

WORKING PAPERS

The Transformation of Canada's Temporary Foreign Worker Program

Ian O'Donnell & Mikal Skuterud

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Abstract

Despite repeated efforts to curtail its size, we show that Canada's Temporary Foreign Worker (TFW) Programs have undergone a transformation since 2000 in which TFWs now account for nearly three percent of total Canadian employment – a six-fold increase – and are increasingly skilled, employed on long-term permits, and likely to transition to permanent residency (PR). While TFW entries that are labour market tested appear to be meeting genuine labour shortages, 85 percent are exempt from labour market tests (LMTs), and the growth in LMT-exempt permits has exceeded the growth in TFWs who transition to PR status. We argue that the system requires greater transparency in identifying the locations and occupations of TFWs with LMT-exempt permits and in tracking their PR transition rates.¹

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Introduction

For nearly four decades Canada's Temporary Foreign Worker Program existed in the background of Canada's permanent immigration programs, falling under the radar of most Canadians. Introduced in 1973, the program enabled employers to recruit foreign workers with specialized skills, such as academics, business executives, engineers, as well as two groups of low-skilled migrant workers: seasonal agricultural workers and live-in caregivers.²

In 2012-2013, allegations of employer abuse of the program began to surface in the media.³ The media coverage revealed that the number of work permit holders had more than doubled between 2002 and 2013, driven in large part by a 2002 decision to expand eligibility to a larger set of low-skilled occupations requiring no more than a high school diploma.⁴ The low-skill program was further expanded in 2006 by increasing the maximum duration of work permits from 12 to 24 months, and a pilot program was introduced in 2007 providing employers in Alberta and British Columbia with expedited access to work permits for workers in 33 occupations (14 of which were low-skill) deemed to be facing acute shortages.⁵

The government responded to the growing controversy in April 2013, and again in June 2014, by introducing a number of measures intended to curtail the size of the program, including increasing the cost and rigor of the labour market test (LMT) used to determine if labour shortages are genuine, restricting temporary foreign workers (TFWs) to comprise no more than 10 percent of establishment workforces, and refusing to process applications where the unemployment rate exceeds 6 percent. The annual number of work permit holders subsequently declined by 20 percent over the following two years, leading corporate Canada to argue that the policy pendulum had swung too far in the opposite direction and was putting the Canadian economy at risk.⁶

An important innovation of the 2014 reform was to administratively separate work permits that do not require a LMT from the existing Temporary Foreign Worker Program (TFWP) into a new program called the International Mobility Program (IMP).⁷ The separation of LMT-exempt permits from the TFWP simultaneously achieved two objectives: it addressed calls for increased scrutiny of work permits for low-skilled workers, while at the same time providing a less onerous process for employers to access less controversial sources of foreign workers, such as temporary intra-company employee transfers and international student graduates of Canadian postsecondary institutions.

Following the 2014 reform, Canada's TFW Program (including both the TFWP and IMP) once again fell under the radar of most Canadians, despite that the number of permits issued between 2015 and 2019 saw an unprecedented increase. The lack of public attention to this

² The Seasonal Agricultural Worker Program (SAWP) was first launched in 1966, while the Caregiver Program has seen multiple incarnations beginning with the Foreign Domestic Movement Program introduced in 1981.

³ The earliest report of abuse was of a BC mine employing Chinese foreign workers (CBC News, "BC mine to hire only Chinese temporary workers for years," December 12, 2012). The following year CBC reported on abuse by the Royal Bank of Canada (CBC News, "RBC replaces Canadian staff with foreign workers," April 6, 2013) and in 2014, CBC shone light on McDonald's recruitment of foreign workers (CBC News, "McDonald's accused of favouring foreign workers," April 14, 2014).

⁴ The total number of permits issued increased from 134,000 in 2002 to 312,000 in 2013. The Pilot Project for Hiring Foreign Workers in Occupations that Require Lower Levels of Formal Training, known better as the "Low-Skill Pilot Project" was introduced in July 2002.

⁵ This list was extended to 21 occupations in 2008, including low-skill occupations in construction, food and beverage services and residential cleaning.

⁶ Kelsey Johnson, "Canadian Chamber of Commerce: Foreign Worker Program Hanging 'by its Fingernails'," iPolitics, April 16, 2015.

⁷ The 2014 reforms also renamed the tests "Labour Market Impact Assessment" (LMIA) from "Labour Market Opinion" (LMO).

development is likely explained, at least in part, by the fact that 85 percent of the overall 62 percent increase in annual permits were issued fell under the IMP program, and not under the original TFWP. Consequently, the nature of the growth is much less transparent. Unlike permits issued under the TFWP, which are heavily scrutinized, most IMP permits are open permits, allowing workers to work for any employer anywhere in Canada.⁸ Consequently the government's administrative data on these TFW inflows identifies neither the location nor occupation in which these workers are employed. Moreover, as with Canada's permanent immigration program, the number of streams has proliferated making the overriding TFW system increasingly complex to evaluate. Whether or not the intention is to obfuscate the data to mitigate controversy, that has been the effect.

We seek to shed light on the overall TFW Program and make transparent what we show amounts to a transformation of the system between 2000 and 2019. To do this, we address five main questions. First, has the TFW share of overall Canadian employment increased since 2000, and if so, does the increase primarily reflect growth in the number of TFWs entering Canada or an increase in the average duration of their work permits? Second, to what extent does the growth in TFW entries reflect work permits that are LMT exempt? Third, does the growth in TFW entries reflect an upskilling and increased specialization of TFW inflows, and is this increase commensurate with the increase in permits that are LMT exempt? Fourth, is there evidence that TFW entries that are labour market tested are, in fact, concentrated in labour markets where labour shortages are most acute? And fifth, has the propensity of TFWs to transition to permanent residence (PR) status increased over time? That is, to what extent does the increase in TFW inflows reflect the broader shift in Canada's immigration policy to a "two-step immigration" in which migrants, rather than landing in Canada as new permanent residents, first complete a probationary period as a TFW and subsequently transition to PR status?

In the following five sections of the article, we answer each of these questions in turn. Section 6 then summarizes the main findings and concludes with our policy recommendations for further improving the transparency and functioning of Canada's TFW Program in the years ahead.

TFW employment shares and permit durations

The fundamental challenge in running a TFW program is that foreign workers, particularly those from developing countries, are willing to accept jobs offering lower wage rates because their alternative options are less lucrative. In the language of economic theory, their "reservation wages" are lower. In addition, because their work permits are often tied to a single employer, their cost of job dismissal is higher than for native-born workers who can more easily take alternative jobs. Consequently, evidence suggests that TFWs are less likely to shirk on the job and complain about substandard working conditions. Employers, therefore, prefer TFWs over domestic recruits, which can lead to job displacement or wage suppression for Canadians competing for jobs with TFWs (Brochu, Gross, and Worswick 2020).

The extent to which TFW inflows may be having this type of adverse competitive effect on native-born workers depends critically on the share of overall employment comprised of TFWs, or what is known as the *penetration ratio*. Figure 1 combines data from two sources to estimate TFW employment shares in December of every year between 2000 and 2019. The stock of TFWs employed in Canada (the numerator in the ratio) are the number of individuals holding valid (unexpired) work permits on December 31 of each year, which are published by Immigration, Refugees and Citizenship Canada (IRCC), while total employment (the denominator) is from the Canadian Labour Force Survey (LFS).

⁸ In 2017, 33% of all IMP permits issued were employer-specific (*Canada Gazette*, Part I, 152(50): Regulations Amending the Immigration and Refugee Protection Regulations, December 15, 2018).

The results reveal a three-fold increase in the TFW employment share between 2000 and 2009, a period during which the government introduced a new stream for low-skill occupations known as the “Low Skill Pilot Project” (in 2002), but also extended the duration of low-skill permits from one to two years (in 2007), and introduced an expedited LMT process for 33 low-skill occupations in Alberta and British Columbia reducing processing times from five months to five days (also in 2007). With rising unemployment rates following the 2008 financial crisis, the expedited LMT program saw increased scrutiny leading the government to initially, in March 2009, impose requirements on employers to submit additional evidence of recruitment efforts and the results of those efforts, and in the following year to terminate the program entirely (Fudge and McPhail 2009; Gross 2014). Consequently, the TFW employment share declined in 2010, but rebounded again by 2011, reaching close to 2 percent in 2014. By then, the government of the day was besieged with controversy over program misuse, resulting in significant reforms aimed at curtailing inflows across the country, especially of low-skilled workers. Consequently, the TFW employment share dropped to 1.75 percent in 2015, at the same time that public scrutiny of the program waned. However, by 2016 inflows had once again begun to accelerate, so that by 2019 the TFW employment share reached an all-time high of nearly 2.75 percent.

It is worth noting, however, that work permits measure TFW employment imperfectly. Examining data from the Canadian Employer-Employee Dynamics Database (CEEDD), Lu and Hou (2019) find that only 60 percent of work permit holders in 2016 were issued a T4, implying they did not any have Canadian wage or salary earnings. Among high-skill workers with employer-specific work permits only 44 percent were issued a T4. The absence of a T4 does not, however, rule out employment in Canada. Work permit holders may be self-employed, including working in the gig economy; paid through a firm’s headquarters located outside Canada; employed in the shadow economy; or searching for work in Canada. In all cases, they have the potential to impact competition for jobs and wage/employment outcomes of domestic workers. Also, work permits underestimate TFW employment as they exclude many short-term visitors who are permit exempt, such as business visitors, foreign representatives and government officials, military personnel, performing artists, athletes, reporters, clergy, as well as international students employed in off-campus jobs during the course of their studies.⁹

A key innovation of the 2014 reforms was to administratively separate LMT-exempt permits from the TFW Program. In order to maintain the consistency of their time-series, IRCC revised their data series by recategorizing all pre-2014 LMT-exempt permits as IMP. Within this broad category are dozens of streams, but what has proven over time to be the biggest is the Post-Graduate Work Permit Program (PGWPP), first introduced in March 2003 to provide foreign graduates of Canadian postsecondary institutions with open work permits.

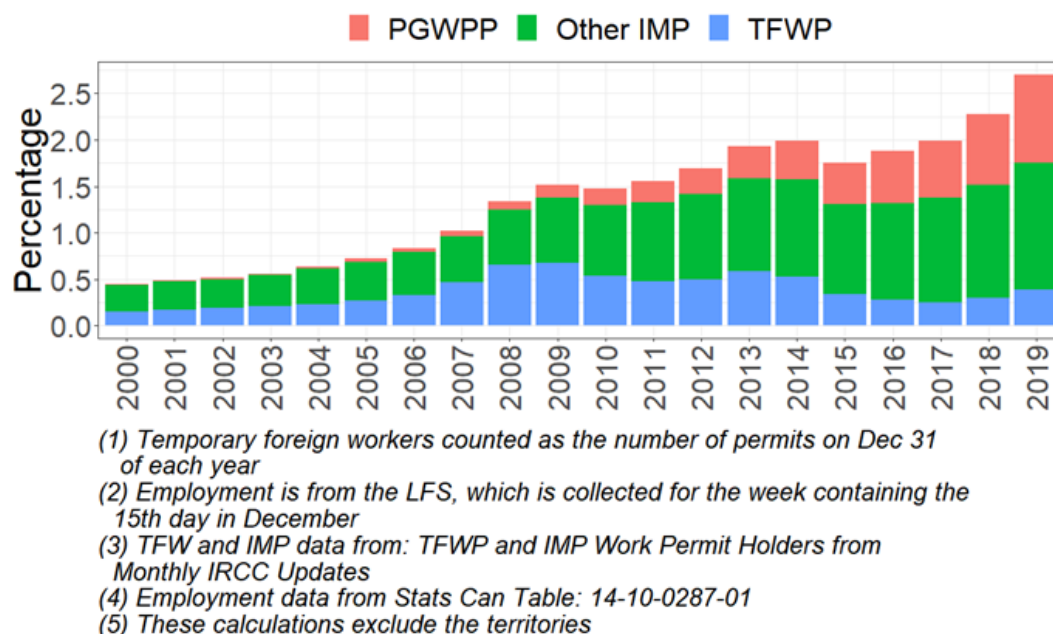
In Figure 1 we break down the TFW employments shares down by three main program categories: TFWP, PGWPP, and other IMP streams excluding the PGWPP.¹⁰ The results reveal

⁹ There are two technical discrepancies in these estimates worth noting. First, employment in the LFS is the number of Canadians aged 15 and over who reported having a job in the calendar week in December containing the 15th day, whereas the TFW stocks are for December 31. Second, the sampling frame of the LFS includes temporary residents, so the TFWs counted in the numerator of the ratio should, in principle, also be counted in the denominator. However, there is reason to believe that the LFS may under-sample TFWs, as a requirement for being surveyed is that respondents declare the dwelling in which they have been contacted by Statistics Canada is their “usual place of residence.” To the extent that they are under-sampled, TFW employment shares in Figure 1 will be overestimated. However, given that less itinerant TFWs are more likely to be sampled and that average TFW permit durations have tended to increase over time (as we show below), we expect that the increase in the TFW shares over time in Figure 1 is, if anything, underestimated.

¹⁰ The TFWP includes four main streams: High-Skill Occupations, Seasonal Agricultural Workers, Live-In Caregivers, and Low-Skill Occupations. The IMP is more complex containing dozens of streams with

that 90 percent of the six-fold increase between 2000 and 2019 reflects growth in TFWs with LMT-exempt permits from IMP streams. In fact, the TFWP employment share declined from 0.67 percent to 0.25 percent between 2009 and 2017 but rebounded slightly to 0.39 percent thereafter. Moreover, nearly one-half (47 percent) of the growth in the IMP share reflects growth in the PGWPP, which in turn reflects the nearly six-fold expansion of international student enrolments in Canada's colleges and universities between the 2001/2002 and 2018/2019 academic years (from 62,000 to 344,000). The policy initiative behind this growth can be traced back to a 2001 Government of Canada report on Canada's Innovation Strategy, which emphasized a desire to "support and facilitate a coordinated international student recruitment strategy led by Canadian universities" to "significantly improve Canada's performance in the recruitment of foreign talent." Associating Canada's TFW Program with migrant farm workers and live-in nannies, while once accurate, is clearly no longer.

Figure 1: Temporary foreign workers as a percentage of employment, December.



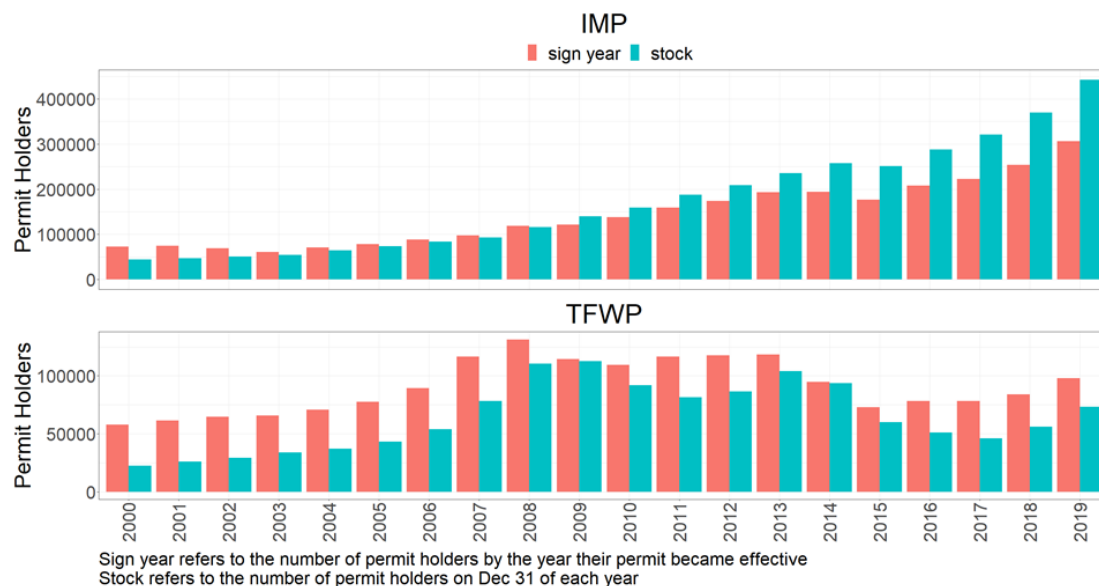
Another common misperception is that growth in the stock of TFWs employed in Canada entirely reflects an increase in the number of migrants entering Canada to work. As the data in Figure 2 reveal, much of the growth, especially in the IMP, reflects an increase in the average *duration* of work permits issued. Figure 2 shows two measures of TFWs: (i) the number of unique individuals who signed new work permits within a calendar year (inflow); and (ii) the number unique individuals with a permit on December 31 (stock). An increase in stocks relative to inflows over time is indicative of an increase in average permit durations, since the longer a TFW is in Canada, the more likely they are to be captured when the stocks are counted on December 31.

Examination of Figure 2 reveals that the average duration of IMP permits has increased over time. Up until 2008, the number of TFWs entering Canada on IMP permits in a year exceeded the number who were present on December 31, suggesting that most permits were

varying regulations on permit eligibility, durations, and renewals. For an overview of the post-2014 see Government of Canada, "Overhauling the Temporary Foreign Worker Program," June 2014.

less than one year in duration. However, in 2009 that difference reversed, and stocks have increased relative to inflows in every year since. The relative growth in stocks has been especially pronounced since 2015, which is consistent with the relative growth in PGWPP permits, which are usually three years in duration, longer than most other permit types.

Figure 2: Number of permit holders and December 31 stocks of temporary foreign workers



Unlike the IMP, the TFWP inflows in the bottom panel of Figure 2 consistently exceed TFWP stocks, suggesting that average durations of TFWP permits are shorter than IMP permits. Seasonal migrant farm workers account for much of this, as well as many short permits in the film and entertainment sector. However, a similar relative growth in stocks is evident in TFWP permits up to 2009, especially after 2006 when the maximum duration of work permits in the Low-Skill Pilot Project was extended from 12 to 24 months. But with the termination of this program in 2009, average permit durations declined again so that in 2017 they appear almost identical to 2000.

Taken together, the results in Figure 1 reveal that an important source of the six-fold increase in TFW employment shares in Figure 1 reflects an increase in the amount of time that TFWs are living and working in Canada before they either leave the country or make a PR transition. Unfortunately, with stocks only being measured at one point in the year (December 31), we are unable to determine precisely how much of the TFW employment share reflects permit durations. But given that December stocks experienced a nearly eight-fold increase (67,000 to 515,000) compared to a three-fold increase in entries (131,000 to 404,000), it is not unreasonable to believe that more than one-half of the increase in the TFW employment shares, and perhaps substantially more, reflects an increase in the average duration of TFW permits.

Declining use of LMTs

To mitigate the potential adverse employment and wage effects of TFW inflows on domestic workers, but still provide employers with access to foreign workers where there are genuine labour shortages, governments around the world rely on labour market tests (LMTs) (Ruhs 2013). These tests require employers applying for TFW work permit to demonstrate that efforts have been made

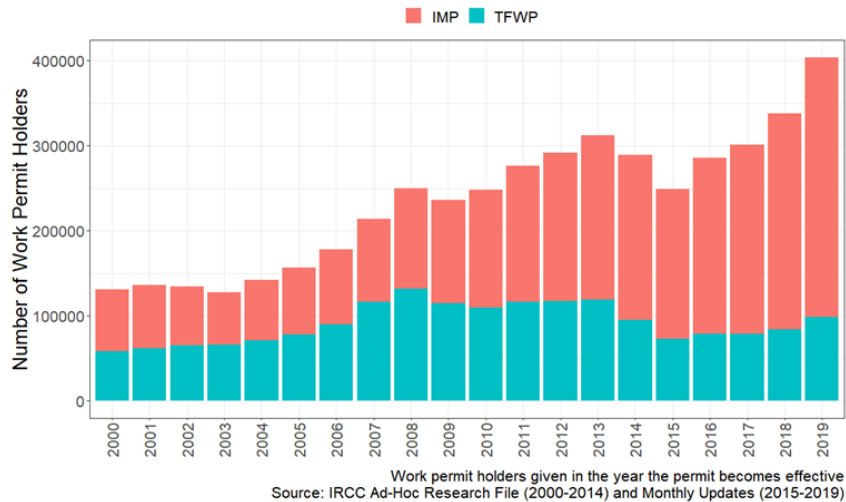
to fill jobs domestically. Such tests are, however, imperfect due to the principal-agent problem that governments have no way to monitor the search effort of employers or of knowing what a sufficient effort level is. Moreover, in skilled occupations, tests are necessarily highly subjective in determining whether domestic applicants were, in fact, insufficiently qualified for the jobs filled by TFWs.

Concerns about these adverse effects are more acute in low-skill labour markets. This reflects two main factors. First, since anyone with a high school diploma or less are, by definition, qualified for these jobs, evidence of excessive involuntary unemployment among domestic workers in the local labour markets where TFW inflows exist is seen as unacceptable. Second, whereas downward pressure on wages of high-skill workers serves to reduce wage inequality, weaker wage growth for low-skill workers due to foreign competition exacerbates it (Aydemir and Borjas 2007). Given these two considerations, it is not surprising that the criticisms that motivated the 2014 reforms were spurred by concerns over the recruitment of low-skill TFWs, in particular in the fast-food industry.¹¹

We have already seen that 90 percent of the six-fold increase in the TFW employment share between 2000 and 2019 reflects growth in workers with IMP permits, which are by definition LMT exempt. However, these employment shares are based on December stock populations, which do not count seasonal workers with permits under one year in duration. These short-term permits are especially common in the agricultural sector.

In Figure 3 we examine what percentage of all TFW *entries*, instead of stocks, are LMT exempt (similar to our inflow measure in Figure 2).¹² The results show that 85 percent of the three-fold increase in TFW entries between 2000 and 2019 were TFWs with LMT-exempt permits. By 2019, three-quarters of all entries were LMT exempt, compared to slightly more than one-half in 2000 and less than one-half in 2007, when the Expedited LMO Pilot Program was introduced in Alberta and British Columbia producing a big influx of TFWP entries.

Figure 3: Number of work permit holders by program



¹¹ Polanco (2019) provides an in-depth qualitative analysis of TFWs, mostly from the Philippines, employed by Tim Horton's establishments between 2009 and 2011.

¹² An alternative measure of inflows is the total number of permits issued within a calendar year. This measure tends to exceed the entries, as it is possible for unique individuals to hold more than one work permit in a year, or even simultaneously. However, the differences are small and do not change any of our findings.

Recall that the IMP was created in 2014. To produce the data underlying Figure 3, it was necessary for IRCC to recategorize all 2004-2014 permits as either IMP or TFWP. An issue is whether the data accurately assigned permits that required a LMT (called a “Labour Market Opinion” or LMO before 2014 and a “Labour Market Impact Assessment” or LMIA after) to TFWP and permits that did not require a LMT to IMP. To gauge the potential measurement error, we estimated the LMT-exempt shares using IRCC’s 2012 publication of Facts and Figures (published before the 2014 reforms), which provides entries by detailed program streams, and compared them to estimates from the 2015 publication (published after the 2014 reforms). While the estimates are not identical, for the years with data provided in both publications (2006-2012), they are always within 5 percentage points of each other and both series show a clear upward trend.

Skill level of TFW population

We now examine to what extent the growth in TFW entries (TFWP and IMP), especially since 2015, reflects an increase in the skills and specialization of TFWs, perhaps due to policy changes opening eligibility to a larger set of occupations. Where the required skills of a job are highly specialized, it is less likely that filling the job with a TFW crowds out opportunities for jobless domestic workers, which might justify the declining use of LMTs. However, it is also possible that employers who recruit workers in particular occupations are less likely to require a LMT today than they were in the past. In other words, the decline in the LMT share might reflect a policy shift away from the use of LMTs even within occupations.

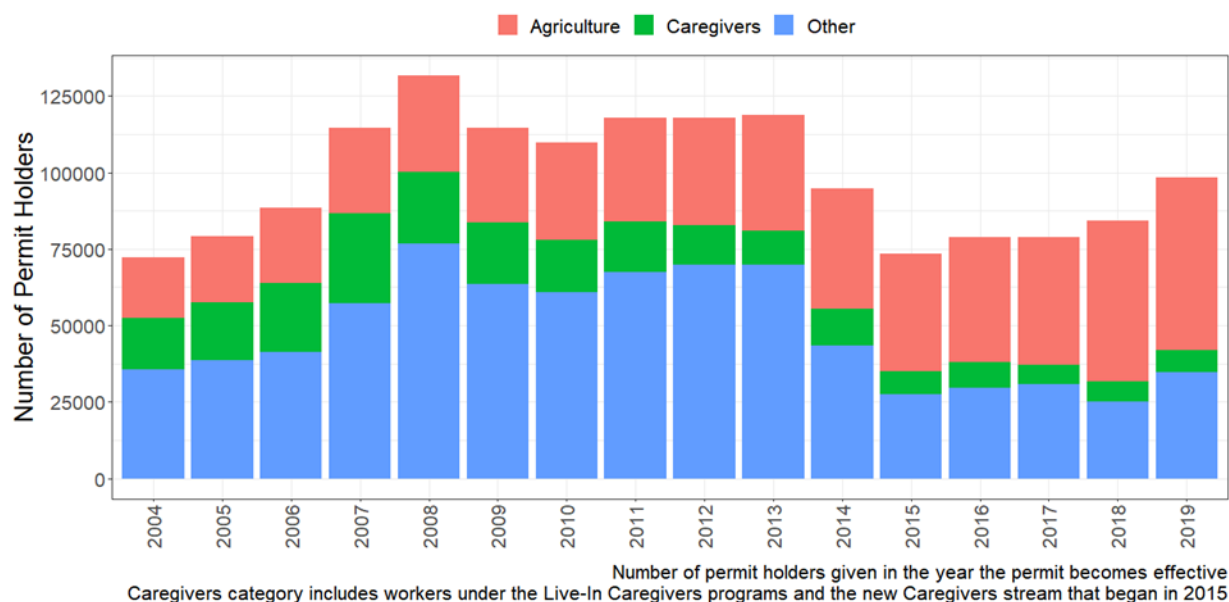
Identifying the skills of TFWs and skill requirements of their jobs is difficult because LMT-exempt inflows face much less scrutiny. In fact, many do not require any work permit, providing us with no information in the administrative data about the markets these individuals are working in. We therefore begin our analysis by focusing on TFW entries through TFWP streams, where work permits and LMTs are required. We then turn our attention to new LMT-exempt streams. Finally, we rely on data from the 2006 and 2016 Canadian Censuses, which samples non-permanent residents, to examine changes over time in the occupational distribution of temporary residents who report working in Canada.

a) TFWP streams

The historical *raison d’être* of Canada’s TFW Program was to enable Canadian employers to employ foreign labour in two sectors: agriculture and personal caregiving. Economic globalization and increasing migration flows in the 1990s, and the extension of eligibility to more low-skill occupations in the 2000s, broadened the mix of TFW occupations. But growing concerns about adverse crowding-out effects on the domestic labour force following the 2008 financial crisis led to the 2014 reforms intended primarily to curtail low-skilled inflows. Was this objective achieved? What has happened to the skill mix of TFWs entering through streams requiring a LMT since the 2014 reforms?

We begin our analysis by charting annual TFWP entries between 2004 and 2009 through three streams: (i) agricultural workers¹³; (ii) caregivers¹⁴; (iii) and all others.¹⁵ The results in Figure 4 reveal that 69 percent of the 82 percent growth in TFWP entries between 2004 and 2008 was in occupations outside of agriculture and caregiving.¹⁶ This growth overwhelmingly reflects the Low-Skill Pilot Project, introduced in 2002, as well as the Expedited LMO Pilot introduced in Alberta and British Columbia in 2007.

Figure 4: TFWP work permit holders by program stream



However, with the increased scrutiny of these low-skill TFW programs, entries outside of agriculture and caregiving declined between 2008 and 2009 and were stable until the 2014 reforms, after which they declined further. In fact, by 2018 the number of TFWP entries in the “other” category were 67 percent lower than in 2009, when they peaked. Similarly, entries of caregivers declined by 72 percent between 2007 and 2019.¹⁷

¹³ The largest program stream within this group is the Seasonal Agricultural Worker Program (SAWP), first established in 1966. SAWP workers must originate from a designated central American or Caribbean country and can only hold permits that are a maximum of 8 months. However, agricultural TFWs also enter through the Agriculture Stream, Low-Wage Stream, and High-Wage Stream. Unlike the SAWP, permits in these streams can be up to 24 months in duration. For more details see: <https://www.canada.ca/en/employment-social-development/services/foreign-workers/reports/primary-agriculture.html>.

¹⁴ The Live-in Caregiver Program (LICP) was established as a separate stream and named the LICP in 1992 (Fudge and MacPhail 2009). Unlike the SAWP, it provided a designated pathway to permanent residency after working full-time for two years. In November 2014, the LICP was replaced with the new Caregiver Program which provides two new pathways to PR.

¹⁵ Unfortunately, distinguishing TFWP entries by specific program streams is not possible with the published IRCC data before 2004.

¹⁶ Data by TFWP program stream are, unfortunately, only available back to 2004.

¹⁷ In December 2006, the maximum duration of work permits was extended from one year to three years and three months (see Citizenship and Immigration Canada, “Annual Report to Parliament on Immigration,”

In sharp contrast, entries of agricultural TFWs increased by 187 percent between 2004 and 2019. Consequently, by 2019 the share of TFWP entries -- those requiring a LMT -- comprised of agricultural workers stood at 58 percent, compared to 27 percent in 2004 and only 24 percent in 2008. Zhang, Ostrovsky and Arsenault (2021) examine the employment penetration of foreign workers in the agricultural sector using CEEDD database. Their estimates suggest a 195 percent increase in TFWs employed in agriculture between 2005 and 2017 and an increase in their share of total agricultural sector employment from 6.2 to 16.1 percent. Clearly, the sector is exceptionally reliant on TFWs and this reliance has increased significantly over time.

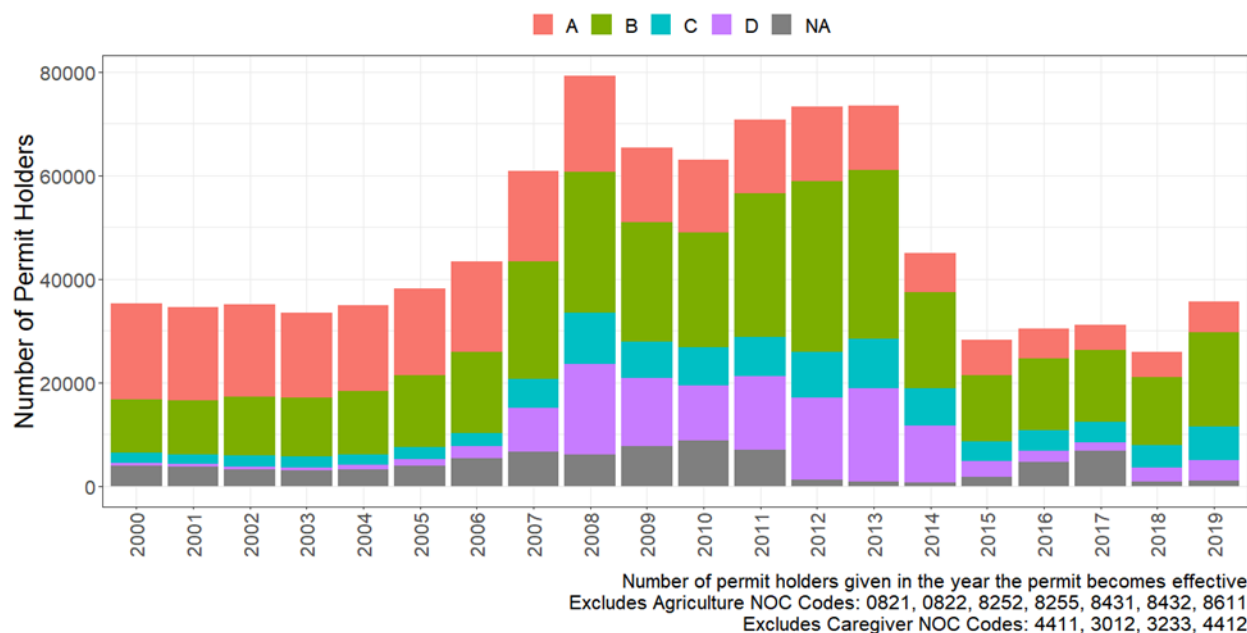
While Canada's TFW Program has historically been associated with low-skill agricultural workers and caregivers, employers of high skill workers in various sectors have for many decades relied on the program to recruit foreign workers on short-term contracts or to provide a bridge to permanent settlement for skilled foreign workers hired on permanent contracts. Most notable, universities recruiting new faculty have always been, and continue to be, required to satisfy LMTs prior to receiving temporary work permits for new foreign hires.

In Figure 5, we chart data from IRCC on the occupations of TFWP entries to examine changes over time in the skill composition of the "other" group in Figure 4. Specifically, we use Employment and Social Development Canada's (ESDC) mapping of 2-digit National Occupational Classification codes to four skill levels: A, B, C, and D. These skill levels are based on the educational requirements of jobs. A-level occupations require a university degree; B-level requires 2-3 years of post-secondary education, or 2-5 years of apprenticeship training, or 3-4 years of secondary school and more than two years of training or work experience; C-level requires some secondary school education and up to two years of training or work experience; and D-level requires no formal education and a short period of on-the-job training. For most PR immigration programs, such as the Canadian Experience Class (CEC) Program, work experience in A- and B-level occupations is deemed as skilled, while C- and D-level work experience is low skilled.

As noted above, TFWP entries outside of agriculture and caregiving increased substantially up to 2008. However, Figure 5 reveals that this increase was far from entirely driven by entries of low-skill TFWs. In fact, 39 percent of the 125 percent growth in TFW entries outside agriculture/caregiving between 2000 and 2008 was comprised of high-skill workers. But it was the growth in low-skilled entries that spurred the controversies and pressures to curtail the "Low-Skill Pilot Project." At their peak in 2008, low-skill TFWs outside agriculture/caregiving accounted for no more than 11 percent of all TFW entries (TFWP and IMP streams). But the combination of two factors heightened concern about these entries -- rising unemployment rates in the domestic population and the fact that more than two-thirds (68 percent) of the growth in these low-skilled entries between 2000 and 2008 were in jobs in the lowest skill category requiring no formal education.

2007, p.16). In response to rising reports of exploitation in 2009, the government moved to improve protections for live-caregivers. In April 2010, they introduced requirements for employers to pay workers' travel and accommodation costs; private medical insurance until eligible for provincial coverage; hours of work, including overtime hours; holiday and sick leave entitlements; and any recruiting fees paid to third-party recruiting agencies. The extension of contracts and new regulations presumably account for the declining entries since 2007.

Figure 5: TFWP entries of unique permit holders by skill level, excluding agriculture and caregivers.



But what has the impact been of the 2009 and 2014 policy curtailments of these low-skill inflows outside of agriculture and caregiving? The low-skill (C- and D-level) share of total entries peaked in 2014 at 41 percent, and subsequently dropped to 18 percent in 2017, but has since rebounded back up to 29 percent. This suggests that efforts to curtail low-skill inflows were initially successful but may increasingly be insufficient. Examining where growth has been largest since 2015 reveals significant increases in 3 main occupations: transport truck drivers (36 percent of the net growth); labourers in food, beverage, and associated products processing (31 percent); and labourers in fish and seafood plants (27 percent).¹⁸ The question is what pressures are driving this growth and why are domestic labour markets unable to satisfy this labour demand.

Using published data from ESDC on the names of employers issued positive LMIs, we can examine the employer concentration of TFW employment outside agriculture/caregiving.¹⁹ As reported in Table 1, the number of businesses employing TFWs changed little between 2016 and 2018 but doubled in 2019 to nearly 25,000. However, the number of positions did not increase

¹⁸ See McLean (2015) and Marschke, Kehoe and Vandergeest (2018) for qualitative analyses of TFW employment in Canadian BC long-haul trucking and Atlantic seafood processing company, respectively. The growth in TFW employment in Atlantic seafood processing reflects a March 2016 decision to reverse the 2014 restriction that TFWs comprise no more than 10 percent of an employer's low-skilled workforce (Knott 2016). Other occupations contributing to the growth include landscaping and grounds maintenance labourers; construction trades helpers and labourers; process control and machine operators in food, beverage, and associated products processing; operators and attendants in amusement, recreation, and sport; residential and commercial installers and servicers; and other labourers in processing, manufacturing, and utilities.

¹⁹ The data are published on a quarterly basis and since 2016 have included employer names and NOC codes of the approved positions. A complication in merging the data across quarters at the employer level are inconsistencies in the recording of employer names. Consequently, our estimates of the concentration of TFWs across employers are, if anything, underestimated. The data are available here: <https://open.canada.ca/data/en/dataset/90fed587-1364-4f33-a9ee-208181dc0b97>.

proportionally, so the average number of TFWs employed declined. This implies a decreasing concentration of TFW positions across employers, which is also evident in the first three columns, where we report the percentage of all positions among the top 10, top 50, and top 100 employers. In all cases, 2019 saw an acceleration of a decline that was evident between 2016 and 2018. For example, by 2019, the top 100 employers of TFWs accounted for 16.5 percent of all TFW positions, compared to 26.3 percent in 2016. What explains this increase in the number of employers using the TFWP in 2019? Does it reflect exceptional labour market tightness in 2019? Or does it reflect that more employers are learning how to leverage the program to reduce labour costs and boost profits.

Table 1: Concentration of approved LMIA's across employers, excluding agriculture/caregiving

Year	Concentration (%)			Number of employers	Number of positions	Average number of positions
	Top-10	Top-50	Top-100			
2016	8.2	19.6	26.3	12,818	29,370	2.29
2017	8.2	19.1	25.2	14,916	30,263	2.03
2018	6.5	17.2	24.1	13,444	29,392	2.19
2019	5.1	11.8	16.5	24,163	49,056	2.03

Source: <https://open.canada.ca/data/en/dataset/90fed587-1364-4f33-a9ee-208181dc0b97>

Looking over the full 2000-2019 period, the number of TFWP entries outside agriculture/caregiving has changed little (35,263 to 35,709). Measured as a proportion of the Canadian employment -- the TFW penetration rate -- entries requiring LMTs have therefore fallen substantially. However, these entries have also become more unskilled as the low-skill share has increased from 7 to 29 percent. To understand how that has happened, we turn to the IMP program.

b) IMP

While the stated objective of the TFWP is to provide a “last resort for employers to fill jobs for which qualified Canadians are unavailable,” the IMP is to “advance Canada’s broad economic or cultural interests.”²⁰ The IMP therefore seeks to achieve much broader objectives but what exactly those objectives are is far from clear. The three main program streams are intracompany

²⁰ See Government of Canada, “Overhauling the Temporary Foreign Worker Program,” June 2014.

transfers, PGWPP, and spouses of students and skilled workers (see Vosko 2020 for a recent overview).

We have seen that the growth in the share of TFWP entries outside agriculture/caregiving that are low skill in part reflects growing entries of transport truck drivers and foreign workers employed in food processing, especially fish and seafood. However, Figure 5 shows it also reflects declining numbers of skilled TFWs entering through TFWP streams, especially in occupations requiring a university degree (skill level A). What are these occupations? And what has happened to these entries? Have they ended or shifted to IMP streams that are LMT exempt and therefore less costly for employers?

To answer these questions, we begin by identifying the skilled occupations that saw the largest decreases in annual TFWP entries between 2000 and 2019. The results reveal that the most important source of the decline are TFWs employed in the film and entertainment industry as musicians, singers, actors, comedians, producers, directors, choreographers, and technical occupations in motion pictures, broadcasting and performing arts. Investigating further reveals a policy decision in February 2016 making work permits in the film and entertainment industry, which tend to be short duration, LMT-exempt as of February 2016.²¹ Hence, part of the IMP shift reflects new LMT exemptions, in this case for skilled workers with short-duration permits.

Another source of LMT-exempt work permits for skilled workers is the Global Skills Strategy Program (GSSP) introduced June 2017, which promises expedited processing of IMP work permits. This program includes streams that are not only LMT-exempt but exempt from requiring any work permit. An example is short- and definite-term positions at universities, including visiting positions.²² There is also a program within the GSSP -- the Global Talent Stream Program (GTSP) -- targeting high-skill workers which is not LMT exempt. University professors/lecturers, information technology analysts, and computer programmers are the biggest occupation groups within the GTSP. However, our analysis of TFWP permits issued suggests no more than 4,000 of roughly 40,000 GSSP entries up to the end of 2019 were GTSP entries. This means that the vast majority of the GSSP entries were LMT exempt. Although there is no way to identify the occupations of these entries, eligibility requirements mean they were either management jobs or jobs requiring a university degree (A level). It is also likely that if these same TFWs had been recruited before June 2017, they would not have been LMT exempt, suggesting again, that the shift towards LMT-exempt work permits does not entirely reflect the upskilling of TFW entries where LMTs are seen as less importance, but also the waiving of LMT requirements within some occupations.²³

However, the biggest source of the increase in TFW employment in Canada that is LMT exempt is, by far, international students, and their spouses.²⁴ There are two programs enabling foreign students to work in Canada. The first is the PGWPP discussed in Section 2, which

²¹ The policies are officially known as LMIA exemptions C14 and C23 under section 205 of the Immigration and Refugee Protection Regulations. For details see: <https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/operational-bulletins-manuals/updates/2016-02-03.html>

²² Work permit exemptions are provided for high-skilled workers employed in Canada for under 30 days in a year and for researchers at public universities staying for less than 120 in a year.

²³ For a full list of TFWs eligible for LMIA exemptions see: <https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/operational-bulletins-manuals/temporary-residents/foreign-workers/exemption-codes.html>. All permits issued under the IMP must fall under one of the exemption codes listed here.

²⁴ The large increase in the labour supply of foreign students in Canadian labour markets was anticipated by Williams et al. (2015). Their analysis of international student growth in Ontario's postsecondary education system between 2000 and 2012 leads them to conclude: "We expect that these changes (elimination of OCWPP and extension of PGWPP permits) will lead to more students working in the labour force during and after their studies, resulting in this population becoming an increasing component of the Temporary Foreign Worker Program."

accounts for roughly one-half of the 2000-2019 growth in IMP entries. However, because these permits are LMT-exempt there is no way for us (or the government) to know what proportion are employed in high-skilled jobs. For students seeking PR status, employment in a high-skill occupation is important, but this in no way rules out that many are employed in low-skill occupations.

The second program enabling foreign students to work in Canada is the former Off-Campus Work Permit Program (OCWPP). This program, introduced in April 2006, allowed foreign students to work off-campus for up to 20 hours per week. Prior to June 2014, a work permit was required, but since then the program has been not only LMT-exempt but also permit-exempt. Moreover, during scheduled study breaks (reading weeks, summer and winter holidays), all restrictions on weekly work hours are waived. This means current foreign students, even those employed in full-time jobs, are not included in any of the TFW administrative data from IRCC or ESDC. Not only are we unable to identify what types of jobs they are employed in during their studies, we do not know proportion are employed at all.

A key objective of the OCWPP and PGWPP is to attract international students. For some migrants, their migration intent is solely to obtain a foreign educational credential, which may have a high return in their origin country (Co, Gan, and Yun 2010). But for others, it is to obtain a foreign educational credential and foreign work experience, either to pay off student debt and increase their earnings potential in their origin country or to enable a transition to PR status. Shutting down these programs would no doubt adversely impact foreign student enrolment, and in turn tuition revenues of Canadian postsecondary institutions.

However, by permitting foreign students to be employed off-campus during their studies without a work permit, it is possible that the government has increased demand for student visas among migrants with no intention of completing a Canadian educational credential. As of June 2021, there were 1,604 postsecondary institutions in Canada eligible to recruit foreign students on study permits, known officially as Designated Learning Institutions (DLIs).²⁵ While students at all these institutions are eligible to work off-campus during their studies, only graduates from publicly funded colleges and universities, which comprise 49 percent of DLIs, are eligible for three-year open work permits under the PGWPP.

To gauge to what extent students may be accessing the Canadian labour market through student visas, we compared: (i) December 31st stocks of study permit holders issued to postsecondary students; with (ii) postsecondary enrolments from Statistics Canada's Postsecondary Student Information System (PSIS).²⁶ The results reveal a growing gap between the number of study permits issued and postsecondary enrolments since 2009. While study permit and enrolment counts are roughly similar in every year between 2000 and 2009, study permits issued have in every year since (except 2013) grown at a faster pace than enrolments so that in 2018 there were 73,000 (roughly 20 percent) more foreign students with study permits in Canada than foreign students enrolled in postsecondary education.

One explanation for the growing gap is growing foreign student enrolments at private vocational colleges, which are not counted in the PSIS enrolment data, and in June 2021 comprised one-half of DLIs. The question is whether foreign student enrolments in these institutions have grown enough since 2009 to fully account for this gap. While we are unaware of any official statistics, Berger (2009) reports that there were an estimated 156,000 students enrolled in private career colleges in 2009, while Martin and MacLaine (2016) claim there were an estimated 170,000 in 2016. This suggests the foreign student share of enrolments would have had to grow enormously to account for the growing gap between permits and enrolments.

²⁵ The complete list is available here: <https://www.canada.ca/en/immigration-refugees-citizenship/services/study-canada/study-permit/apply.html>.

²⁶ For the study permit data, see: <https://open.canada.ca/data/en/dataset/90115b00-f9b8-49e8-afa3-b4cff8facaee>. For the postsecondary enrolment data, see Statistics Canada table 37-10-0018.

An alternative explanation is that increasing numbers of TRs working in Canada on student visas are not enrolled in the academic programs through which they accessed their student visas. Indeed, there are reports of private colleges with minimal entry requirements using access to Canadian labour markets to lure foreigners with no desire or intention of completing educational programs.²⁷ This is possible because study permits are typically obtained without proof of enrolment (only a letter of acceptance is required) and because students may drop out of programs without informing IRCC.²⁸

c) Census data

With the exceptional growth in IMP entries, and hence LMT-exempt and open work permits, the government administrative data is increasingly uninformative of the types and locations of TFWs' jobs. An alternative approach is to use Census data, which samples non-permanent residents and queries the occupations of those who were employed in the preceding week.²⁹

Before examining the data, note that there are inconsistencies in the how TR stock populations in the Census and administrative data are counted. First, only TRs with a usual address in Canada are sampled in the Census, which will tend to exclude TRs with short-duration permits. Second, the IRCC reports stocks on December 31 of every year, while the Census is conducted quinquennially in mid-May. Third, the TR population in the Census may also capture some undocumented residents, including former TRs with expired study and work permits.

Table 2 below reports estimates from the 2006 and 2016 Census data. The results suggest that the total TR population age 15 and over who were employed increased from 110,160 in 2006 to 206,700 in 2016, an 88 percent increase. In comparison, the December 31 stock of TFWs in the administrative data increased from 137,550 (83,600 IMP + 53,950 TFWP) in 2006 to 339,300 (288,225 IMP + 51,075 TFWP) in 2016, a 147 percent increase. Therefore, the Census appears to undercount the TR population and the difference is growing over time. What accounts for the difference? We suspect the lower Census counts mostly reflect TFWs with short-duration permits who do not deem their current residence to be their "usual residence." However, the growing

²⁷ See Kathy Tomlinson, "The foreign students who say they were lured to Canada by a lie," *Globe and Mail*, June 26, 2019; Nicholas Keung, Isabel Teotonio and Grant LaFleche, "Thousands of international students cited in government report for breaking rules," *Toronto Star*, November 17, 2019; and Nicholas Hune-Brown, "The Shadowy Business of International Education," *The Walrus*, September/October 2021.

There are other reasons for student permit and enrolment not to line up perfectly, but all are unlikely to account for the growing gap. They are: (i) enrolments are based on a snapshot date between September 31 and December 1, so they do not line up perfectly with permits (this matters more for colleges, which have a continuous intake of students and shorter programs); (ii) enrolments are based on program counts and not student counts (if a student is enrolled in more than one program as of the snapshot date, then all of their programs are included in the count); and (iii) study permits are not required for academic programs that are 6 months or less.

²⁸ There are other reasons for student permit and enrolment not to line up perfectly, but all are unlikely to account for the growing gap. They are: (i) enrolments are based on a snapshot date between September 31 and December 1, so they do not line up perfectly with permits (this matters more for colleges, which have a continuous intake of students and shorter programs); (ii) enrolments are based on program counts and not student counts (if a student is enrolled in more than one program as of the snapshot date, then all of their programs are included in the count); and (iii) study permits are not required for academic programs that are 6 months or less.

²⁹ Counts of TR stock populations from the Census and administrative data will vary for a number of reasons, including: (i) IRCC reports stocks on December 31, while the Census is conducted in mid-May; (ii) only TRs with a usual address in Canada are sampled in the Census; and (iii) the Census, unlike the administrative, may also capture undocumented residents.

difference is more likely to reflect holders of open work permits, such as spouses and foreign student graduates, that were not employed in the Census reference week, but may have been seeking employment. As open permits have become more common, the difference has grown. Indeed, when we include non-employed TRs, the Census TR counts exceed the administrative data by considerable margins.

What does the Census data suggest has been happening to the skill levels of TFWs' jobs over time? Among all employed TFWs, the data suggest that there has been an upskilling. Whereas 60 percent of TFWs in 2006 were employed in skilled jobs, by 2016 that number had increased to 67 percent. This is consistent with policy efforts to curtail low-skill TFWP entries in 2009 and 2014, as described above. It is also consistent with the general shift toward LMT-exempt permits (IMP), which tend to be for higher skill workers where there is less concern about crowding-out effects on domestic workers.

Table 2: Employment in temporary resident population

	2006		2016	
<i>Individuals age 15+</i>				
Employed - skill 0/A/B	66,405	0.291	139,072	0.329
Employed - skill C/D	43,764	0.192	67,628	0.160
Not employed	118,346	0.518	215,885	0.511
Total	228,515		422,585	
<i>Students age 15+</i>				
Employed - skill 0/A/B	16,870	0.188	32,001	0.174
Employed - skill C/D	8,101	0.090	25,777	0.140
Not employed	64,630	0.721	126,298	0.686
Total	89,600		184,076	

Source: 2006 and 2016 Censuses (PUMFs)

Nonetheless, the Census data suggest that one-third of employed TFWs were employed in low-skill jobs by 2016. We have seen that 90 percent of the growth in the TFW employment share between 2000 and 2019 was driven by IMP entries, and roughly one-half of this increase reflects the PGWPP. What proportion of international students are employed in low-skilled jobs, and has this been changing over time? In addition to identifying TRs' employment status and occupations, the Census asks all respondents if they were enrolled in part- or full-time education at any time since September of the previous year. Restricting attention to the sample of school attenders, we find that 28 percent were employed in 2006 and 31 percent in 2016. Moreover, the share who were employed in jobs not requiring a high school diploma increased by nearly 50 percent (32 to 45 percent).

Does this growth in low-skill foreign student employment primarily reflect off-campus employment during studies or post-graduation jobs (PGWPP)? Recall that the OCWPP was launched in April 2006, but in its initial incarnation required foreign students to obtain work permits, which would not have allowed them to work legally off-campus before the May 2006 Census collection date. Moreover, most holders of PGWPP permits, which were two years in duration in May 2006 and three years in May 2016, would not have been enrolled in school in the previous nine months. This suggests that much of the increase in low skill employed between 2006 in 2016 reflects off-campus employment of enrolled foreign students. Indeed, 52 and 57 percent of the students in 2006 and 2016, respectively, did not have a postsecondary credential. And among

those with a postsecondary credential, 58 and 62 percent in 2006 and 2016, respectively, obtained that credential outside Canada making them ineligible for the PGWPP. Nonetheless, whether employed off-campus during their studies or through the PGWPP, the Census data suggests we are seeing rising low-skill employment in Canada's foreign student population. And because these students are either permit-exempt or have open work permits, this employment faces much less public scrutiny than low-skill TFWs entering through TFWP streams.

In summary, TFW entries since 2000 have, as a whole, seen a shift towards LMT-exempt permits and more skilled employment. This shift reflects three phenomena. First, policy changes in 2009 and 2014 intended to curtail the access to low-skill TFWs through the TFWP, including increasing cost of the LMT process. Second, growth of IMP streams targeting high-skill workers, most notably the GSSP providing two-week processing of LMT-exempt applications at skill levels 0 and A. Third, a movement of short-term positions that required LMTs prior to the 2014 policy overhaul, but are now exempt, most notably film and entertainment workers and short-term visitors. The significance of this shift is that for an increasing share of TFWs in Canada there exist pathways to PR status. In Section 5 we evaluate these transitions, but first we examine to what extent ongoing TFWP entries appear to be filling genuine labour shortages.

Job vacancy and domestic unemployment rates

The LMT process is intended to ensure that TFWP entries are limited to labour markets where there are genuine shortages. Is it achieving this objective? In this section we examine to what extent TFW penetration rates are related to the tightness of the labour markets that TFWs are entering. Fortunately, for TFWs entering through the TFWP we observe their occupations and locations of jobs. In addition, as of the second quarter of 2015, data from Statistics Canada's Job Vacancy and Wage Survey (JVWS) allow us to measure labour demand.

We define a labour market as a skill level (A, B, C, or D) in a province. To measure labour market tightness, we construct quarterly vacancy-unemployment ratios using the JVWS and estimates of unemployment levels from the Labour Force Survey (LFS).³⁰ To identify the skill level of vacant jobs, we use the minimum skill level sought, and to identify the skill level of unemployed workers, we use their reported highest level of educational attainment.³¹ The vacancy-unemployment ratio is the total number of job vacancies in a particular skill-province cell divided by the number of unemployed workers (jobless workers who are seeking a job). TFWP entries in the 2015-2019 period were almost entirely in 4 provinces – Ontario, Quebec, Alberta, and BC –

³⁰ Job vacancy and unemployment level data are from are from Statistics Canada tables 14-10-0328-01 and 14-10-0019-01, respectively. To create quarterly unemployment levels from the monthly data, we take the unweighted average of the 3 monthly values.

³¹ An alternative approach to identifying skill levels would have been to use the occupations of vacancies and of unemployed workers' last jobs. However, occupations of unemployed workers is not identified for unemployed workers who have been jobless for more than 1 year or for new labour market entrants. In addition, it is well known that occupation information, especially in data sources like the LFS with high rates of proxy responses, contain considerable measurement error. To map education codes to skill level we use: skill level A is Bachelor's degree or above; B is any postsecondary; C is high school graduate; and D is less than high school graduate. A limitation of the LFS is that it samples TRs and the publicly accessible data we use does not exclude TRs. However, unemployment rates in the TR population should be minimal.

so we restrict our analysis to these provinces.³² This gives us 16 observations (4 skill levels by 4 provinces) for each of 19 quarters, providing us with a balanced panel of 304 observations.³³

In Figure 6, we plot the data. TFWP entries are normalized by measuring their share of the overall province-skill labour force (number of employed plus unemployed). The results reveal that TFWP entries do indeed tend to be higher in tighter labour markets. The simple least squares line of best fit implies an elasticity of 0.52, meaning that a 10 percent increase in labour market tightness is associated with a 5.2 percent increase in the TFW share.³⁴ Different data-point markers for each skill group reveal that the correlation is almost identical within and between skill groups (the estimated elasticity is 0.46 when we condition the least squares regression on skill groups).³⁵

Figure 6: Scatterplot of labour market tightness and TFWP penetration ratios, 2015Q2-2019Q4



Of course, it is possible that national-level macro conditions are producing a spurious correlation between TFW entries and labour market tightness. To ensure this is not driving the correlation in Figure 6, Table 2 reports the results from estimating the unobserved effects model:

³² Monthly TFWP entries by province and 4-digit occupations were obtained from here: http://www.cic.gc.ca/opendata-donneesouvertes/data/IRCC_M_TR_0009_E.xls

Note that we do not use the 0 skill-level (management jobs), because there is no clear way to map these jobs to the education levels in the LFS.

³³ The standard error on this estimate is 0.101, so we can easily reject the null hypothesis that the true correlation is zero.

³⁴ It is worth noting the bifurcation of the distribution of TFWP entries in skill level B. Turns out the skill-level B observations that lie above regression line are all from BC and Alberta, while those below are all Ontario and Quebec. Examining the occupation-level data reveals that an important source of the difference is relatively high numbers of food service workers (food service supervisors and cooks) and graphic designers and illustrators.

³⁵ For details of the caps on low-wage positions, which have tended to become more stringent since they were introduced in June 2014, see: <https://www.canada.ca/en/employment-social-development/services/foreign-workers/median-wage/low/requirements.html#h2.5>. Lists of employers who have applied for LMIA are here: <https://open.canada.ca/data/en/dataset/f82f66f2-a22b-4511-bccf-e1d74db39ae5>.

$$\log\left(\frac{\text{entries}_{it}}{l_{it}}\right) = \beta_0 + \beta_1 \log\left(\frac{\text{vacancies}_{it}}{\text{unemployed}_{it}}\right) + q_t + g_i + u_{it}$$

Where q_t are quarter fixed effects; g_i are province-skill fixed effects; and u_{it} is an iid error, which may or may not be independent of g_i . Table 3 reports the results from estimating the elasticity of interest, given by β_1 , using five different estimators: ordinary least squares (OLS); weighted least squares (WLS); fixed effects (FE), random effects (RE), and generalized least squares (GLS).

The robustness of the elasticity estimates in Table 3 is striking. We know that the probability limits of the FE and RE estimators are identical under the strict exogeneity assumption, that labour market tightness is uncorrelated with u_{it} in every period. The similarity of the estimates provides evidence that TFWP entries are responding directly to variation in labour market entries, which in turn points to the effectiveness of the LMT process.

Table 3: Estimates of the TFWP entries elasticity of labour market tightness

Estimator	Coefficient	Standard error
Ordinary least squares	0.576	0.101
Weighted least squares	1.006	0.141
Fixed effects	0.636	0.177
Random effects	0.631	0.167
GLS – heteroskedastic error with cross-sectional correlation	0.624	0.034
GLS – plus group-specific $AR(1)$ autocorrelation	0.463	0.024

Note: Standard errors for the fixed and random effects estimates are clustered by group (province-skill). The WLS estimate is weighted by the size of the labour force in group i in period t . The number of observations in each regression is 304.

Using these data we can also examine whether the effectiveness of the LMT process has been changing over time. Interacting the labour market tightness measure with a linear time trend across the 19 quarters of data, we obtain a coefficient of 0.038 (standard error is 0.015). This suggests that the TFWP entries elasticity of labour market tightness has increased from 0.26 in 2015 to about 0.98 in 2019. TFWP entries have therefore become substantially more responsive to labour shortages over time. This is consistent with policy efforts to increase scrutiny of the LMT process, including caps on proportion of employers' low-wage workforces that TFWs can comprise and the publishing of employer lists, including company names and addresses, of all applicants receiving both positive and negative LMIA's.³⁶ The increase in the number of Canadian businesses using the TFWP is not inconsistent with increasing labour shortages over the 2016-2019 period.³⁷ Indeed, the Canadian vacancy-unemployment ratio increased from 0.30 in 2016, to 0.39 in 2017, to 0.49 in 2018, and 0.51 in 2019.

³⁶For details of the caps on low-wage positions, which have tended to become more stringent since they were introduced in June 2014, see: <https://www.canada.ca/en/employment-social-development/services/foreign-workers/median-wage/low/requirements.html#h2.5>. Lists of employers who have applied for LMIA's are here: <https://open.canada.ca/data/en/dataset/f82f66f2-a22b-4511-bccf-e1d74db39ae5>.

³⁷ The Canadian vacancy-unemployment ratio was on average 0.3 in 2016, 0.39 in 2017, 0.49 in 2018, and 0.51 in 2019.

In summary, our analysis of job vacancy and unemployment data suggests that the LMT process is by and large achieving its policy objective of restricting TFWs to markets where there are labour shortages. Nonetheless, as we have already seen, the share of all TFW entries that are subject to a LMT has declined from less than one-half in 2007 to three-quarters by 2019. Unfortunately, without any information on the occupations and locations of IMP workers, there is no way to do a similar analysis for what has become the majority of the overall program.

Shift to “two-step immigration”

Canada’s temporary and permanent immigration systems have historically been, by and large, mutually exclusive, in terms of the migrants they serve. For the vast majority of new immigrants, obtaining PR status was concurrent with their initial arrival in Canada. Indeed, the Canadian term for a migrant with PR status is a “landed immigrant.” The past two decades have seen a deliberate policy shift towards what is known as “two-step immigration,” in which migrants first study and/or work in Canada as temporary migrants on a probationary or evaluation period, and if successful, have the option of settling permanently.

Seen from this perspective, the large increase in annual TFW entries we have documented may be nothing more than a relabeling of migrants as “temporary” (as opposed to “permanent”) residents upon their arrival in Canada. Indeed, much of the growth in TFW entries has occurred in TR streams that provide pathways to PR status, especially the PGWPP and GSSP. Moreover, the past two decades have seen a shift in PR entries away from the traditional Foreign Skilled Worker Program (FSWP) to the Canadian Experience Class (CEC) Program and Provincial Nominee Programs (PNPs), both of which primarily target TRs already living in Canada.³⁸

To what extent does the three-fold increase in TFW entries between 2000 and 2019 (Figure 3) reflect the shift to a “two-step” immigration system? To answer this question, we need to know the TR-to-PR transition rate, and in particular to what extent the growth in TRs has occurred within the population of individuals who become PRs.

In a recent analysis, Hou, Crossman and Picot (2020) find that the percentage of economic-class principal applicants who had Canadian work experience prior to obtaining PR status increased from 12 to 59 percent between 2000 and 2018. This suggests a significant increase in two-step immigration, but it does not directly answer the question we are interested in. This is a retrospective measure, in the sense that it looks backwards to see what percentage of new PRs transitioned from TR status. As the TR population has increased, it is not surprising that more PRs are being drawn from this population. But what we want to know is whether an individual migrant within the TR population is more likely to transition to PR status, and whether TRs who transition to PR can fully account for the overall increase in the TR population.

Unfortunately, the TR-to-PR transition rate is significantly harder to estimate, because an arrival cohort of TR entries must be followed into the future to see if they ever transition to PR. But this makes it difficult to say anything about what has happened in recent years. We therefore take a structural approach to the problem. The identification challenge is best illustrated using Bayes’ Theorem:

³⁸ The Canadian Experience Class (CEC) Program and Provincial Nominee Programs (PNP) together accounted for nearly 70 percent of economic-class principal applicants by 2018. Meanwhile entries under the Federal Skilled Worker Program steadily declined from 80 to 20 percent between 2000 and 2018 (Hou, Crossman and Picot 2020). During the COVID-19, IRCC restricted PR entries to CEC and PNP applicants on the grounds that historically more than 90 percent of these applicants were residing in Canada.

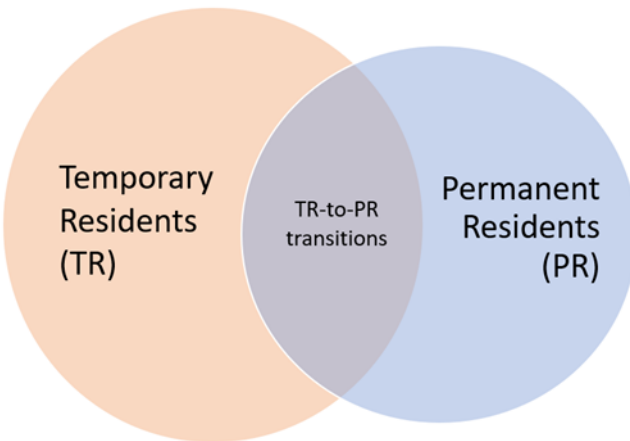
$$P(PR|TR) = \frac{P(TR|PR) \cdot P(PR)}{P(TR)}$$

where $P(PR|TR)$ is the probability that a migrant who is a TR will become a PR; $P(TR|PR)$ is the probability that a new PR was a TR; and $P(PR)$ and $P(TR)$ are the probabilities of being in the PR and TR populations, respectively.

We know from Hou, Crossman and Picot (2020) that $P(TR|PR)$ has increased nearly five-fold since 2000. We also know that annual PR entries were roughly stable between 2000 and 2013 and thereafter trended upwards. However, the rate of increase is nowhere near the increase we have seen in the TR stock population since 2000. This implies that $P(TR)$, in the denominator of (2), has increased much more than $P(PR)$ in the numerator. The TR-to-PR transition rate has, therefore, been increasing if and to the extent that the probability that new PRs transitioned from a work or study permit has increased at a faster rate than the TR population. Since $P(TR|PR)$ increased five-fold, while TR entries increased three-fold, Bayes' Theorem implies that the TR-to-PR transition rate has approximately doubled.

To estimate it more precisely, consider the simple Venn diagram in Figure 7, where the left set represents the TR population with a work permit on December 31 of year t , the right set represents PR entries in year $t+1$, and the union of the sets represents the subset of TRs with work permits in year t who transition to PR status in year $t+1$. The annual TR-to-PR transition rate is the union set divided by the left set. Bayes' Theorem tells us the annual transition rate is increasing if the number of TR-to-PR transitions in the TR population (the union) is growing at a faster rate than the TR population (the left set). As TR programs increasingly target relatively skilled migrants with PR pathways, the union set potentially grows at a faster rate than the overall TR population.

Figure 7: Venn diagram of TR and PR populations



We can estimate the average year-to-year PR transition rate under the assumption that every TR entry (new work permit holder in a given year) observed in the data is a new individual. That is, individuals do not renew work permits during the life of existing permits or at their expiration. An individual observed in the TR population in year t transitions to one of three states in the following year: (a) continues as a TR with a work permit; (b) exits Canada; or (c) transitions to PR status. The TR-to-PR transition rate is c divided by $a+b+c$.

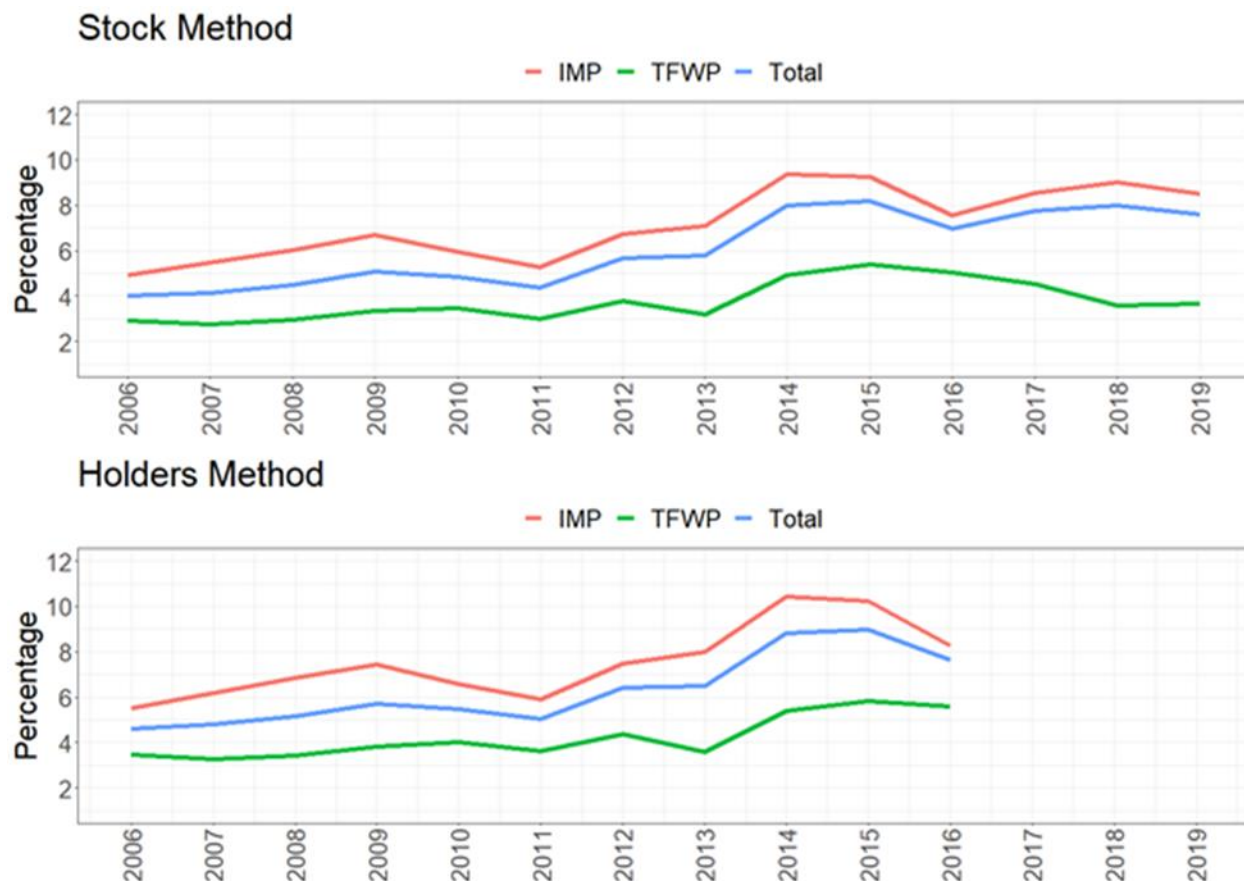
We are able to directly identify “transitions” c back to 2006.³⁹ However, both a and b need to be estimated, which we do using two alternative approaches. First, to estimate a we either use: (i) the number of work permit holders on December 31 (“stock”); or (ii) the total number of individuals who held a valid work permit at any time in year $t+1$ (“holders”) minus the number who signed in a new permit in that year (“entries”).⁴⁰ To estimate b , on the other hand, we either use: (i) the stock in year t plus entries in year $t+1$ minus the sum of stocks and transitions in year $t+1$; or (ii) holders in year t plus entries in year $t+1$ minus the sum of holders and transitions in year $t+1$. We refer to the approach based on the stocks data as the “stocks method” and the approach based on the holders data as the “holders method”. In either case, exits from Canada (b) are estimated as the residual under the key assumption that all permit holders in year t must either continue as TRs on the same permit, exit Canada, or transition to PR status.

To the extent that new permits are renewed permits, the “entries” counts are not strictly entries of new individuals. By not allowing for the continued TR status of these individuals, but instead assuming that they are new individuals, our annual TR-to-PR rates will be underestimated. Unfortunately, the available data do not allow us to distinguish entries that are first-time as opposed to repeat permit holders. However, it is important to emphasize that the TR-to-PR transition rates we estimate are not the probability that a TFW who enters Canada for the first time in year t will transition to PR status in year $t+1$. Rather, they are the probability that a randomly selected TFW in the full stock population of TFWs in year t will transition to PR status in year $t+1$. They are, therefore, an estimate of the *average* one-year transition rates among all TFWs, including those who are repeat holders of work permits.

³⁹ These data are published by IRCC as “Transition from Temporary Resident to Permanent Resident Status – Monthly IRCC Updates,” and are available here: <https://open.canada.ca/data/en/dataset/1b026aab-edb3-4d5d-8231-270a09ed4e82>. Note that we exclude PR transitions directly from a study permit.

⁴⁰ Both December 31 stocks and annual entries (new permits) are published by IRCC as “Temporary Residents: Temporary Foreign Worker Program (TFWP) and International Mobility Program (IMP) Work Permit Holders – Monthly IRCC Updates” and are available here: <https://open.canada.ca/data/en/dataset/360024f2-17e9-4558-bfc1-3616485d65b9>. Total number of work permit holders in a year are obtained from IRCC’s Facts and Figures publications, which were published up to 2017. The most recent edition is available here: <https://open.canada.ca/data/en/dataset/2bf9f856-20fe-4644-bf74-c8e45b3d94bd>, which contains an appendix with a detailed description of the alternative measures.

Figure 8: Average year-to-year TR-to-PR transition rates of TFWs by program



In Figure 8, we plot the estimated annual TR-to-PR transition rates between 2006 and 2019 using the two methods described above. We draw attention to three main results. First, the stocks data consistently produce bigger transition rates than the holders data, but the differences are small (never more than 1 percentage point) and stable over time. Second, PR transition rates are always bigger for migrant workers in the IMP streams than in TFWP streams, and this difference has more than doubled over time. In fact, as the agricultural workers' share of TFWP entries have increased in recent years (see Figure 4), the holders data point to declining transition rates. This is, of course, consistent with the relative absence of programs providing low-skill migrant farm workers with PR pathways. Finally, and most significantly, PR transition rates of Canadian TFWs roughly doubled between 2006 and 2014 but have changed little since. Specifically, we estimate that by 2019 roughly 8 percent of TFWs were transitioning to PR status within the following year.

The problem is, of course, that the duration of TFWs' work permits often exceed one year, so our one-year transition rates will underestimate the percentage of TFWs who eventually transition to PR status. However, we can infer transition rates in the long run if we assume our estimated transition rates between three Markov states (TR status, PR status, and exits from Canada) are in a steady state (unchanging over time). To see how, consider the following equation determining the growth of the PR population over time given an initial stock population of TRs, given by TR_0 :

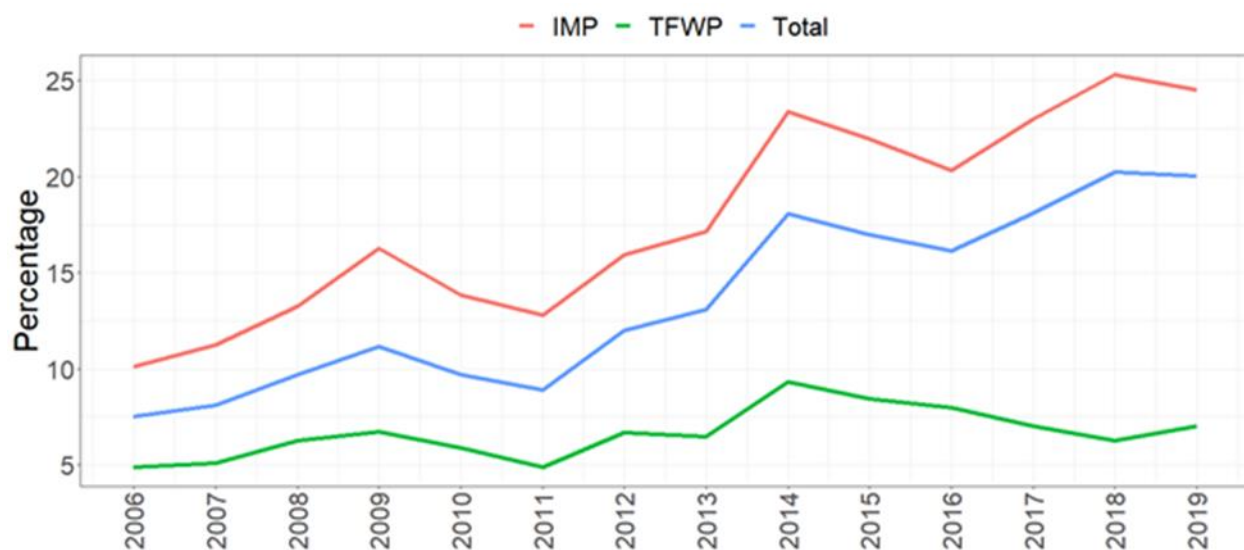
$$PR_{t+1} = PR_t + p_1 (p_2^t TR_0)$$

This tells us the PR population in any period $t+1$ will be equal to its value in the previous period (PR_t) plus the proportion of the remaining TR stock population in period t (the term in square parentheses) who transition to PR status in period $t+1$, given by p_1 . But the remaining TR stock population in period t is the initial stock TR_0 times p_2^t . The transition rate p_1 is, as above, c divided by $a+b+c$, while the retention rate is a divided by $a+b+c$. Since the second term is a standard geometric series, we know that the TR-to-PR transition rate in the steady state is simply $p_2/(1-p_1)$ or $c/(b+c)$.

The key insight is that the steady-state PR transition rate depends not only on one-year transition rates in Figure 8, but also on the likelihood that in any given year a TR returns to the TR stock population rather than leaving Canada (the retention rate). We have already seen evidence that the average duration of work permits has increased over time (Section 2), due in large part to expansion of the PGWPP, which guarantees three-year open work permits. This suggests that steady-state PR transition rates are increasing over time by more than what is implied by Figure 8.

In Figure 9 we plot the implied steady-state PR transition rates. The results suggest a nearly three-fold increase between 2006 and 2019 (7.5 to 20.0 percent), and this growth is almost entirely driven by workers with IMP permits. What is more interesting is that the difference in IMP and TFWP transitions has diverged dramatically over time, so that by 2019 IMP workers were nearly four times more likely to become PRs than migrants in the TFWP. Transition rates among TFWP permit holders have increased, from 5 to 7 percent over the full period, which likely reflects the growing share of TFWP entries outside agriculture/caregiving who are skilled, and therefore have PR pathways. But we also saw in Section 3, that agricultural workers, most of whom do not have PR pathways are comprising an increasing share of all TFWP entries (58 percent in 2019, up from 24 percent in 2008). The fact that PR transition rates have not increased more for TFWP entries presumably reflects this growth.

Figure 9: Steady-state TR-to-PR transition rate by program



How do our steady-state PR transition rates compare to those estimated elsewhere? Lu and Hou (2017) and Prokopenko and Hou (2018) estimate PR transition rates for individuals whose first ever permit in Canada was a work permit. Their sample, therefore, excludes migrants who first arrive in Canada as international students. Their 5-year transition rate estimates show an increase from 9% for the 1995-1999 cohort to 14% for the 2000-2004 cohort, to 22% for the 2005-2009 cohort.⁴¹

More recently, Hou, Crossman and Picot (2020) report that when the sample is extended to include those whose first permit was a study permit, but who have once held a work permit, their estimated 10-year transition rates increase from 30 percent for the 2001 arrival cohort to 39 percent for the 2006 cohort. These rates are also higher than ours, which is consistent with permit renewals for individual foreign workers, which we ignore, attenuating our estimated rates. Indeed, our one-year retention rate increases from 47 to 62 percent between 2006 and 2019, whereas Prokopenko and Hou (2018) estimate one-year retention rates one year after arrival of 67 percent for the 2000-2004 arrival cohort and 83 percent for the 2005-2009 cohort. However, our estimates for any given year are not strictly comparable since they are based on one-year transition rates that are an average across multiple arrival cohorts with multiple years since arrival. Nonetheless, if we adjust our steady-state rates by using a constant 85-percent annual retention rate, our estimates of $P(PR|TR)$ go from 27 percent in 2006 to about 50 percent by 2014 and change little between then and 2019.

We are ultimately interested in whether the growth in TR entries has primarily been among TRs who transition to PR status. To answer this question, consider a hypothetical 100 new TRs who entered Canada in 2006. Given the estimate above, 27 of them would eventually have become PRs. But we know that annual entries of new TRs increased roughly doubled between 2006 and 2019 (roughly 190,000 entries per year to 400,000). In our hypothetical example this is equivalent to 100 TR entries in 2006 in increasing to 200 TRs by 2019, and our estimate above suggests one-half of them, that is 100, will eventually become PRs. This means that 73 percent of the growth in TR entries is comprised of migrants who permanently settle, so roughly three-quarters of the increase in TR entries can be seen as a relabeling of new entries as TRs instead of PRs. Hence, while most of the growth in the TFW population reflects the policy shift to “two-step immigration,” even our upper bound estimate of TR-to-PR transition rates suggest that we would have seen a substantial increase in TR entries independently of the policy shift to “two-step immigration.”

Summary and Policy Recommendations

Our analysis of Canada's TFW program since 2000 reveals a transformation characterized by a shift to TFWs who are more skilled TFWs employed, more likely to hold long-term work permits, and who are more likely to permanently settle in Canada. The TFW program has increasingly become a component of the permanent immigrant selection system, in which new PRs are selected from the TFW population in a two-step process. In that sense, the growth in overall TFW entries may be little more than a relabeling of new immigrants as “temporary” as opposed to “permanent” residents upon their initial arrival in Canada.

While accurate, this characterization is incomplete. In response to increasing controversy over TFW entries, in 2014 the government separated entries that were LMT-exempt into a new program, known as the IMP. We find that 85 percent of the overall growth in TFW entries between 2000 and 2019 has been in the IMP and this growth has substantially exceeded the growth in PR transitions. Moreover, our analysis of Census data points to increasing low skill employment

⁴¹ Note that our rates also do not include individuals who went directly from a study permit to PR, but we do include all individuals who ever had a work permit, whether or not they also once had a study permit.

among TFWs with IMP work permits, especially among current and former international students.⁴²

Part and parcel of the program's transformation is its increased complexity, which has made evaluating the overall system more difficult. As all indications point to continued expansion of "two-step immigration," there is a need for greater transparency in the IMP streams. We need to observe the labour markets in which TFWs on open permits are employed, in terms of both locations and occupations of employment. We also need quarterly reports of TFW stocks, as opposed to only December 31, to capture seasonal variation in TFW penetration rates within labour markets, as well as short-term permits. Most important, year-to-year TR-to-PR transition rates by TR program streams and migrants' years since first arrival should be a standard IRCC data product.

The Covid-19 pandemic has seen increased calls from immigration advocates for expanded pathways to PR status for low-skill TFWs employed in "essential work," including on farms, in seafood processing plants and in transport trucking. While there are no doubt compelling ethical reasons for these pathways, it is important to think about the effects of such a policy shift. Recent estimates suggest that roughly 15 percent of migrant farm workers transition to PR status within five years of their first arrival in Canada (Zhang, Ostrovsky and Arsenault 2021). What percentage of these individuals continue to work in "essential" farm jobs after obtaining PR status? If a farm work stint is the price of PR status, what is the required work duration for eligibility? And what is the impact on demand for migrant farm workers? Most important, with the PR option now an added benefit of the job, what is the impact on migrant farm workers' willingness to accept substandard wages and working conditions?

In our view the first priority should be to determine what economic objectives these TFW entries are achieving in the first place. TFWs are one solution to a labour shortage, but they are not the only one. Labour markets can also adjust through combinations of wage increases, consumer price increases, or labour-saving technological changes, all of which are more likely to induce labour productivity gains. Past policy efforts to curtail low-skill TFW entries through increased costs of LMTs, especially in the restaurant sector (food counter attendants, kitchen helpers) and retail (cashiers, store shelf stockers, clerks and order fillers, service station attendants) have reduced entries with no clear evidence of large-scale business failures that we are aware of.

The profit incentive to employ TFWs is significant, which is presumably behind the rebounding low-skill TFW entries we are now seeing in agriculture, transport truck drivers, and labourers in food/drink processing, especially fish and seafood, as well as a proliferation in the number of employers accessing the program. What would the consequences be of further restricting these entries? An option for evaluating these questions are stress tests that charge marginally higher prices for work permits and track the responsiveness of employer applications (the labour demand "elasticity"). Another option, which deserves more consideration, is a "cap and trade" system, in which ESDC issues a fixed number of permits to satisfy current demand, but gradually lowers the number of permits issued in subsequent years. Employers may respond to this rationing of permits by trading unused permits to other employers whose willingness to pay for permits is higher. The cap ensures certainty in the number of permits issued, while the market for TFWs is left to determine the price. In this way, TFWs will be allocated to firms where the value of the marginal product of labour of TFWs is highest thereby improving the economic efficiency of the system.

Is there reason to be concerned about the expansion of foreign student employment in Canadian labour markets? In 2008, the U.S. extended work permits for international students

⁴² The "relabeling" characterization of the transformation is also incomplete in that it ignores how the shifting preference towards PR applicants with Canadian work experience has resulted in improved employment and earnings outcomes of more recent landing cohorts of new PRs (Hou, Crossman and Picot 2020).

graduating from STEM programs from 12 to 20 months, thereby increasing the labour supply of international students in U.S. labour markets. Examining the effects of the extensions, Demirci (2020) finds adverse crowding-out effects on the employment and earnings of U.S.-born STEM graduates in similar STEM fields. There is mounting evidence that international students are ideal immigrants, in that they face fewer labour market integration challenges once settled (Chen and Skuterud 2018), but what about employment of foreign students who never make the transition to PR status, either because they are unable to meet the PR selection criteria, or because they are motivated by high returns to Canadian work experience in their origin countries? In achieving program objectives, it is critical to better track the school enrolment and work activity of study permit holders, as well as their PR transitions. Our analysis of Census data suggests that nearly one-half of all foreign student employment is in low-skill jobs on LMT-exempt work permits. A cynical view of what has happened is that low-skilled TFWP admissions have been replaced with off-campus employment of study permit holders and LMT-exempt permits through the PGWPP. This avoids the controversy of low-skilled TFW admissions since these are open permits which are never scrutinized.

Responsibility for administering LMTs has always belonged to ESDC. With LMT-exempt permits now comprising three-quarters of all TFW entries, there is a need for ESDC's evaluation mandate to be extended to IMP entries. Not only do we need better tracking of the labour market penetration rates of IMP entries by location and occupation, but we also need analyses of how these entries are related to measures of labour market tightness, such as vacancy-unemployment ratios. All indications are that LMT-exempt entries will continue to grow in the years ahead, potentially without commensurate increases in PR transition rates. There is no *prima facie* reason to believe that they will not have crowding effects on the wages and employment rates of domestic workers competing for jobs in the same labour markets. If these effects are not going to be assessed in advance through LMTs, they should at least be monitored *ex post*.

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