorts. TFWs initially arrived through one of nine streams identified in the study,¹² under the Temporary Foreign Worker Program (TFWP): (1) Live-in Caregiver Program (LCP), (2) Seasonal Agricultural Workers Program (SAWP), (3) Low-Skill Pilot (LSP), and (4) other TFWP; or under the International Mobility Program (IMP): (5) international agreements, (6) significant benefit, (7) reciprocal employment, (8) research- and study-related, and (9) other IMP. These programs are described in Subsection 2.3. Cohort of arrival, which is based on the first year temporary residents received a work permit, is used to capture broad policy changes toward TFWs. Four cohorts of arrival are defined, indicating TFWs who first arrived between 1990 and 1994, 1995 and 1999, 2000 and 2004, and 2005 and 2009.

Local destination characteristics include a measure of co-ethnic concentration and regional unemployment rates. Co-ethnic concentration reflects possible social networks and diaspora presence. It is calculated as the ratio of the proportion of residents from the same source region living in a particular census subdivision (primarily municipality) to the proportion of residents from the same source region living in Canada.¹³ The data for this measure are derived from the 1991, 1996, 2001 and 2006 censuses. The annual unemployment rate is also included to capture the labour market conditions of the province or major metropolitan area where a TFW resided in a given year. Note that unemployment rates at the broad regional level may not fully capture local or occupational labour shortages. Such a detailed analysis is beyond the scope of this study. Values of both local destination variables are categorized as low, medium or high.¹⁴

3.3 Methods

First, the sample characteristics and the length and type of residential stay in Canada among TFWs are examined. The rates of stay for TFWs as permanent and temporary residents in Canada, by year since arrival, are graphed separately for each arrival cohort.

Next, discrete-time multinomial survival models are run to assess the effects of the selected covariates on an individual's residential status. Because of the large sample size, all covariates showed very small p values, making it difficult to interpret the effects of covariates. To simplify interpretation, estimates are made for the proportions of individuals who stayed as temporary residents, stayed as permanent residents or emigrated by the end of the 3rd, 5th and 10th years after obtaining the initial work permit for each covariate. This is based on the model estimates while holding the values of other covariates at their means. These estimated proportions are compared with the observed proportions to show the extent to which other included variables accounted for the observed effect of a given covariate.

Furthermore, the unique and common contributions of each set of predictors to the overall model pseudo R-squared value are computed as a way to show their relative importance in predicting the length and type of stay of TFWs in Canada (Nathans, Oswald and Nimon 2012).

12. Some TFWs may switch to different streams during their entire stay in Canada.

13. This is based on 14 broad source regions: North America, Central America (mostly Mexico), the Caribbean, South America, Northern Europe, Western Europe, Southern Europe, Eastern Europe, Africa, South Asia, Southeast Asia, East Asia, West Asia, and Oceania and others.

14. The levels of co-ethnic concentration are low (less than 1, i.e., a group's share in the local areas is below the share of the group in Canada as a whole), medium (1 to less than 2.5) and high (2.5 or more, i.e., a group's share in the local areas is 2.5 times higher than its share in Canada as a whole). The levels of regional unemployment rates are low (less than 6%), medium (6% to less than 9%) and high (9% or more).

4 Results

4.1 The characteristics of Canada's temporary foreign workers during the 1990s and 2000s

In Table 1, TFWs are distributed according to the previously described sets of predictors. Most TFWs are younger than 45 years at arrival, and there were more men than women. Most TFWs came from countries with high levels of GDP per capita; however, the share of TFWs from countries with low GDP per capita increased considerably in the late 2000s. From the 1990s to the 2000s, there was also a large change in the distribution of source-country social stability. This was partially because more TFWs came from countries with low GDP per capita. However, it was also the result of a decreased level of social stability in some major source countries because of terrorism threats, as in the United States. Over two-thirds of TFWs are citizens of countries where English or French is an official language, although this share decreased from the late 1990s to the late 2000s. Consistent with these changes, TFWs increasingly came from countries far away from Canada.

In terms of work permit type, most TFWs were admitted without requiring a labour-market opinion (i.e., grouped under the broad IMP category by 2014 definitions) during the 1990s and 2000s. During the 2000s, the share of TFWs requiring a labour-market opinion (i.e. grouped under the broad TFWP category by 2014 definitions) increased significantly mainly because of the expansion of the LSP. Within the IMP, the reciprocal employment category (mostly youth exchange) was the largest component, particularly in the late 2000s, followed by the international agreement category. Among the TFWP streams, the category "other TFWP" (mostly high-skilled workers) surpassed the low-skilled categories, until the late 2000s, when it was overtaken because of the large expansion of the LSP.

The local and regional environment surrounding TFWs has also changed. While over 50% of TFWs settled in municipalities with a low level of co-ethnic concentration in the 1990s, only 38% did so in the late 2000s. Furthermore, the share of TFWs who worked in regions with low unemployment rates (less than 6%) rose substantially from 12% in the early 1990s to 67% in the late 2000s. This large increase was attributable to two factors. First, national macroeconomic conditions improved over this period, and the number of provinces with low levels of unemployment decreased.¹⁵ Second, the large increase of TFWs during the 2000s was concentrated in western Canada where unemployment levels were low.

15. For instance, in the early 1990s, only Ontario had an unemployment rate lower than 6% in 1990 among its prime-age workers. In contrast, in the late 2000s, Ontario and the four western provinces had unemployment rates lower than 6% in most years among their prime-age workers.

Table 1
Distributions of temporary foreign workers by the selected predictors of the length and type of stay in Canada

	Period of initial arrival			
	1990 to 1994	1995 to 1999	2000 to 2004	2005 to 2009
	percent			
Age at arrival				
18 to 24 years	23.5	23.8	24.0	24.5
25 to 34 years	41.5	39.5	40.9	43.7
35 to 44 years	22.1	21.8	21.1	20.4
45 to 64 years	12.8	15.0	13.9	11.4
Sex				
Male	66.0	69.9	65.1	59.3
Female	34.0	30.1	34.9	40.7
Gross domestic product per capita in source country				
Low	20.4	13.5	19.8	31.8
Medium	10.0	9.7	9.7	10.6
High	69.6	76.8	70.6	57.6
Social stability in source country				
Low	22.2	15.1	25.2	36.3
Medium	12.5	13.1	48.2	38.0
High	65.3	71.8	26.5	25.6
Flight distance				
Short	42.5	42.8	35.9	24.3
Medium	29.2	30.8	31.6	33.1
Long	28.3	26.4	32.5	42.7
Official language of source country				
Not English or French	29.9	27.5	29.7	32.1
English or French	70.1	72.5	70.3	67.9
Work permit category				
Temporary Foreign Worker Program				
Live-in Caregiver Program	11.5	4.1	6.7	9.6
Seasonal Agricultural Workers Program	3.7	4.0	5.9	3.1
Low-skill Pilot	0.0	0.0	1.4	10.5
Other, Temporary Foreign Worker Program	22.2	19.2	20.4	18.1
International Mobility Program				
International agreements	12.9	19.9	17.7	9.5
Significant benefit	8.8	9.4	7.6	6.4
Reciprocal Employment	19.8	23.6	24.8	31.5
Research- and studies-related	5.6	4.0	3.8	4.1
Other, International Mobility Program	15.4	15.7	11.8	7.3
Local co-ethnic concentration				
Low	51.8	54.9	47.3	38.0
Medium	20.8	21.7	29.7	35.7
High	27.4	23.4	23.0	26.3
Regional unemployment rate				
Low	12.0	29.2	43.8	67.0
Medium	17.4	53.9	49.9	19.9
High	70.7	16.9	6.3	13.1
	number			
Total numbers	223,905	264,380	328,535	503,540

Note: Percentages may not add up to 100.0% because of rounding.

Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

4.2 Canadian residence status over time

To illustrate the detailed trajectories of TFW stays in Canada, Chart 1 plots the share of TFWs who remain in Canada by years since the first work permit and arrival cohort. It shows a common pattern between the four arrival cohorts. In the first two years, the share of remaining TFWs declined the most, then it continued to decline in the following years. By the fifth year, this share started to level off, when 13% (1995-to-1999 cohort) to 37% (2005-to-2009 cohort) of TFWs still remained in Canada. By the 10th year, the share remaining in Canada stabilized at about 11% for the 1995-to-1999 cohort and 18% for the 2000-to-2004 cohort.

These overall trajectories consisted of two different components, as shown in Charts 2 and 3. Chart 2 displays the share of TFWs remaining in Canada as temporary residents, while Chart 3 displays the share of TFWs who obtained permanent residence. The share of TFWs remaining in Canada as temporary residents declined the most in the first two years, then continued to decline gradually until about the 10th year, eventually nearing zero (Chart 2).

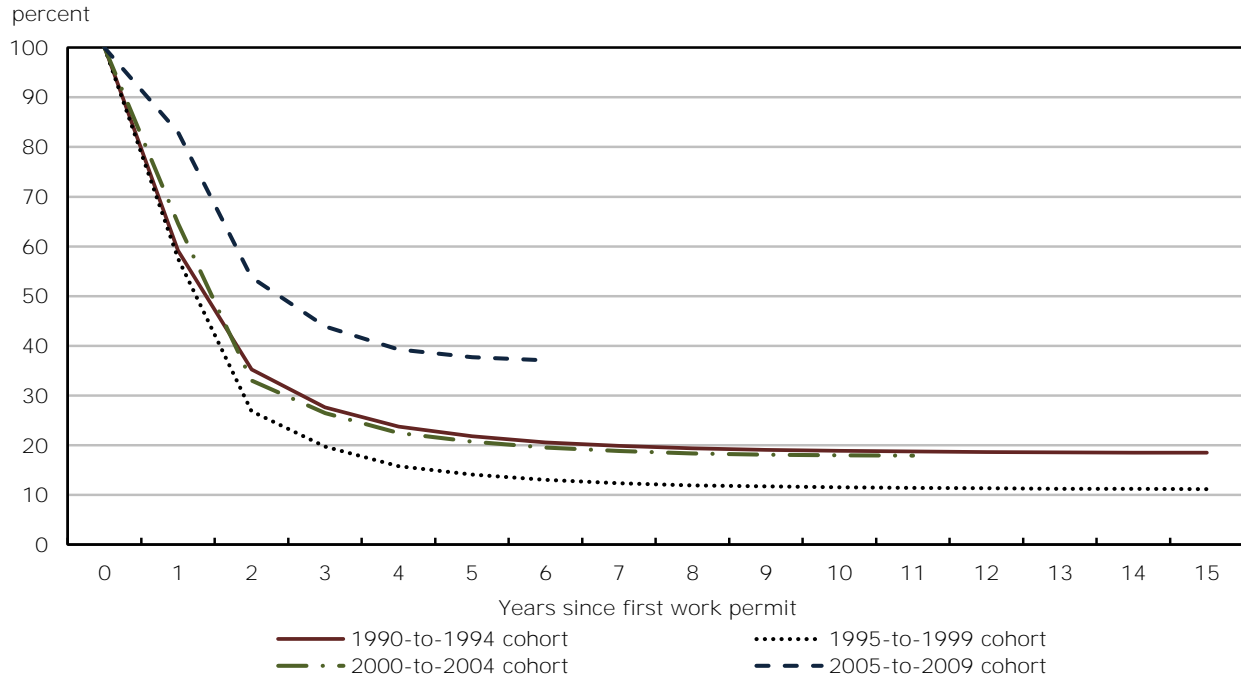
By contrast, the share of TFWs who obtained permanent residence increased the most between the second and fifth year after the first work permit. This share then increased slightly until the 10th year (Chart 3). Therefore, the overall trend observed in Chart 1 was most influenced by the large decline in the share of TFWs who stayed as temporary residents in the first two years. The decline after the second year in Chart 1 is a result of both the continuing decline in the share of temporary residents and the large increase in TFWs transitioning to permanent residents before the fifth year. From the 5th year to the 10th year, there was minimal year-to-year change in the proportion of temporary and permanent residents. After the 10th year, very few TFWs stayed as temporary residents, so the level of transition to permanent residence determined the eventual share of TFWs remaining in Canada.

Table 2 presents the shares of TFWs remaining in Canada as temporary residents and permanent residents in the 3rd, 5th and 10th year by the selected predictors. Note that the sample used to compute the rates for the 3rd year includes TFWs who obtained their first work permit at least 3 years ago, the sample for the 5th year includes TFWs who obtained their first work permit at least 5 years ago, while the sample for the 10th year results includes TFWs who obtained their first work permit at least 10 years ago. Since the samples are different, caution should be exercised in comparing the share of TFWs remaining in Canada by the 3rd, 5th and 10th years.

Similar to the trajectories observed by arrival cohort, for all other included predictors, the share of TFWs who stayed as temporary residents remained sizable by the end of the fifth year. After the fifth year, the share of TFWs who became permanent residents surpassed the share of TFWs who remained temporary residents, in most cases. By the 10th year, the remaining TFWs overwhelmingly comprised permanent residents.

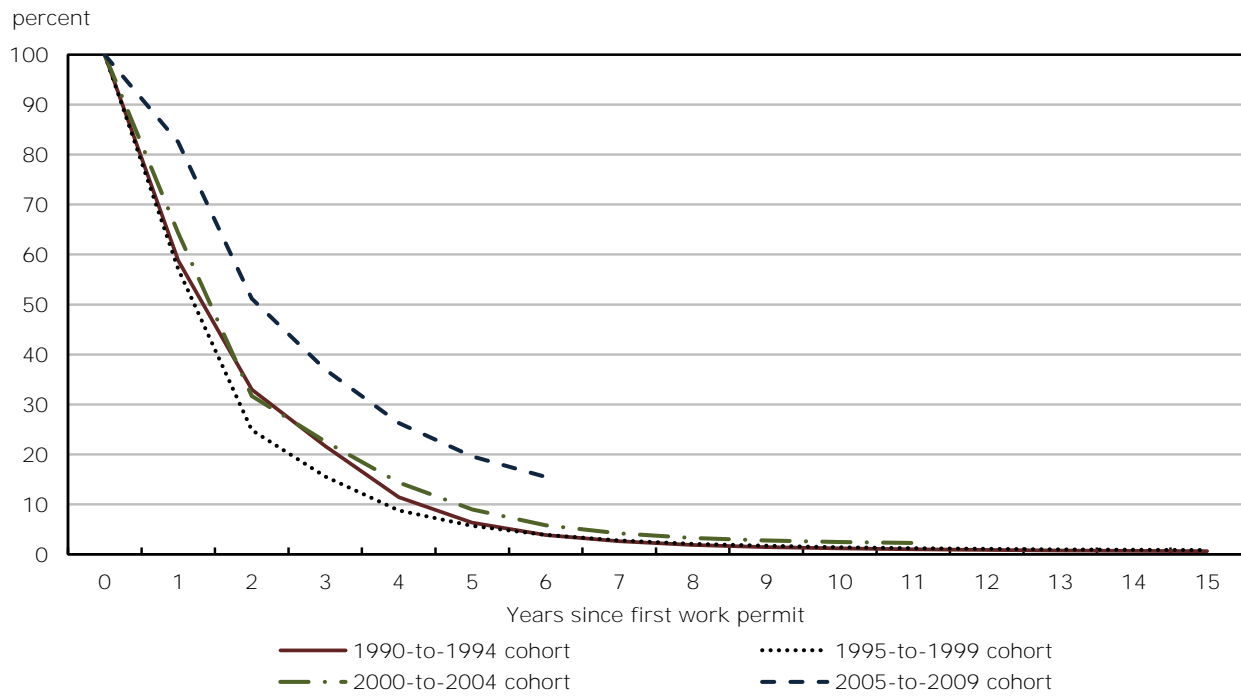
The observed proportions of TFWs by residential status at the end of the 3rd, 5th, and 10th year after arrival generally met expectations for all the included predictors (Table 2). TFWs who arrived at the prime working age (ages 25 to 44) had a higher rate of staying as temporary or permanent residents than their younger or older counterparts. Women were more likely than men to become permanent residents, but the difference between men and women who remained as temporary residents was small by the fifth year.

Chart 1
 Percentage of temporary foreign workers remaining in Canada, by years since first work permit



Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

Chart 2
 Percentage of temporary foreign workers remaining in Canada as temporary residents, by years since first work permit

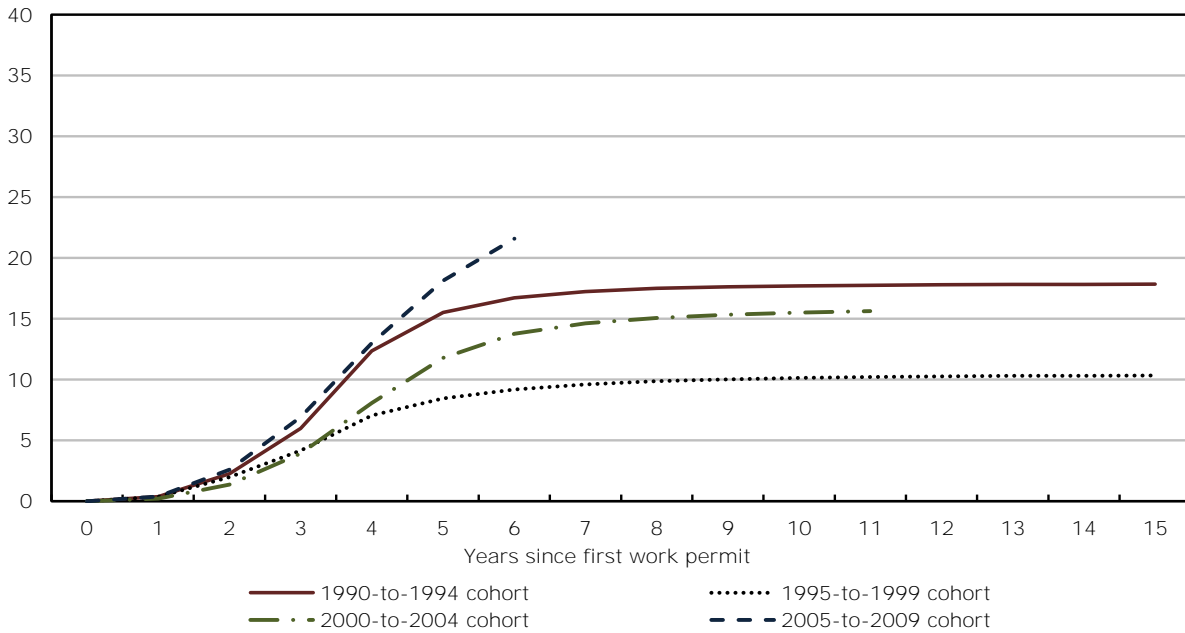


Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

Chart 3

Percentage of temporary foreign workers remaining in Canada as permanent residents, by years since first work permit

percent



Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

The rate and type of stay in Canada varied significantly depending on source-country attributes. For example, by the fifth year after the first work permit, 42.8% of TFWs from countries with low GDP per capita acquired permanent residence, while 17.7% remained as temporary residents. In comparison, among TFWs from countries with high GDP per capita, 7.4% acquired permanent residence and 4.5% remained as temporary residents. Similarly, 37.9% of TFWs from countries with low social stability became permanent residents by the fifth year, with another 19.4% remaining in Canada as temporary residents. In contrast, the corresponding rates were 6.5% and 3.6% among TFWs from countries with high levels of social stability. TFWs from countries that are far away from Canada were much more likely to become permanent residents than TFWs from other countries. However, distance to Canada was not consistently associated with the rate of remaining as temporary residents. Whether the source country had English or French as an official language made little difference in the rate of staying in Canada.

Host-country institutional factors were significant indicators of the rate of staying. Increases in the shares of TFWs who stayed as temporary residents or became permanent residents from the late 1990s cohort to the late 2000s cohort are consistent with Canada's growing reliance on TFWs and increasing pathways for TFWs to gain permanent residence. The relatively high share of TFWs becoming permanent residents in the 1990-to-1994 cohort resulted from a large-scale, one-time backlog clearance program (Hou and Bonikowska 2016). More strikingly, the work permit category was associated with a very large variation in the type and length of stay in Canada. While the majority of live-in caregivers gained permanent residence by the 5th year, only 2% of seasonal agricultural workers did so even by the 10th year.¹⁶ The SAWP had the highest share of TFWs staying as temporary residents among all permit categories. TFWs in the LSP had relatively high shares of staying as both temporary residents and permanent residents. In comparison, TFWs in the "other TFWP" and "research- and study-related" categories, both generally high-skilled groups, had moderate shares of TFWs staying as permanent residents and low shares of staying as temporary residents.

16. A previous study shows that the main avenue for seasonal agricultural workers to obtain permanent residence is the family class (i.e., being sponsored as family members of other permanent residents or Canadian citizens) after they left Canada (Lu and Hou 2017).

Table 2-1
Observed residence status among temporary foreign workers 3, 5 and 10 years after arrival

	3 years since arrival			5 years since arrival			10 years since arrival			Left
	Temporary residents	Permanent residents	Absent	Temporary residents	Permanent residents	Absent	Temporary residents	Permanent residents		
	percent									
Age at arrival										
18 to 24 years	9.0	5.8	85.2	4.5	8.9	86.6	0.7	9.6	89.7	
25 to 34 years	20.0	13.7	66.3	9.7	21.3	69.0	2.0	19.3	78.7	
35 to 44 years	22.9	12.1	65.0	12.3	19.3	68.4	2.1	15.6	82.2	
45 to 64 years	14.8	6.0	79.2	8.1	9.2	82.7	1.0	6.8	92.2	
Sex										
Male	14.6	7.2	78.2	8.5	10.3	81.2	2.1	7.8	90.1	
Female	22.1	16.2	61.7	9.3	27.1	63.6	0.5	28.0	71.5	
Gross domestic product per capita in source country										
Low	37.4	25.1	37.4	17.7	42.8	39.5	2.3	48.3	49.4	
Medium	24.6	9.9	65.6	16.9	14.1	69.0	8.3	12.7	79.0	
High	9.2	5.5	85.4	4.5	7.4	88.1	0.5	6.3	93.2	
Social stability in source country										
Low	37.2	22.4	40.3	19.4	37.9	42.7	4.7	41.7	53.6	
Medium	12.4	7.9	79.8	6.5	10.9	82.6	1.3	8.9	89.8	
High	8.1	4.7	87.2	3.6	6.5	89.9	0.5	6.2	93.3	
Flight distance										
Short	15.2	3.4	81.4	10.1	4.8	85.1	3.4	4.2	92.4	
Medium	10.4	11.2	78.4	4.4	15.1	80.5	0.3	12.6	87.1	
Long	25.7	16.8	57.5	11.5	28.8	59.7	0.4	30.4	69.2	
Official language of source country										
Not English or French	16.9	11.0	72.1	9.8	15.2	75.0	2.9	13.9	83.2	
English or French	17.5	10.2	72.3	8.3	16.8	74.9	1.1	14.7	84.3	
Arrival cohort										
1990 to 1994	11.4	12.3	76.2	3.9	16.7	79.4	1.0	17.8	81.2	
1995 to 1999	8.8	7.0	84.2	3.9	9.2	87.0	1.2	10.2	88.6	
2000 to 2004	14.4	8.1	77.6	5.8	13.8	80.4	2.3	15.6	82.1	
2005 to 2009	26.3	13.0	60.7	15.5	21.6	62.9	...	...	...

... not applicable

Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

Table 2-2
Observed residence status among temporary foreign workers 3, 5 and 10 years after arrival

	3 years since arrival			5 years since arrival			10 years since arrival			Left
	Temporary residents	Permanent residents	Absent	Temporary residents	Permanent residents	Absent	Temporary residents	Permanent residents		
percent										
Work permit category										
Temporary Foreign Worker Program										
Live-in Caregiver Program	57.4	34.5	8.1	21.1	70.1	8.9	0.5	86.9	12.6	
Seasonal Agricultural Workers Program	45.2	0.5	54.2	38.8	1.2	60.1	22.6	2.0	75.4	
Low-skill Pilot	46.7	17.3	36.1	31.4	30.1	38.4	...	...	...
Other, Temporary Foreign Worker Program	13.3	11.8	75.0	6.2	16.1	77.7	0.8	13.1	86.1	
International Mobility Program										
International agreements	10.0	5.1	84.9	5.2	6.4	88.4	0.7	5.4	93.9	
Significant benefit	14.2	7.4	78.4	6.7	10.2	83.1	0.8	9.6	89.6	
Reciprocal Employment	6.5	4.7	88.9	3.1	6.7	90.2	0.3	6.1	93.6	
Research- and studies-related	15.8	13.9	70.3	6.6	19.1	74.2	0.4	23.0	76.5	
Other, International Mobility Program	11.2	13.0	75.8	4.9	16.6	78.5	0.4	8.6	91.1	
Local co-ethnic concentration										
Low	13.4	6.3	80.3	7.2	9.5	83.4	1.9	7.3	90.8	
Medium	17.3	11.1	71.6	9.8	16.2	74.0	1.9	13.7	84.4	
High	24.4	17.4	58.2	10.5	29.1	60.4	0.6	30.3	69.0	
Regional unemployment rate										
Low	21.7	12.2	66.1	11.5	19.6	68.9	2.5	15.4	82.1	
Medium	13.7	9.1	77.2	6.3	14.0	79.7	1.3	14.5	84.2	
High	14.0	8.9	77.1	7.2	13.2	79.6	0.9	13.4	85.7	

... not applicable

Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

Regional and local factors made considerable differences as well. The share of TFWs staying as permanent residents was more than three times higher in municipalities with relatively high co-ethnic concentration than in areas with low co-ethnic concentration. Lower regional unemployment rates were associated with higher shares of TFWs staying as permanent or temporary residents, but this association became weak by the 10th year.

4.3 Multivariate results

While the bivariate correlations observed above were very strong in most cases, they did not account for possible overlapping effects from other included predictors. To show the effect of each predictor independent of other included predictors, three multivariate discrete-time event history models were estimated: one for TFWs who arrived at least 3 years ago, one for TFWs who arrived at least 5 years ago, and one for TFWs who arrived at least 10 years ago. Appendix Table 1 shows the regression model coefficients and standard errors for the last sample, as an example. Since the study sample is very large, almost all coefficients in the models are statistically significant. For a straightforward comparison of the effects of covariates, the estimated shares of TFWs staying in Canada as temporary and permanent residents are presented in Table 3. These estimates are based on the multivariate models by holding the covariates at their respective means. This interpretation focuses on the changes from the observed effects presented in Table 2 to the estimated effects in Table 3.

The estimated age and sex differences in the rates of staying in Canada were smaller than the observed effects, but followed the same trends. The smaller estimated effects are mostly reflective of differences in the age and sex distribution of various work permit categories. For instance, TFWs in the “reciprocal employment” category, who had a very low rate of staying in Canada as either temporary or permanent residents, were predominantly 18 to 24 years of age. As mentioned earlier, live-in caregivers were almost all women, and the majority of them became permanent residents.

The estimated differences in the likelihood of staying by source-country characteristics were significant, but much smaller than the observed differences. This difference reflects how countries with low levels of GDP per capita or social stability were the main source countries for TFWs in the LCP, SAWP, and LSP, all of whom had a high tendency to stay longer as permanent or temporary residents.

The estimated effects of work permit categories were also smaller than the observed effects, but remained quite large. After other predictors in the models were controlled for, the observed high rates of TFWs staying as permanent residents were considerably lower among TFWs in the LCP and LSP. Meanwhile, among TFWs in the international agreement category, the observed low rates of TFWs staying as permanent residents increased. The differences between observed and estimated shares of TFWs staying were relatively small for other work permit categories. Interestingly, there were only minor differences between observed and estimated cohort effects. This suggests that the effects of changes in national policies toward TFWs were largely independent of changes in the composition of source regions and work permit types.

Table 3-1
Estimated residence status among temporary foreign workers 3, 5 and 10 years after arrival

	3 years since arrival			5 years since arrival			10 years since arrival		
	Temporary residents	Permanent residents	Absent	Temporary residents	Permanent residents	Absent	Temporary residents	Permanent residents	Absent
	percent								
Age at arrival									
18 to 24 years	13.3	7.3	79.5	7.0	11.8	81.3	1.4	10.8	87.8
25 to 34 years	17.8	12.3	69.9	8.7	18.7	72.6	1.7	16.5	81.8
35 to 44 years	19.5	11.3	69.2	10.0	17.6	72.3	1.5	15.7	82.7
45 to 64 years	18.5	8.1	73.4	10.1	13.2	76.7	1.6	11.8	86.6
Sex									
Male	17.2	8.8	74.0	9.1	14.2	76.7	1.6	12.5	85.8
Female	18.4	13.0	68.6	9.1	19.6	71.3	1.5	17.9	80.6
Gross domestic product per capita in source country									
Low	17.9	14.2	67.9	8.5	21.6	69.9	1.8	21.5	76.7
Medium	18.2	9.9	71.9	9.0	16.4	74.5	1.5	15.1	83.4
High	17.9	8.0	74.1	10.3	12.6	77.1	1.6	11.6	86.8
Social stability in source country									
Low	19.7	12.7	67.6	10.3	18.9	70.7	2.0	16.9	81.1
Medium	16.3	11.4	72.3	8.1	17.2	74.7	1.4	14.8	83.8
High	16.3	7.5	76.1	7.8	13.1	79.2	1.0	12.5	86.5
Flight distance									
Short	16.9	5.4	77.8	9.5	9.6	80.9	2.1	9.6	88.4
Medium	15.3	14.4	70.3	6.5	20.9	72.6	0.7	16.8	82.4
Long	20.3	11.5	68.2	10.7	17.8	71.5	0.9	16.8	82.3
Official language of source country									
Not English or French	16.7	10.3	72.9	8.9	15.6	75.5	2.0	14.3	83.7
English or French	17.6	10.6	71.8	8.8	16.7	74.5	1.3	14.6	84.1
Arrival cohort									
1990 to 1994	10.8	15.8	73.4	3.6	19.3	77.2	1.3	16.2	82.5
1995 to 1999	11.7	10.4	77.9	5.1	14.2	80.7	1.5	13.2	85.3
2000 to 2004	15.1	8.2	76.7	5.8	14.7	79.5	1.8	14.3	83.9
2005 to 2009	24.1	10.4	65.5	14.8	17.3	67.9	...	...	...

... not applicable

Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

Table 3-2

Estimated residence status among temporary foreign workers 3, 5 and 10 years after arrival

	3 years since arrival			5 years since arrival			10 years since arrival		
	Temporary residents	Permanent residents	Absent	Temporary residents	Permanent residents	Absent	Temporary residents	Permanent residents	Absent
percent									
Work permit category									
Temporary Foreign Worker Program									
Live-in Caregiver Program	59.2	18.8	22.0	28.1	43.4	28.6	1.8	52.9	45.3
Seasonal Agricultural Workers Program	45.5	0.9	53.6	39.3	2.0	58.7	8.7	3.4	87.9
Low-skill Pilot	29.7	11.7	58.7	17.8	19.2	63.0	...	...	...
Other, Temporary Foreign Worker Program	13.5	12.8	73.8	6.3	17.3	76.4	0.7	14.8	84.5
International Mobility Program									
International agreements	13.6	11.5	74.9	6.6	14.7	78.7	0.6	11.4	88.0
Significant benefit	15.5	9.4	75.1	7.3	13.0	79.7	0.9	12.4	86.8
Reciprocal Employment	7.5	6.5	86.0	3.5	9.2	87.3	0.4	7.9	91.7
Research- and studies-related	14.9	9.7	75.4	6.6	14.1	79.3	0.5	14.5	85.0
Other, International Mobility Program	12.9	12.7	74.3	6.3	16.7	77.1	0.4	9.0	90.6
Local co-ethnic concentration									
Low	16.9	10.2	72.9	8.6	15.9	75.5	1.6	14.7	83.7
Medium	17.6	11.1	71.3	9.1	16.9	74.0	1.6	15.0	83.4
High	17.5	10.2	72.3	8.8	16.2	75.0	1.4	13.9	84.7
Regional unemployment rate									
Low	16.9	11.8	71.4	8.1	17.6	74.3	1.6	15.2	83.2
Medium	17.3	10.8	71.8	9.0	16.5	74.5	1.6	15.1	83.3
High	18.4	7.6	74.0	11.1	12.9	76.0	1.5	12.8	85.7

... not applicable

Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

When other predictors were controlled for, the effects of local co-ethnic concentration became very small. This suggests that local co-ethnic concentration was higher among TFWs in work permit categories and from source countries that had higher rates of staying. By contrast, the estimated proportions of TFWs who transition to permanent residence, by level of regional unemployment, changed only slightly relative to the observed effects. The estimated effects of regional unemployment rates on TFWs staying as temporary residents were reversed compared with the observed rates. This was likely because the observed effects captured a period effect: during the 2000s, most destination regions had low unemployment rates and rates of TFWs staying as temporary residents were generally higher in the 2000s than in the 1990s.

Analysis of each set of predictors' unique contribution to the overall model R-squared value shows that host-country institutional constraints were the most important determinant of TFWs' staying in Canada. For instance, the model pseudo R-squared value for the sample of TFWs who arrived at least five years ago was 0.283. Host-country institutional factors contributed uniquely 0.071, while source-country characteristics, local context and individual demographic variables each contributed uniquely 0.027, 0.002 and 0.011, respectively. In addition to the unique contribution, host-country institutional factors together with source-country characteristics made the largest common contribution to the model R-squared. The common contribution captures the shared variance between factors and is determined by partitioning the model R-squared into that unique to each independent variable and into that associated with each possible combination of independent variables. The common contribution of host-country institutional factors and source-country characteristics was 0.090, while the common contributions of other two-way combinations were generally smaller than 0.015. Similar results were observed in the model for the samples of TFWs who arrived at least 3 and 10 years ago.

5 Conclusion and discussion

This study seeks to answer how temporary were Canada's temporary foreign workers (TFWs). Results suggest that the majority of TFWs in Canada stayed in Canada temporarily, with most leaving within the first two years after arrival. But the tendency to stay longer has increased among more recent arrivals, which likely results from Canada's increased reliance on temporary labour migration programs as a supply of high-skilled and low-skilled labour and as a feeding pool for permanent immigrants (Foster 2012; Hou and Bonikowska 2016). The share of TFWs remaining in Canada declined the most in the first two years after receiving the first work permit. The decline started to level off by the fifth year, when 13% of the 1995-to-1999 cohort and 37% of the 2005-to-2009 cohort still remained in Canada. By the 10th year, the share of TFWs remaining in Canada stabilized at about 11% for the 1995-to-1999 cohort and 18% for the 2000-to-2004 cohort. The overwhelming majority of those who stayed over the long term obtained permanent resident status.

This study further examines factors that affect the length and type of stay of TFWs, particularly the relative importance of individual demographic characteristics, source-country attributes, host-country institutional constraints and local community conditions. Several aspects of the results suggest that the leading determinant for the length and type of stay was host-country institutional constraints. There were very large differences in two areas: the length of stay in Canada by arrival cohorts, and the length and type of stay by initial work permit category. The differences by arrival cohort were mostly driven by changes in national policies and regulations governing TFWs, since these were barely affected by the inclusion of other predictors in the multivariate analyses. Except for the Live-in Caregiver Program (LCP) and Low-Skill Pilot (LSP), which greatly overlap with source countries with low levels of economic development and social stability, the length and types of stay observed among other work permit categories changed little when other predictors were controlled for in multivariate analysis. This suggests that the terms and conditions that the host country attaches to most work permit types function mostly independently of source-country attributes and other included predictors. In addition, these two indicators of host-country institutional factors had the largest unique contribution and the largest common contribution—together with source-country attributes—in explaining differences in the likelihood of TFWs staying in Canada. Furthermore, the share of TFWs staying as temporary residents declined rapidly in the years following the initial work permit and dropped nearly to zero by the 10th year. The majority of TFWs remaining in Canada had acquired permanent residence by this point. Because there is a formal application and selection process for acquiring permanent residence, the host country ultimately decides which TFWs can stay permanently.

More broadly, the length and type of stay are jointly influenced by the motivations of TFWs to stay and the institutional constraints of the host country. Low-skilled TFWs and individuals from countries with low levels of economic development and social stability may be highly motivated to stay longer or to stay permanently in Canada because they have more to gain from Canada's standard of living and social and physical environments. In cases such as the LCP, where there was a sure transition pathway to permanent residence, the majority of TFWs chose to stay. Even if limited pathways were available, as in the case of the LSP, a large share of TFWs were able to stay in Canada. But, when no pathway was offered, as in the case of the Seasonal Agricultural Workers Program, low-skilled TFWs could only stay as temporary residents or leave (no data are available to estimate how many of these TFWs stayed in Canada as undocumented persons). On the other hand, high-skilled TFWs and individuals from developed economies may have relatively low motivation to stay in Canada permanently because their skills are sought after internationally. The social and economic gains from transition to permanent residence may not be substantial relative to the gains from returning to the country of origin or moving to other countries (Ci, Hou and Morissette 2017; Dumont, Rayp and Willemé 2012). Consequently, the rates of stay for high-skilled TFWs were low to moderate even though there were more available transition pathways for them than for low-skilled TFWs.

The patterns of stay among TFWs in Canada counter the common perception that host countries often do not have sufficient control over how long TFWs reside in the country. The duration and type of stay of TFWs in Canada are strongly restricted by the regulations governing their work permit terms. Canada has historically relied on a steady inflow of permanent immigrants to meet demographic and labour market needs. Until recently, the use of TFWs has been small in scale and limited to particular industrial sectors and geographic regions. It remains to be seen whether the pattern will change as TFWs gain importance in the overall labour migration to Canada.

6 Appendix

Appendix Table 1
Multinomial discrete-time event history model, with continued temporary residence as base category, among temporary foreign workers who arrived at least 10 years ago

	Absent		Became a permanent resident	
	coefficient	standard error	coefficient	standard error
Age at arrival (reference: 18 to 24 years)				
25 to 34 years	-0.346	0.005 ***	0.061	0.010 ***
35 to 44 years	-0.323	0.005 ***	-0.099	0.012 ***
45 to 64 years	-0.220	0.006 ***	-0.422	0.016 ***
Sex (reference: male)				
Female	-0.208	0.004 ***	0.376	0.009 ***
Gross domestic product per capita (reference: low)				
Medium	-0.031	0.008 ***	-0.665	0.016 ***
High	0.080	0.008 ***	-1.071	0.017 ***
Social stability (reference: low)				
Medium	0.327	0.007 ***	0.069	0.016 ***
High	0.322	0.008 ***	0.060	0.017 ***
Flight distance (reference: short)				
Medium	0.985	0.013 ***	0.831	0.015 ***
Long	0.563	0.015 ***	0.507	0.016 ***
Official language of source country (reference: not English or French)				
English or French is official language	-0.022	0.005	0.063	0.010 ***
Arrival cohort (reference: 1990 to 1994)				
1995 to 1999	0.163	0.005 ***	-0.091	0.011 ***
2000 to 2004	-0.012	0.005	-0.329	0.010 ***
Work permit category (reference: Live-in Caregiver Program)				
Seasonal Agricultural Workers Program	1.464	0.015 ***	-3.221	0.040 ***
Other, Temporary Foreign Worker Program	2.295	0.013 ***	0.300	0.014
International agreements	2.148	0.014 ***	0.094	0.019 ***
Significant benefit	2.189	0.014 ***	-0.050	0.019 **
Reciprocal Employment	2.455	0.013 ***	0.022	0.016
Research- and studies-related	1.957	0.015 ***	0.060	0.017 ***
Other, International Mobility Program	2.740	0.014 ***	0.229	0.015 ***
Co-ethnic concentration (reference: low)				
Medium	-0.027	0.005 ***	0.027	0.010 **
High	-0.073	0.006 ***	-0.106	0.011 ***
Regional unemployment rate (reference: low)				
Medium	0.015	0.004 ***	-0.017	0.008 *
High	0.165	0.005 ***	0.055	0.011 ***

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

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

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

Note: The model also includes 10 yearly dummy variables for duration (top-coded at the 10th year).

Sources: Statistics Canada, Temporary Residents File and Immigrant Landing File, 1990 to 2014.

References

- Aydemir, A.B., and C. Robinson. 2008. "Global labour markets, return, and onward migration." *Canadian Journal of Economics* 41 (4): 1285–1311.
- Baláz, V., A.M. Williams, and D. Kollár. 2004. "Temporary versus permanent youth brain drain: Economic implications." *International Migration* 42 (4): 3–34.
- Bijwaard, G.E., C. Schluter, and J. Wahba. 2014. "The impact of labour market dynamics on the return-migration of immigrants." *The Review of Economics and Statistics* 96 (3): 483–494.
- Borjas, G.J., and B. Bratsberg. 1996. "Who leaves? The outmigration of the foreign-born." *The Review of Economics and Statistics* 78 (1): 165–176.
- Bratsberg, B., R.O. Raaum, and K. Sørlie. 2007. "Who leaves? And where? Patterns of repeat and return migration among immigrants in Norway." In *International Migration, Economic Development & Policy*, ed. Ç. Özden and M. Schiff. Basingstoke: Palgrave Macmillan.
- Budnik, K.B. 2011. "Temporary migration in theories of international mobility of labour." *Bank i Kredyt* 42 (6): 7–48.
- Callea, S. 1986. "Different forms, reasons and motivations for return migration of persons who voluntarily decide to return to their countries of origin." *International Migration* 24 (1): 61–76.
- Cassarino, J.-P. 2004. "Theorising return migration: The conceptual approach to return migrants revisited." *International Journal on Multicultural Societies* 6 (2): 253–279. UNESCO.
- Castles, S. 2002. "Migration and community formation under conditions of globalization." *The International Migration Review* 36 (4): 1143–1168.
- Central Intelligence Agency. n.d. "Field Listing::Languages." *The World Factbook*. Available at: <https://www.cia.gov/library/publications/the-world-factbook/fields/2098.html> (accessed August 10, 2017).
- Ci, W., F. Hou, and R. Morissette. 2017. *Acquisition of Permanent Residence by Temporary Foreign Workers in Canada: A Panel Study of Labour Market Outcomes Before and After the Status Transition*. Analytical Studies Branch Research Paper Series, no. 396. Statistics Canada Catalogue no. 11F0019M. Ottawa: Statistics Canada.
- CIC (Citizenship and Immigration Canada). 2014. *Canada Facts and Figures 2013: Immigrant Overview, Temporary Residents*. 70 pages. Available at: <http://www.cic.gc.ca/english/pdf/2013-Facts-Temporary.pdf> (accessed August 11, 2015).
- Constant, A., and D.S. Massey. 2002. "Return migration by German guestworkers: Neoclassical versus new economic theories." *International Migration* 40 (4): 5–38.
- Dumont, M., G. Rayp, and P. Willemé. 2012. "The bargaining position of low-skilled and high-skilled workers in a globalising world." *Labour Economics* 19 (3): 312–319.
- Dustmann, C. 2003. "Return migration, wage differentials, and the optimal migration duration." *European Economic Review* 47 (2): 353–369.
- Dustmann, C., and J.-S. Görlach. 2015. *The Economics of Temporary Migrations*. SOEP papers on Multidisciplinary Panel Data Research, no. 729. Berlin: DIW Berlin.
- Elgersma, S. 2014. *Temporary Foreign Workers*. Background Paper. Ottawa: Library of Parliament.

- Ellis, B.D. 2015. "The production of irregular migration in Canada." *Canadian Ethnic Studies* 47 (2): 93–112.
- Faist, T. 2010. "Towards transnational studies: World theories, transnationalisation and changing institutions." *Journal of Ethnic and Migration Studies* 36 (10): 1665–1687.
- Foster, J. 2012. "Making temporary permanent: The silent transformation of the Temporary Foreign Worker Program." *Just Labour: A Canadian Journal of Work and Society* 19: 22–46.
- Goldring, L., C. Berinstein, and J. Bernhard. 2009. "Institutionalizing precarious immigration status in Canada." *Citizenship Studies* 13 (3): 239–265.
- Goldring, L., and P. Landolt. 2012. *The Impact of Precarious Legal Status on Immigrants' Economic Outcomes*. IRPP Study, no. 35. Montréal: Institute for Research on Public Policy.
- Government of Canada. 2015. *Overhauling the Temporary Foreign Worker Program: Putting Canadians First*. Catalogue no. Em4-1/2015E-pdf. 38 p. Available at: http://publications.gc.ca/collections/collection_2015/edsc-esdc/Em4-1-2015-eg.pdf (accessed August 14, 2017).
- Government of Canada. 2016. *Hire a Temporary Worker Through the Seasonal Agricultural Worker Program – Overview*. Last updated January 25, 2016. Available at: <https://www.canada.ca/en/employment-social-development/services/foreign-workers/agricultural/seasonal-agricultural.html> (accessed February 6, 2017).
- Gregory, R. 2014. *The Two-step Australian Immigration Policy and Its Impact on Immigrant Employment Outcomes*. IZA Discussion Paper, no. 8061. Bonn: Institute for the Study of Labor.
- Happy Zebra Travel Tools. 2017. *How far is it from Canada to other countries by air?* (table). Available at: <http://www.happyzebra.com/distance-calculator/farfrom-Canada.php> (accessed August 10, 2017).
- Hennebry, J. 2014. *Permanently Temporary? Agricultural Migrant Workers and Their Integration in Canada*. IRPP Study, no. 26. Montréal: Institute for Research on Public Policy.
- Hou, F., and A. Bonikowska. 2016. "Selections before the selection: Earnings advantages of immigrants who were former skilled temporary foreign workers in Canada." *International Migration Review*. DOI: 10.1111/imre.12310.
- IRCC (Immigration, Refugees and Citizenship Canada). 2012. *Evaluation of the Provincial Nominee Program*. Evaluation Division, Research and Evaluation. Last updated January 24, 2012. Available at: <http://www.cic.gc.ca/english/resources/evaluation/pnp/index.asp> (accessed April 26, 2016).
- IRCC (Immigration, Refugees and Citizenship Canada). 2014. *Temporary Foreign Worker Program: Canadian Interests – Reciprocal Employment General Guidelines R205(b), C20*. Last updated June 6, 2014. Available at: <http://www.cic.gc.ca/english/resources/tools/temp/work/opinion/reciprocal.asp> (accessed May 26, 2016).
- IRCC (Immigration, Refugees and Citizenship Canada). 2015. *International Mobility Program: Public Policy, Competitiveness and Economy*. Last updated November 21, 2016. Available at: <http://www.cic.gc.ca/english/resources/tools/temp/work/opinion/policy.asp> (accessed August 14, 2017).

IRCC (Immigration, Refugees and Citizenship Canada). 2016. *Can I Apply to Extend my Seasonal Agricultural Worker Program Work Permit?* Last updated April 18, 2017. Available at: <http://www.cic.gc.ca/english/helpcentre/answer.asp?qnum=182&top=17> (accessed August 14, 2017).

Kaufmann, D., A. Kraay, and M. Mastruzzi. 2010. *The Worldwide Governance Indicators: Methodology and Analytical Issues*. World Bank Policy Research Working Paper, no. 5430. Available at: <http://documents.worldbank.org/curated/en/630421468336563314/pdf/WPS5430.pdf> (accessed August 11, 2017).

Khoo, S.-E., G. Hugo, and P. McDonald. 2008. "Which skilled temporary migrants become permanent residents and why?" *International Migration Review* 42 (1): 193–226.

Lowell, L., and J. Avato. 2014. "The wages of skilled temporary migrants: Effects of visa pathways and job portability." *International Migration* 52 (3): 85–98.

Lu, Y., and F. Hou. 2017. *Transition from Temporary Foreign Workers to Permanent Residents, 1990 to 2014*. Analytical Studies Branch Research Paper Series, no. 389. Statistics Canada Catalogue no. 11F0019M. Ottawa: Statistics Canada.

Magalhaes, L., C. Carrasco, and D. Gastaldo. 2010. "Undocumented migrants in Canada: A scope literature review on health, access to services, and working conditions." *Journal of Immigrant and Minority Health* 12 (1): 132–151.

Martin, P.L. 2001. *There Is Nothing More Permanent Than Temporary Foreign Workers*. Backgrounder. Washington, D.C.: Center for Immigration Studies.

Massey, D.S., and K.E. Espinosa. 1997. "What's driving Mexico-U.S. migration? A theoretical, empirical, and policy analysis." *The American Journal of Sociology* 102 (4): 939–999.

Nakache, D., and C. Blanchard. 2014. "Remedies for non-citizens under provincial nominee programs: Judicial review and fiduciary relationships." *Dalhousie Law Journal* 37 (2): 527–558.

Nakache, D., and S. D'Aoust. 2012. "Provincial/territorial nominee programs: An avenue to permanent residency for low-skilled temporary foreign workers in Canada?" In *Legislated Inequality: Temporary Labour Migration in Canada*, ed. P.T. Lenard and C. Straehle, p. 158–177. Montréal: McGill-Queen's University Press.

Nakache, D., and L. Dixon-Perera. 2015. *Temporary or Transitional? Migrant Workers' Experiences with Permanent Residence in Canada*. IRPP Study, no. 55. Montréal: Institute for Research on Public Policy.

Nakache, D., and P.J. Kinoshita. 2010. *The Canadian Temporary Foreign Worker Program: Do Short-term Economic Needs Prevail over Human Rights Concerns?* IRPP Study, no. 5. Montréal: Institute for Research on Public Policy.

Nathans, L., F. Oswald, and K. Nimon. 2012. "Interpreting multiple linear regression: A guidebook of variable importance." *Practical Assessment, Research & Evaluation* 17 (9): 1–19.

Nekby, L. 2006. "The emigration of immigrants, return vs onward migration: Evidence from Sweden." *Journal of Population Economics* 19 (2): 197–226.

Ruhs, M. 2006. "The potential of temporary migration programmes in future international migration policy." *International Labour Review* 145 (1–2): 7–36.

Sjaastad, L.A. 1962. "The costs and returns of human migration." *The Journal of Political Economy* 70 (5): 80–93.

Stark, O., and D.E. Bloom. 1985. "The new economics of labor migration." *The American Economic Review* 75 (2): 173–178.

The World Bank. 2017. *GDP per capita (constant 2010 US\$) – All countries and economies* (table). Available at: <http://data.worldbank.org/indicator/NY.GDP.PCAP.KD> (accessed August 10, 2017).

Waldinger, R. 2015. "The cross-border connection: A rejoinder." *Ethnic and Racial Studies* 38 (13): 2305–2313.