Temporary foreign workers and firms: Theory and Canadian evidence

— **Source link** ⧉

Pierre Brochu, Till Gross, Christopher Worswick

Institutions: University of Ottawa, Carleton University

Related papers:

- Conditions for an Efficient Canadian Temporary Foreign Worker Program: The Case of Quebec

- Who's on Secondary?: The Impact of Temporary Foreign Workers on Alberta Construction Employment Patterns

- Wage inequality, skill-specific unemployment and trade liberalization

- Labor market experience and well-being after firm closure. Survey evidence on displaced manufacturing workers in Switzerland

- The Effect on Vacation and Sickleave Policies on Absenteeism

Brochu, Pierre; Gross, Till; Worswick, Christopher

Working Paper

Temporary foreign workers and firms: Theory and Canadian evidence

Working Paper Series, No. 6

Provided in Cooperation with:
Canadian Labour Economics Forum (CLEF), University of Waterloo

This Version is available at:
http://hdl.handle.net/10419/203337

Temporary Foreign Workers and Firms: Theory and Canadian Evidence

Pierre Brochu (University of Ottawa)
Till Gross (University of Ottawa)
Christopher Worswick (Carleton University)
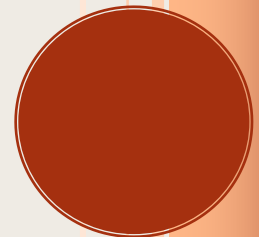
Temporary Foreign Workers and Firms: Theory and Canadian Evidence

Pierre Brochu[*], Till Gross[†], and Christopher Worswick[‡]

Last updated: November 9, 2016

Abstract

The goal of our paper is to better understand the economic implications of Temporary Foreign Worker (TFW) programs as well as comprehend the underlying reasons for the rapid expansion of the number of TFWs hired by employers under the Canadian program brought to light in 2014. We present an efficiency wage model that allows for the possibility that a firm, unable to find a worker after advertising for a period of time, may hire a TFW at the advertised wage. Due to the assumed lower outside option for the TFW than the domestic worker, the TFW will exert higher effort than a domestic worker even if the TFW is paid the same wage as would have been paid to a domestic worker. In equilibrium, lower wage offers are made to less-skilled domestic workers when a TFW program of this kind is in place. The model also implies higher unemployment rates for domestic workers after the introduction of a TFW program. Our empirical analysis is based on the confidential master files of the Canadian Census (1991-2006) and the Labour Force Survey (2006-2013). We find that TFWs in Canada work longer hours, have lower rates of absenteeism, and are less likely to be laid off, consistent with higher effort in our model. Moreover, TFWs work at lower wage rates than domestic workers even for similar job characteristics, which is also a prediction of our model.

---

[*]Department of Economics, University of Ottawa

[†]Corresponding author. Department of Economics, Carleton University, Ottawa, Canada. Telephone: (613) 520-2600 ext. 3773. Email: till.gross@carleton.ca. We would like to thank Richard Brecher, Louis-Philippe Morin and Mikal Skuterud for their helpful comments. We would also like to thank Taylor Wright for providing excellent research assistance.

[‡]Department of Economics, Carleton University

1 Introduction

Faced with complaints of worker shortages, many OECD countries have turned to either immigration or temporary foreign worker (TFW) programs to supply domestic firms with the needed labour services. While much research has been devoted to the question of the economic implications of immigration programs for the wages of native born workers,[1] fewer studies have considered the economic implications of TFW programs (also known as guest-worker programs). Many OECD countries have TFW programs that cover at least certain occupations. Countries such as France and Germany have longstanding guest-worker programs which have been controversial in part due to the fact that these temporary residents often stay for very long periods of time.[2] However, traditional immigrant-receiving countries such as the United States, Canada, and Australia admit TFWs (to a growing extent at least for the latter two countries) to fill so-called 'labour shortages' without the need to offer permanent residency rights as is the case through their immigration programs. A natural question to ask is whether these TFW programs negatively affect wage offers to domestic workers. One approach to mitigate this risk is for the program to require that the TFW be paid the same wage as was advertized domestically for the job. Even in this case, the firm could strictly prefer to hire a TFW rather than a domestic worker due to higher efficiency of labour provided by a TFW (relative to a domestic worker).

The dramatic growth in the number of TFWs in Canada since 2000 is well documented and represents a significant shift in focus towards temporary sources of foreign labour supply. Figure 1 presents the total number of TFWs eligible to be working in Canada on December 31st of each year between 1995 and 2014. The upper green line includes all TFWs and this number grew from 52,092 in 1994 to 353,448 by 2014. While Canada has a long history of immigration, there has never before been such a significant reliance on TFWs to supply labour to Canadian firms. This in itself is enough to justify a thorough investigation of the effectiveness of this new policy direction. Figure 1 also presents the total number of TFWs broken down into two groups: 1) individuals admitted under the Temporary Foreign Worker Program (TP) which has the requirement that the foreign worker is paid the same wage as had been advertized to domestic workers in Canada, and 2) individuals admitted under the International Mobility Program (IMP) which is really a combination of different programs (including temporary workers admitted under international trade agreements such as NAFTA). The main difference between the TP and the IMP is that, under the IMP, the

---

[1]See, for examples, Card (2001) and Aydemir and Borjas (2007).

[2]A large literature exists on the economic outcomes of temporary migrants to Europe. See, for examples, Brenner (2010), Bishop, Chow, and Zeager (2003) and Schmidt (1997) who consider the economic outcomes of guest workers in Germany.
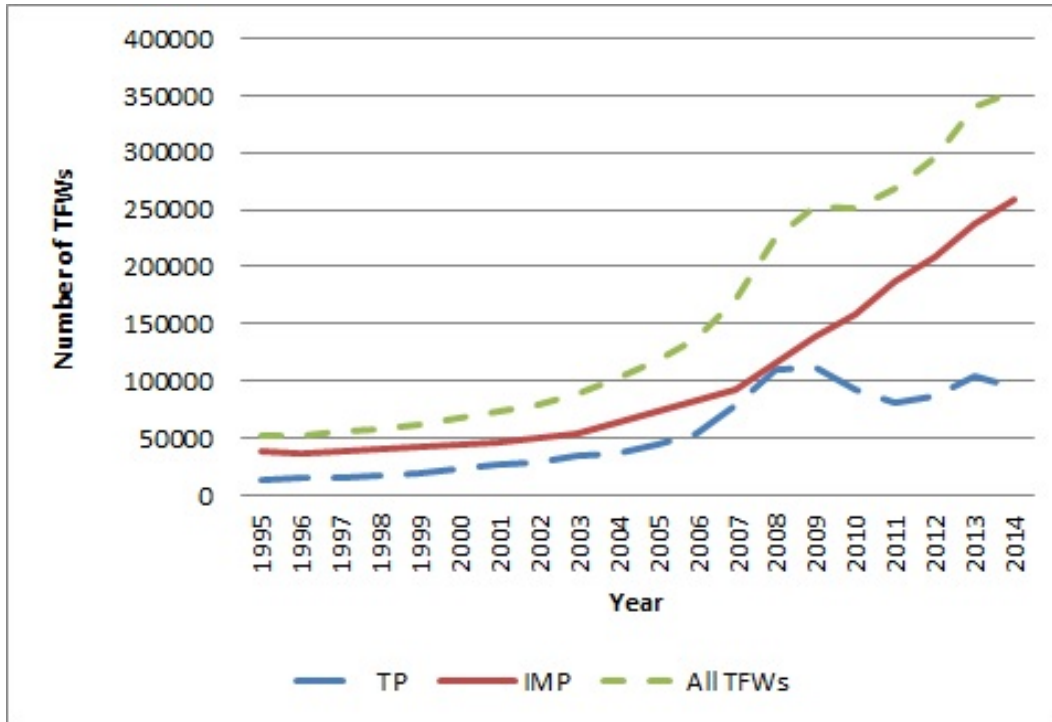
Figure 1: TFWs in Canada by Major Program Type: 1995-2014

firms are not required to pay the same wage to the TFWs as they would pay to a domestic worker. The TP numbers were lower than the IMP numbers over the 1990s but grew more quickly in the early to mid 2000s nearly equaling the IMP numbers in 2008 before dropping off and then stabilizing at around 100,000. Interestingly, the IMP numbers continued to grow rapidly right through the Financial Crisis of 2007/2008 and the Great Recession of 2008-2012 (when one would expect demand for labour should have been declining) and by 2014 were two and a half times the TP numbers. This reflects the fact that domestic firms had an ever growing demand for TFWs and increasingly went through the IMP (rather than the TP) allowing them to avoid the onerous TP requirement to match the wages paid to the TFWs with the wages paid to domestic workers. It is worth noting that the growth of all TFWs in Canada over this period did not go unnoticed by the media and by 2014 there were a growing number of reports of employers pursuing an ever increasing number of TFWs even when qualified Canadian workers were apparently willing to take the jobs (see Tomlinson (2014)).

A small but growing literature exists on the economic implications of the TFW programs in Canada. Beine, Coulombe, and Vermeulen (2015) consider the impact of both immigrants and TFWs in the Canadian context as a way to buffer the effects of the prolonged resource booms of the 2000s. They find evidence that TFWs and inter-provincial migration (but

not immigration) mitigated the consequences of the increase in the size of the non-tradable sector in the booming regions by providing a new source of labour in the booming regions. Warman (2010) uses Census data and finds higher earnings, returns to education, and work experience than for immigrants to Canada. This suggests that the employer-driven selection system for TFWs allows for a better matching of the foreign worker characteristics to job characteristics in Canada than exists in the immigration program where the cross-cohort decline in both entry earnings and returns to foreign work experience since 1980 is well documented.[3] Also, Gross and Schmitt (2012) find that the large increase in TFWs led to an increase in unemployment rates in the western provinces of Canada.[4] However, to the best of our knowledge no research has been carried out on the underlying reasons why a (Canadian) employer might prefer to hire a temporary foreign worker even if the firm is required to pay the program fee on top of the market wage rate of a domestic worker.

A number of authors have analyzed the theoretical implications of TFW or guest-worker programs. Müller (2003b) for instance considers who benefits from international migration of workers. He uses a dynamic efficiency wage model with a dual labour market structure, resulting in lower wages for migrants.[5] Several theoretical studies have considered optimal guest-worker policy within the context of the risk of these TFWs choosing to stay beyond the time limit set for their visas as is commonplace in a number of European countries.[6]

We add to this theoretical literature by developing an efficiency-wage model in order to better understand the appeal of TFWs (relative to domestic workers) for firms. The key assumption is that TFWs have a worse outside option than domestic workers due to the fact that if a TFW leaves the job s/he must return to their home country which is assumed to have lower wages than the receiving country. This means that for the same wage, a TFW will provide more effort in the efficiency-wage model. That is, even if employers stick to the letter of the law and pay the wage to a TFW that was advertized to domestic workers (as required under the TP), they have an incentive to employ TFWs. In equilibrium, the existence of the option to hire a TFW (after an unsuccessful search for a domestic worker) leads to a decrease in advertized wages for domestic workers, since employers have an incentive to offer a lower wage in equilibrium raising the possibility that no domestic worker will be hired which would allow the employer to hire a TFW instead. We also consider theoretically the case of the IMP in Canada where the firm does not need to pay the TFW the wage advertized domestically

---

[3]See, for example, Green and Worswick (2012).

[4]See also Gross (2014).

[5]See also Müller (2003a).

[6]See Djajić and Milbourne (1988), Weiss, Hillman, and Epstein (1999), Djajić (2013), and Djajić and Mesnard (2015). Djajić, Michael, and Vinogradova (2012) consider the interaction between host country and receiving country policies with a focus on skilled migration. The analysis in Djajić (1989) takes into account both permanent and temporary migration.

prior to applying to hire a TFW (as is required under the TP in Canada). We find that the two types of programs deliver qualitatively very similar results.

It is important to note that the efficiency wage model employed here differs in important aspects from the ones used in Müller (2003b) and Müller (2003a). In these studies, a Shapiro and Stiglitz (1984) type model is coupled with a dual labour-market structure, similar to Bulow and Summers (1986). Migrants and natives differ only by the migrants' probability of return migration.[7] This leads to sectoral segregation and discrimination against migrants. Our approach instead focuses on the role of the lower outside option of TFWs and how this distorts the wage offers that firms make to domestic workers. In Müller (2003b), firms generally prefer to hire domestic workers compared to TFWs. Moreover, we purposefully model immigration in the most benign way possible, in the sense that it does not lower the marginal product of labour, which is the driving force in Müller's papers.[8] We thus believe that our model is better adapted to the question at hand.

In addition, we employ confidential Statistics Canada data from both the Census and the Labour Force Survey to empirically evaluate the support for two predictions of our model. In equilibrium, TFWs should exert higher effort than domestic workers when employed at the same wage. While effort is not observed, we can observe hours of work per week in both the Census and the Labour Force Survey (LFS) and we use this a proxy for work effort.[9] In addition, we provide evidence that TFWs have lower absentee rates than similar domestic workers which can again be thought of as higher effort in our model. Finally, we consider another indicator of worker effort: employer layoffs. Presumably, employers are more likely to lay off workers who shirk and generally provide lower effort. In the data, TFWs are more likely to continue employment with the same employer than comparable Canadian workers and this is due to a lower probability of being laid off. A second empirical prediction from our theoretical analysis is that, under the TP model where the TFW must be paid the domestically advertized wage, wage rates should be higher for domestic workers than for TFWs within similar jobs. This is due to a composition effect, since lower-wage jobs are more likely to be left unfilled by domestic workers, leading to the hiring of a TFW at these wages. In addition, under the IMP model, firms are not required to pay the domestic wage and so, given the lower outside option of TFWs relative to domestic workers, we would expect

---

[7]Migrants are equivalent to either guest workers or TFWs.

[8]Our approach is consistent with the notion that the economy-wide capital stock is not fixed but rather adjusts with the amount of labour used; this may come either from long-run capital accumulation or from a small economy with free capital movement.

[9]Our interpretation of hours of work as a proxy for effort is similar to the interpretation of Bell and Freeman (2001) in their study of hours of work differences between the US and Germany. They argue that workers may choose high hours of work so as to raise their probability of promotion as one would expect in an incentive/tournament model.

TFWs to be paid lower wages than domestic workers even holding the job characteristics constant.

In sum, we present a simple, reduced-form model with the following main features: (i) in the absence of a TFW program, some open positions will not be filled by domestic workers; (ii) if these positions are filled by TFWs, then this does not reduce the marginal product of labor of domestic workers; and (iii) firms have an incentive to hire TFWs over domestic workers, because the former have a lower outside option and provide higher effort at the same wage. We present empirical support on three dimensions – hours of work, absenteeism, and layoffs – that TFWs in Canada indeed put in higher effort. Our model suggests that in equilibrium firms will offer lower wages to domestic workers (resulting in higher unemployment) when a TFW program is introduced, even if the program stipulates that wages for domestic and foreign workers have to be identical and all firms follow these rules. Our principal contribution is thus to propose a model which rationalizes the need for a TFW program while generating unintended consequences and to provide empirical evidence for the key model feature. We also show that there are no easy solutions to fix the inherent problems by establishing quotas or raising fees for TFWs.

2 Model

We consider first the case where firms pay the same wage to a TFW as they would have paid to a domestic worker had one been found (the TP case). Later on we analyze the IMP case and highlight how it is similar to or differs from the TP case.

There is a continuum of firms and of workers of measure one each in the economy. Firms post wage offerings, which local workers will fill with certainty if the wage is above a threshold; domestic workers fill a position with some probability smaller than one if the wage is below this threshold. When a position does not get filled by a local worker, then after one period of waiting (where a period corresponds to 4 weeks) a TFW can be brought in by the firm at the same wage that was advertised for a domestic worker. Workers' effort/productivity is increasing in the wage and firms' profits are increasing in effort/productivity.

2.1 Workers

A worker's productivity (or effort) e depends positively on the wage w he or she receives and negatively on the value of the outside option u. Yellen (1984) identifies four potential benefits of paying higher wages: reduced shirking, lower turnover, better quality of job applicants,

and improved morale.[10] The outside option might matter for several related reasons: Workers might get fired if they do not work sufficiently hard and how much the worker values the loss of the job depends on the difference between the wage and the outside option (for instance unemployment benefits and the opportunity to find another job). Moreover, there may be a degree of reciprocity between workers and employers, and the outside option could be seen as a reference point, so that the difference between the two matters. One could also think that workers with a lower outside option are more willing to engage in risky work and accept lower safety standards.

We will thus assume that a worker's productivity is given by the function $e(w, u)$, with $e(0, u) \leq 0$, $e_w > 0$, and $e_{ww} < 0$ (this allows for an interior solution) and $e_u < 0$ and $e_{uw} > 0$ (this means that workers with a higher outside option value provide less effort but that this effect becomes less pronounced with a higher wage). We assume that local and TFWs differ in the value of their outside options, so that $u_d > u_f$, where subscripts d and f stand for domestic and TFWs, respectively. We motivate this assumption by the fact that our model is intended to apply to the case of firms in relatively high-wage countries (such as Canada) hiring TFWs from relatively low-wage countries. It can also be interpreted as the home country providing better opportunities of employment for a specific job type for which TFWs are hired.

2.2 Firms

There is a large number of perfectly competitive, risk-neutral firms. They need to fill different jobs and we assume that each job can be analyzed independently. Jobs differ in their productivity $\alpha_j \in [0, \bar{\alpha}]$:

$$\pi(j, h, w) = g(\alpha_j, e(w, u_h)) - w - \mathbb{1}[h = f]k. \tag{1}$$

$\pi(j, h, w)$ are the profits of a job of type j for a worker of type $h \in \{d, f\}$, k is the cost a firm has to pay if it hires a TFW (that is, the indicator function $\mathbb{1}[h = f]$ takes the value 1 if $h = f$ and 0 otherwise), and $g(\cdot)$ is output, a positive increasing function in its arguments, with $g_{\alpha_j, e} > 0$. A job will be filled with certainty by a domestic worker if $w \geq u_d$ and

---

[10]Our model is closely related to the canonical theories of efficiency-wages summarized in Yellen (1984), but differs in several dimensions, in order to capture key aspects of the TFW program. Most importantly, employers may not hire any number of workers for a position, otherwise there would be no need to hire foreign workers. This implies that in our model firms do not seek to minimize the labour cost per efficiency unit, i.e. $e'(w)(w/e) = 1$, but rather to maximize the profit for one worker. In consequence, unemployment in our model does not stem from efficiency wages.

with probability $p(w) < 1$ otherwise, with $p' > 0$ and $p'' < 0$.[11] Jobs can only be filled by TFWs if the firm could not find domestic workers for it; in that case, the firm has to wait for a period and then pay the same wage advertised for the domestic worker. Profits are discounted at rate $1 + r$, where r is the quarterly interest rate. TFWs always accept any job with certainty if $w \geq u_f$ and do not accept a job otherwise. We also assume that $p(w < u_f) = 0$, i.e. that domestic workers will never accept any job which would be rejected by a TFW. For simplicity, a job is exogenously terminated once a worker has filled it for one period. Moreover, to emphasize the potential benefits of a TFW program, we assume that if a firm cannot find a domestic worker in one period, it will not be able to do so in the future either.

The expected profits of a firm which has a job opening of type j are thus

$$\Pi_j(w) = p(w)\pi(j, d, w) + (1 - p(w))\beta\pi(j, f, w), \tag{2}$$

where $\beta \equiv 1/(1 + r)$. We assume that this function is also strictly concave in w to ensure an interior solution.

2.3   Effects of TFWs on Firm Decisions

In the absence of TFWs, the first-order condition for the optimal wage is

$$p'(w)\pi(j, d, w) + p(w)\pi_w(j, d, w) = 0. \tag{3}$$

The optimal wage paid, $w^d(j)$, is an increasing function of α_j. Some jobs will not be filled, i.e. $p(w^d(j)) < 1$ for some j. Call the cutoff for domestic workers α_d, so that all jobs with $\alpha_j \geq \alpha_d$ satisfy $p(w^d(j)) = 1$. Similarly, define α_f as the cutoff at which firms can profitably hire TFWs (we assume that k is small enough so that $\alpha_f < \alpha_d$). That is, jobs in the interval $[\alpha_f, \alpha_d]$ can be profitably filled by TFWs without harming domestic workers, since the latter would not necessarily fill these positions.

This is a naive view of the policy, however. There is an incentive for firms to post job offers with wages which are lower than those in the absence of the temporary foreign worker program, even though they pay the same wages to domestic workers as to TFWs. As equation (3) makes clear, there is a premium on wages beyond the pure efficiency wage to enhance the chances of filling the position (the term $\pi(j, d, w)p'(w)$). This premium is reduced

---

[11]We recognize that our definition of the outside option is somewhat non-standard. However, our approach makes the model tractable, while still allowing for worker heterogeneity (due to, say, different preferences for work), and thus admits for the (very real) possibility that some domestic workers will work at the same wage as TFWs.

(and might even be reversed) when firms have access to the TFW program. Additionally, the marginal profit of a higher wage for a TFW is lower than for a domestic worker. To see this, consider the derivative of profits with respect to wages for some $\alpha_j \in [\alpha_f, \alpha_d]$:

$$\frac{\partial \Pi_j(w)}{\partial w} = p'(w)\pi(j, d, w) + p(w)\pi_w(j, d, w) - \beta p'(w)\pi(j, f, w) + \beta(1 - p(w))\pi_w(j, f, w). \quad (4)$$

Evaluating this at the wage $w^d(j)$ that solved equation (3), i.e. the wage that would be paid to domestic workers in the absence of the TFW program, shows that this is negative: $\beta p'(w^d(j))\pi(j, f, w^d(j)) > 0$ and $\pi_w(j, f, w^d(j)) < 0$ since $\pi_w(j, d, w^d(j)) < 0$ from (3) and $e_{wu} \geq 0$, which implies that $\pi_w(j, f, w^d(j)) < \pi_w(j, d, w^d(j)) < 0$. By the concavity of the profit function, this implies that wages will be lower for jobs that are affected by the TFW program. The wage premium for filling a position is lowered, $p'(w^d(j))[\pi(j, d, w^d(j)) - \beta\pi(j, f, w^d(j))] < p'(w^d(j))\pi(j, d, w^d(j))$, and is reversed in sign if it is more profitable for firms to wait a period and then hire a TFW than to fill it immediately with a domestic worker, i.e. if $\pi(j, d, w^d(j)) < \beta\pi(j, f, w^d(j))$. Moreover, the efficiency wage part is also lowered, as TFWs have a lower outside-option value, so that $p(w^d(j))\pi_w(j, d, w^d(j)) > p(w^d(j))\pi_w(j, d, w^d(j)) + \beta(1 - p(w^d(j)))\pi_w(j, f, w^d(j))$. Since the optimal wages offered with a TFW program, denoted by $w^e(j)$, are also lower at the previous cutoff level α_d, this implies that $p(w^e(\alpha_d)) < 1$ and we define α_e as the α_j such that $\text{argmax}_w \Pi_j(w) = u_d$.

We can thus conclude that wages for jobs in the interval $[\alpha_f, \alpha_d]$ are lower in the presence of a TFW program than without and that the cutoff increases, i.e. that domestic workers will receive a wage below u_d in the interval $[\alpha_d, \alpha_e]$. Therefore, some jobs for which there had been no shortage of domestic workers will not be filled by domestic workers anymore, since the wages for these jobs have been lowered.

2.4 Labour Market Effects

We assume that each period firms have new jobs available over the interval $[0, \bar{\alpha}]$ with density $dF(\alpha_j)$.[12] There is a corresponding measure $dF(\alpha_j)$ of workers for each job of type α_j. Workers are risk-neutral with constant marginal utility of consumption. Unemployment in the absence of a TFW program is given by

$$U_{NFW} = \int_0^{\alpha_d} (1 - p(w^d(\alpha_j)))dF(\alpha_j). \quad (5)$$

[12]Note that this assumption implies that TFWs do not "steal" jobs from domestic workers in the sense that if a TFW works in a job it is no longer available for domestic workers. In this model, TFWs expand the size of the economy.

Once TFWs can be employed by firms, the unemployment rate for domestic workers is

$$U_{FW} = \int_0^{\alpha_e} (1 - p(w^e(\alpha_j)))dF(\alpha_j). \tag{6}$$

Clearly, unemployment of domestic workers increases, i.e. $U_{NFW} < U_{FW}$. There are two parts to this: First, the range increases over which there are unemployed domestic workers, since $\alpha_e > \alpha_d$. Second, the wage paid at each $\alpha_j \in [\alpha_f, \alpha_e]$ is lower when firms may hire TFWs, which implies that $(1 - p(w^e(\alpha_j))) > (1 - p(w^d(\alpha_j)))$.[13]

Comparing average wages of domestic vs. TFWs, the former are on average higher than the latter, even though each worker is paid the same for an identical job. The reason is a composition effect: the higher the α_j, the more likely it is that a job is filled by a domestic worker. Even if one controlled empirically for job characteristics, such wage differences should be observable, as long as these controls do not capture perfectly the job differences. For example, if one could only imperfectly distinguish α_j in discrete intervals, then in each such interval foreign workers receive on average a lower wage than domestic workers.

What are the welfare effects of a TFW program in this model? Domestic workers clearly lose out with a TFW program, since wages are lower and unemployment is higher. TFWs benefit, since they receive wages above their reservation utility. Producers also benefit, as they are able to fill more positions profitably (overall employment of domestic workers and TFWs increases) and since TFWs provide more effort per dollar of wages.

It is unclear whether the overall welfare consequences are positive or negative. This obviously depends on the welfare weights one assigns to firms and to domestic workers and TFWs. But even from a utilitarian perspective, it is not certain that welfare increases due to a TFW program: on the positive side, the average outside option for the workers is lower, implying that more jobs are being filled and that workers provide a higher effort for a given wage. On the negative side, wages are lower, which results in lower effort and thus efficiency. In any case, we believe that, for a full-blown welfare analysis, we would need a richer model environment than the one we provide here – our goal is to illustrate why firms and a benevolent government would want a TFW program in the first place and what some of the unintended consequences of such a program could be.

---

[13]As opposed to the traditional efficiency-wage model, unemployment in this model is "voluntary," in the sense that domestic workers for jobs below the threshold α_d (or α_e with TFWs) could find employment but chose not to accept it, due to the low wages.

2.5 Quotas and Fees in a TFW Program

An interesting question is whether there is a "quick fix" for the problems associated with a TFW program outlined above. One possibility is to set a quota of TFWs which are allowed into the country each year. The effects of such a quota depend on how it is implemented: If the quota is filled sequentially on a first-come first-serve basis, i.e. that firms know before they set their wages whether they will obtain a TFW position or not, then a quota does not solve any of the policy's unintended consequences.[14] Unless there are some economies of scale for TFWs (which we have not modeled here), the welfare benefits of a TFW program are simply multiplied by a factor of X/L, where X is the number of permits and L is the number of TFWs firms would like to hire.[15] However, if firms had to make their wage decisions before knowing whether they could hire a TFW or not – for instance, they could be assigned a lottery – then a quota would reduce the downward pressure on domestic wages. To see this, assume this probability of being allowed to hire a TFW is $X/L < 1$. Then the profit function is $\Pi_j(w) = p(w)\pi(j,d,w) + (1-p(w))(X/L)\beta\pi(j,f,w)$ and hence the first-order condition for wages, equation (4), would have the terms $-\beta p'(w)\pi(j,f,w)$ and $\beta(1-p(w))\pi_w(j,f,w)$ multiplied by X/L. Since both terms are negative, the downward pressure on domestic wages would be attenuated by a quota. The potential benefits of a TFW program would also be limited, though, as discussed before.

Another possibility is to increase the fee of obtaining a permit for a TFW (resulting in an increase in the cost k of hiring a TFW).[16] This would have the effect of reducing $\pi(j,f,w)$, but leaving the derivative $\pi_w(j,f,w)$ unchanged. It therefore affects the first-order condition for wages, equation (4), by decreasing in magnitude the negative term $-\beta p'(w)\pi(j,f,w)$. Thus, the downward pressure on domestic wages would also be mitigated, but presumably not as strongly as by a quota. There is an additional effect of higher fees, though: Our analysis above shows that if k is low enough so that firms find it profitable to hire TFWs for some threshold $\alpha_f < \alpha_d$, then firms will hire TFWs (and offer lower wages) for any job with $\alpha_j > \alpha_f$ that is not filled by domestic workers. Increasing k then increases the threshold α_f at which TFWs are hired. In comparison to a quota, less low-skilled and more high-skilled TFWs (in our model, those with a higher type j) would hence be hired. This may or may not be desirable: For the lower-type jobs there are more workers needed ($p(w)$ is lower), but the higher-type jobs are presumably more profitable for firms ($\pi(j,f,w)$ is increasing in j).

---

[14]This is under the assumption that firms with different types of jobs are randomly first or not.

[15]In terms of the model, each firm would then either be allowed to hire a TFW with probability X/L or not with probability $1 - X/L$. Importantly, the firm can set a different wage depending on whether they can hire a TFW or not. If yes, the firm just behaves as described in equation (3), otherwise its first-order condition with respect to wages is as in equation (4).

[16]We do not consider a separate benefit of raising public funds in this manner.

In summary, if a quota were to be introduced, it should be assigned in the form of a lottery and not on a first-come, first-serve basis. Such a quota may also be preferable to increased fees for hiring TFWs, depending on whether the program targets more high-skilled or low-skilled workers. A quota affects all workers across the board whereas a fee would mainly affect the lower-skilled workers, which are less profitable than higher-skilled workers. Overall though, it is not clear whether either of these measures would perform better than the baseline TFW program, as they not only mitigate the unintended consequences of lower wages for domestic workers, but also reduce the intended benefits of filling positions for which firms had not been able to find domestic labour.

2.6 International Mobility Program

In this section we explore a variant of the model in which firms are not forced to pay TFWs the same wage as domestic workers; instead, they may pay them a wage w_f. This would correspond to the Canadian International Mobility Program (IMP) that we discussed in the introduction. We refer to the baseline model as "fixed wages" and the one considered here as "flexible wages." In order to keep this section comparable to the previous ones, we assume that the fee in each program is the same and that there is also a one-period time delay in hiring workers through the IMP (although this is of course easy to change). Under these assumptions, firms naturally prefer the IMP to the TP, since profits are higher.

The expected profits of a firm with a job opening of type j with flexible wages are

$$\Pi_j(w, w_f) = p(w)\pi(j, d, w) + (1 - p(w))\beta\pi(j, f, w_f). \tag{7}$$

One technical problem arises here: While the, in our opinion reasonable, assumptions that we have made so far guarantee an interior solution in the baseline model, this is not so with the IMP. With this program, it is very much possible that firms do not hire domestic workers at all for a certain range of jobs, since a firm might find it most profitable to offer a wage which results in a zero probability of finding a domestic worker. Assuming an interior solution, the derivative of profits with respect to domestic wages for some $\alpha_j \in [\alpha_f, \alpha_d]$ is:

$$\frac{\partial \Pi_j(w)}{\partial w} = p'(w)\pi(j, d, w) + p(w)\pi_w(j, d, w) - \beta p'(w)\pi(j, f, w_f). \tag{8}$$

Evaluating this at the wage $w^d(j)$ that solved equation (3) and the w_f that maximizes $\pi(j, f, w_f)$, it is immediate that this expression is still negative. Domestic wages will thus be lower than in the absence of a TFW program. It is not clear, though, whether the wage will be lower with flexible or fixed wages, unless we are at a corner solution, where it is

optimal for firms to set $p(w) = 0$. At an interior solution we have $\pi(j, f, w_f) \geq \pi(j, f, w^d)$, since profits $\pi(j, f, w)$ are maximized by w_f; as it enters the derivative negatively, this would speak for lower domestic wages with flexible as compared to fixed wages. The intuition is simple: If firms get more profits out of hiring TFWs, then the incentive to pay a decent wage to domestic workers to fill the position is lowered. However, with fixed wages another term appears in the expression, which is $\beta(1 - p(w))\pi_w(j, f, w) < 0$; this would suggest that domestic wages would be lower with fixed as compared to flexible wages. The intuition is that since TFWs provide higher effort at the same wage, a firm would like to pay a TFW less than a domestic worker for the same job; if the two have to be the same, it is a reason to pay a "compromise wage" which is lower than the one the firm would like to pay to domestic workers but higher than the one it would like to pay to TFWs.

The labour-market implications follow the same analysis as above and unemployment of domestic workers will increase as a consequence of introducing an IMP-type, flexible wage program. Whether a program of the fixed wage (TP) or flexible wage (IMP) type leads to more unemployment depends of course on how domestic wage offers change, as described above. Under the IMP TFWs will receive lower wages than domestic workers, but this is not (only) due to a composition effect, but (also) because the efficiency wage for the same job is higher for domestic than foreign workers. The reasoning concerning quotas or fees follows the same reasoning as in the last section, although there may be discrete jumps in domestic wages in response to a lottery quota or an increased fee, due to the possibility of a corner solution. Altogether, the models of the two different programs come to very similar qualitative predictions, though.

3 Data

This paper relies on the Canadian long-form Census data (1991, 1996, 2001, 2006) and the Canadian Labour Force Survey data (2006 - 2013) of Statistics Canada. In both cases, we use the confidential files accessed at the Ottawa, Carleton, Outaouais Local Research Data Centre (COOL RDC).

3.1 Census

The Canadian Census is a nationwide survey that is conducted every five years. We employ data from the long-form, that asks labour market questions (such as hours of work). The Census long-form questionnaires are sent to approximately 20% of the Canadian population. We restrict our attention to the 1991 through 2006 Censuses because non-permanent

immigrants were not part of the Census prior to 1991.[17] We decided against using the 2011 National Household Survey (NHS), due to the well documented limitation that it was voluntary (see Green and Milligan (2010) and Veall (2010)).[18]

Although there are no variables that directly identify TFWs in the Census, one can follow the approach used by Warman (2010) and look at non-permanent residents. To do this we first identify individuals who were not born in Canada and then remove those who were born abroad and at some point in time were granted landed immigrant status in Canada. From the remaining subsample, we then use the citizenship question to separate out Canadians who were born abroad. The remaining subsample of temporary residents of Canada consists of: 1) TFWs, 2) international students, and 3) individuals residing in Canada who are waiting for their refugee status application to be processed. We can remove the second group (students) using the information on study status in the Census, but the sample will still contain the refugee applicants residing in Canada. Normally, these refugee applicants are not allowed to work in Canada (except under cases of extreme economic hardship). Using Canadian government records, we were able to calculate the percentage of temporary residents in Canada who are not international students and found that less than 2.6 percent were refugee applicants with a valid work permit over the period 2004 through 2014. Consequently, we are confident that these sample restrictions and the fact that very few refugee applicants are allowed to work means that our TFW subsample is very close to being a 20 percent random sample of TFWs in Canada at the time of the Census.

We restrict our sample to workers that are 18 to 54 years of age and not in school. The upper age limit was imposed to abstract from the usual retirement age issue (given that it had been falling over the 1991-2006 period). Those in school were excluded because work may not be their main activity and most importantly so that we do not confound TFWs with foreign students that are in Canada on study permits. We further exclude the self-employed and those in the military because the processes that generate their labour market outcomes (e.g. hours) is very different from civilian paid employees. Finally, we also drop those that live in the territories and those posted abroad.[19]

---

[17]Starting in 1991, the "Whom to include" preamble of the long-form Census questionnaire clearly states that those persons from another country with a work permit are to answer the Census.

[18]The NHS replaced the long-form Census in 2011. The long-form Census has since been re-introduced (starting in 2016), but the data has yet to be made available.

[19]By dropping those posted abroad we remove federal and provincial employees (and their families) that work in embassies and national bases abroad.

3.2 LFS

The Labour Force Survey (LFS) is a monthly household survey that gathers information on the labour market activities of the Canadian population.[20] The survey is used, for example, for the official unemployment and employment estimates. The LFS is a fairly large survey - approximately 54,000 households are interviewed every month.

As with the Census, the LFS has a rich source of covariates, which allows us to focus on subgroups of workers that are directly affected by the TFW program. The LFS has, however, two additional features that will be helpful for this study. First, the LFS has detailed tenure information that is part of the regular LFS questionnaire. As such, we are able to focus on low-tenured native workers, a group that is most comparable to the TFWs. Second, the LFS interviews households for six consecutive months, which allows us to create rolling mini-panels (as in Brochu (2013) and Brochu and Green (2013)).[21] It allows us to compare labour transitions of both TFWs and the native born workers, something that has yet to be done in the literature.

Our LFS data start in 2006 because immigration-related questions were only introduced to the LFS as of January 2006. To focus on the TFWs, we follow a similar procedure to that of the Census. As with the Census, the LFS asks respondents their country of birth, and for those born abroad whether the respondent has ever been a landed immigrant, which allows us to separate immigrants from temporary residents.[22] We can also exclude international students from the group of temporary residents by dropping those that are in school. One cannot separate out Canadian citizens born abroad from the TFWs, though, as there is no citizenship question in the LFS.[23] However, based on our work with the Census, we have found that we can minimize the importance of the Canadians born abroad group by excluding those born in the US, France, Great Britain, and Germany – countries with which Canada has strong historical ties.[24]

We impose restrictions similar to those of the Census. We restrict our sample to civilian employees that are 18 to 54 years of age and not in school.[25] For reasons mentioned above,

---

[20]More precisely, the LFS covers the "*civilian, non-institutionalized population 15 years of age or older. It is conducted nationwide, in both the provinces and the territories. Excluded from the survey's coverage are: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces and the institutionalized population.*"

[21]A detailed explanation of how the panels are created can be found in Appendix A.

[22]The wording of the questions, and choice of answers, are essentially the same as in the Census.

[23]We face the same problem as with the Census in that we cannot separate out temporary residents who are awaiting decisions on their claims but as noted above this represents a very small fraction of our sample.

[24]If we were to rely on the country of birth and whether the respondent has ever been a landed immigrant for the 2006 Census, the first year of our LFS data, we would find that Canadians born abroad would make up 7.5% and 9.5% of the low-skill and overall TFW sample, respectively.

[25]The LFS master files which we accessed already excludes those living in the territories. As such, we do

we also exclude those born in the United States, France, Germany, and the United Kingdom.

Finally, given that our LFS and Census data have a one year overlap, i.e. 2006, we verified the comparability for that year.[26] The socio-economic characteristics are similar across datasets. Most importantly, the proportions of TFWs are very close (1.12% and 1.07% in the Census and LFS, respectively), and so are their socio-economic characteristics.[27] Such findings are, in our opinion, not surprising given the importance of the Census, and the fact that the LFS is one of Statistics Canada's flagship surveys. Both are mandatory, and both go to great length to minimize non-response.[28]

4 Empirical Specification and Results

The main specification for all our estimating equations takes the following form:

$$y_{i,t} = \beta_0 + \beta_1 tfw_{i,t} + \mathbf{x}_{i,t}\boldsymbol{\gamma} + \mathbf{w}_{i,t}\boldsymbol{\phi} + \epsilon_{i,t}, \tag{9}$$

where $y_{i,t}$ is the dependent variable of individual i in period t. $tfw_{i,t}$ is a binary variable that equals one if the individual is a TFW, and zero otherwise. The vector $\mathbf{x}_{i,t}$ accounts for the socio-demographic characteristics of each individual. It includes a female indicator variable, age (in years) and age squared, detailed educational attainment controls, and two controls for recent immigration status (i.e. whether the individual has been a landed immigrant in the last two and five years, respectively).[29] The vector $\mathbf{w}_{i,t}$, includes industry and occupational dummies, time (year) dummies, and place of residence indicators which would be identifying cities (CMA) as well as smaller towns and rural areas of each province.[30]

4.1 Hours of Work of TFWs

The first part of our analysis involved using the Census data to estimate differences in hours of work in the reference week between TFWs and the remaining population, Canadian citizens and landed immigrants. To simplify the discussion, we will refer to the latter group

---

not need to impose any geographical restrictions to match our Census sample.

[26]More precisely, we compare the 2006 Census whose reference week is May 7th to the 13th, with that of the May 2006 LFS (all rotations) whose reference week is only one week later (i.e. May 14th to the 20th). For the comparison, we also dropped from the Census those individuals born in the US, France, Great Britain, and Germany to make it comparable with our LFS sample.

[27]Our main hours of work findings which we discuss in Section 4 are also very similar across the two data sets for our full samples and also when we focus on 2006.

[28]Household non-response in the LFS is, for example, only approximately 10% over the 2006-2013 period.

[29]For some hours regressions we also include the log of the real hourly wage as an additional control.

[30]See Appendix B for a detailed description of the industry and occupational controls.

as domestic workers. In Table 1, we present our estimates from different log hours models.[31] In the first four columns, we include all TFWs, while in the estimation of the last four columns, we exclude TFWs born in the US, UK, Germany and France so as to match our LFS sample. In column (1), the set of controls in the model contains an indicator for TFWs, an indicator for female respondents, as well as a set of 322 indicators for place of residence and three census year indicators. We see that TFWs work approximately 3.2 percent longer hours per week than domestic workers. As we move across the next three columns, the set of right-hand-side controls becomes richer as we add in controls for age, education, recent immigrant status, 15 industry fixed effects, and 139 occupational fixed effects. The coefficient on the TFW indicator is positive and statistically significant in each column and indicates that TFWs work approximately 5.3 percent longer hours than domestic workers in the richest specification, column (4).

Considering columns (5) through (8), where individuals born in the US, UK, Germany, and France are excluded, we see that the coefficient on the TFW variable in each model is generally similar to its counterpart in the first four columns. The point estimates are somewhat closer to zero and the column (6) coefficient is not significant at the 10 percent level but the richest specification in column (8) indicates that TFWs work 5.2 percent longer hours than domestic workers. We believe that this model with the most control variables is the most relevant for evaluating the theoretical predictions of our model since we want to compare TFWs to domestic workers with the same education and experience and very similar job characteristics (i.e. occupation and industry). This is the implicit comparison that a domestic firm makes when deciding whether or not to apply for a permit to hire a TFW rather than continue to search for a domestic worker. Taken together, we interpret these empirical results as lending credence to the view that TFWs provide higher work effort, at least as captured by hours of work, and that this supports the idea that Canadian employers might prefer to hire a TFW over a domestic worker at the same wage rate.

Next, we carry out a similar analysis of hours differences between TFWs and domestic workers using the LFS data. The first four columns of Table 2 provide equivalent estimates to those of the last four columns of Table 1 since we exclude TFWs born in the US, UK, Germany, and France in our LFS analysis.[32] In the first column, with minimal controls, TFWs are found to work approximately 3.6 percent longer hours than domestic workers. We find a similar result in the next three columns as more controls are added to the model. In the richest specification (presented in the fourth column) TFWs work approximately 7.1 percent

---

[31]The standard errors in Table 1, and in all subsequent regression tables, are clustered at the CMA/CA/rural area level. Finally, the weights for each Census are normalized so as to add up to their respective sample size for each year of the Census.

[32]The LFS weights are normalized as to add up to their respective sample size for each year of the LFS.

longer hours per week than do domestic workers. It is worth noting that this specification includes controls for education, 19 controls for industry and 413 controls for occupation. In the next four columns of Table 2, i.e. columns (5) through (8), we augment the model using the hourly wage variable available in the LFS.[33] Conditioning on the wage allows us to compare the hours of TFWs more closely with the hours of domestic workers who might have accepted the advertised job at the same wage prior to the government granting the firm permission to hire a TFW for the case of a TFW admitted under the TP. For TFWs admitted under the IMP, conditioning on the wage is especially important since a TFW who is paid a lower hourly wage might work fewer hours (provide less effort) even if their outside option is lower if the wage difference is sufficiently large. By conditioning on the wage, the theoretical model predicts that the outside option difference should drive hours (and effort) to be higher for a TFW than for a domestic worker. Unfortunately, we cannot distinguish between TP ad IMP workers in our data so it is important to consider both cases. The coefficient on the wage variable is positive and significant in each column and its inclusion generally leads to an increase in the coefficient on the TFW variable in the log hours models. The coefficient on the TFW variable in column (8) indicates that TFWs work approximately 8.5 percent higher hours than domestic workers.

We have carried out an equivalent analysis with the LFS data separately by gender and these results are presented in Tables A2a and A2b of the appendix. The estimated coefficients on the TFW variables are positive and significant in the richest model for men without controlling for the wage and in all of the specifications where we control for the wage. For women, we find larger coefficients on the TFW variable than for men in the equivalent specifications suggesting that female TFWs work longer hours than their Canadian counterparts and these differences are much larger than the equivalent differences for male TFWs. This gender difference is interesting and might be explained in our model by a lower outside option in the home country for female TFWs relative to male TFWs. Another possibility might be a greater desire on the part of female TFWs (relative to their male TFWs counterparts) to earn money to send back to their home country to support family members there. An investigation of these possible explanations is beyond the scope of the current study but would be worthy of further investigation.

It is possible that the TFW/domestic worker hours of work differences could be driven at

---

[33]Unfortunately, no equivalent variable is available in the Canadian Census. The only way to approximate the hourly wage is to take annual earnings in the reference year and divide by the product of the hours of work in the reference week (in the May of the year following the reference year) and the weeks of work in the reference year. It is worth noting that there is no way to tell if the TFW was in Canada for all 52 weeks of the previous (reference) year meaning that the weeks information and the earnings information could relate in part to a job held in the TFW's home country. Given this imprecision, we focus on the LFS wage rate measure.

least in part from differences in preferences over labour supply across TFWs and domestic workers. While our stylized theoretical model does not account for this possibility, it is worth considering how Canadian employers might react to a well known higher labour supply on the part of TFWs relative to domestic workers. Given that employers must wait a period and then pay a fee in order to hire a TFW, the employer would prefer that the TFW be prepared to work longer hours since this would allow the employer to gain the per hour benefit from the TFW spread over a larger number of hours. Similarly, if the employer is incurring search costs such as advertizing costs in the first period when searching for a domestic worker, the fact that domestic workers are known to work fewer hours on average relative to TFWs would also serve to make the net gain even greater to not filling the job with a domestic worker and being then able to hire a TFW. Consequently, we see a desire to work longer hours on the part of TFWs relative to domestic workers (either due to a difference in preferences or perhaps lower wealth on the part of the TFW relative to a domestic worker) as reinforcing the idea of our model that employers may strictly prefer to hire a TFW over a domestic worker even at the same hourly wage.

Next, we explore the robustness of our findings using the LFS data to the role of tenure with the firm. While our analysis controls for age, it may be that TFWs differ from our sample of Canadian workers since they tend to be very recently hired workers. We repeat our analysis after conditioning our sample by keeping only individuals with one year or less of tenure with the current firm. Comparing the results of Table 3 to Table 2 (where all workers regardless of tenure are included) we see larger coefficients on the TFW variables in Table 3 suggesting that TFWs work 4.5 to 8.2 percent longer hours of work per week than Canadian workers in the models without conditioning on the wage and 8.1 to 9.6 percent higher hours of work in equivalent models with the wage as a control variable. Tables A3a and A3b contain equivalent results where the estimation is carried out separately by gender. Once again we see larger TFW/Canadian differences in hours for women than for men.

4.2   Hours Away from Work

In Table 4, we present regression estimates from a Tobit model where the dependent variable is the number of hours away from work (part-time absence) in the reference week.[34] The model is estimated over the same LFS sample as in Table 2. In the simplest specification of column (1), we see 3.3 fewer hours away from the workplace each week for TFWs relative to other workers. As we add more controls this effect is diminished somewhat to -2.4 hours

---

[34]See Bradley, Green, and Leeves (2007) for a study that treats absenteeism as a measure of worker effort. See also Shi and Skuterud (2015) for a similar study on the determinants of absenteeism using Canadian survey and weather data.

in column (4) with the richest set of controls but not controlling for the hourly wage rate. Once we add in the hourly wage rate to each model we see somewhat smaller effects but still significant indicating 2.6 fewer hours away from work in the simplest model and 2.2 fewer hours away in the richest model of column (8).

We repeat this analysis conditioning on individuals with one year or less of job tenure so as to better match TFWs with domestic workers in similarly recent jobs. Comparing the coefficients on the TFW variable in Table 5 to those in Table 4, we generally see similar patterns. TFWs have fewer hours away from the job in the reference week than do other workers and this effect is largest in the simple model without a control for the wage (1), and smallest, but still economically meaningful at -2.32 hours, in the richest model of column (8).

Taken together, the results from the hours away from the job analysis provides further evidence that firms receive greater labour productivity (captured as greater effort in our theoretical model) from TFWs than from domestic workers and this is true both using simple specifications as well as using very rich models where we control for the hourly wage paid as well as extensive personal and job characteristics. This supports the view that Canadian firms may have pursued increasing numbers of TFWs not just because of possible difficulties in finding Canadian workers but also because of the greater efficiency units of labour received by the TFWs for the same wage paid.

4.3   Worker Retention, Quits and Layoffs

Next, we consider the employment dynamics of TFWs and other workers in the Canadian labour market using the longitudinal structure of the LFS data. The rolling structure of participation in the survey – with one sixth of the sample entering the sample frame each month and one sixth of the sample exiting – means that individuals in our sample can spend at most six months in the LFS. Up to this point in our analysis, we have considered differences in worker effort or efficiency as being captured by differences in hours of work and in hours absent from work. Here, we consider the possibility that worker efficiency could in part be captured by a higher probability of staying with the firm. We construct a balanced two-month panel of observations using the LFS data for the incoming rotations. Specifically, we take the individuals in the sample for their first month and restrict this sample further by keeping these individuals if they also appear in the sample the next month. Given that individuals are normally meant to stay in the sample for 6 months, this balanced two-month sample is free of the attrition due to individuals rotating out of the sample. This is also the longitudinal sample which is least likely to be affected by overall attrition from the

longitudinal frame since we are only requiring individuals to be present in the sample for two months.

In Table 6, we present estimates from a linear probability model of the incidence of continuing with the current firm from one month to the next.[35] Those workers who do not continue with the current firm may be either employed at a different firm or not be employed at all. We condition on individuals with less than 12 months of tenure with the firm. This is intended to greatly reduce the probability of job terminations due to TFWs reaching the end of their work permits. Placing the same condition on Canadian workers means that we are comparing workers at similar stages of their relationship with the firm (i.e. low tenure workers). In column (1), TFWs are roughly two percentage points more likely to have a job continuation across the two-month period under consideration than are Canadian workers after controlling for gender but no other factors. In column (2), estimates are presented from an equivalent model but with controls for gender, age, education, and immigrant status. The estimated coefficient of the TFW variable is closer to zero and not statistically significant. In the final two columns after including controls for industry (column 3) and then both industry and occupation (column 4), we see strong positive differences in the probability of continuation for TFWs relative to Canadian workers. The coefficient from column (4) suggests that TFWs are 2.5 percentage points more likely to continue with the same employer from the first month of the LFS panel to the second month than are otherwise similar Canadian workers in the same industry and occupation. In columns (5) through (8) we repeat the analysis of the first four columns conditioning on the log hourly wage paid in the person's job in month 1 of the two month panel sample. This is important for the same reasons as it was important in the analysis above on the hours of work and hours away from the job. As much as possible, we want to compare TFWs and domestic workers in the same kinds of jobs. In each of the models of columns (5) through (8), a higher wage is associated with a higher probability of continuing in the job. Conditioning on the wage in the first month leads to somewhat larger TFW/domestic worker differences in continuation rates of 3 percent in the simplest model of column (5) and 3.1 percent in the richest models of column (8).

Next, we delve more deeply into the event of a month-on-month job separation considering both the incidence of a quit and the incidence of a layoff. While both types of separation would be considered in our framework as negative outcomes for the firm or more specifically as lower values of the efficiency variable, the layoff event could be especially negative. If the layoff is driven by lower worker productivity than the firm had expected, then a layoff could

---

[35]We have repeated the analysis of this subsection of the paper using probit estimation and the marginal probabilities are very similar to what is reported based on the the linear probability model estimation.

signal a lower value of e in our model. For example, if a worker were to put in lower effort than the firm had expected given the wage then the firm might decide to end the employment relationship. If the layoff event is instead driven by a drop in demand for the firm's products then this should impact TFWs and domestic workers in a similar manner and we would not expect a different layoff probability for one group relative to the other. However, if TFWs have higher efficiency, e, as predicted by our model due to their lower outside option, u, then when an adverse product demand shock is experienced, the firm would prefer to layoff domestic workers rather than TFWs for the same wage paid. Under either of these scenarios, we would expect TFWs to have lower probabilities of being laid off than Canadian workers.

In Table 7, estimates are presented from the linear probability of quits. In contrast to what was found in Table 6, none of the coefficients on the TFW variable are statistically significant and in each case the coefficient estimates are close to zero with standard errors that are in fact smaller than their counterparts from Table 6. This suggests that the higher rates of continuation found in Table 6 for TFWs relative to Canadians is not driven by a lower rate of quits on the part of TFWs relative to Canadian. From columns (5) through (8), we see that a higher wage is associated with a lower probability of quitting the job but including the log hourly wage does not have a noticeable effect on the (basically zero) TFW/domestic difference in quit rates.

In order to see if the higher continuation rates are driven by lower layoff rates for TFWs relative to Canadians, we repeat this analysis replacing the quit incidence variable with its layoff counterpart. These estimates are presented in Table 8. In each column of the table, we see that the coefficient on the TFW variable is negative and statistically significant. In the first four columns, where the log wage control is not included, we find a 1.0 to 1.7 percentage point lower probability of being laid off from a job for a TFW than for a Canadian worker. Including the log wage form the first month of the two month panel leads a to slightly larger TFW/domestic worker differences in each case. The largest difference (1.8 percentage points) is found in column (8) which is the richest specification of controls and this is the one we argue is most relevant since we are controlling for gender, education, age, industry, and occupation to the greatest extent possible with our data. In addition, each specification contains detailed controls for province and city or rural area within each province. Consequently, we argue that these differences in layoff rates are unlikely to be driven by TFWs being employed in firms or regions of the country where layoffs may be less likely to occur. Although not explicitly modeled within our efficiency-wage framework, our layoff findings are in line with the idea that, due to their lower outside option, TFWs work harder (which we find as measured by higher hours worked and lower hours away from work) and this means that, for a given wage, the firm is less likely to lay off these workers – whether it is because the effort is directly

observed or because the firm is faced with a drop in demand for its product(s).

As with all analysis using panel data, attrition of individuals from the longitudinal frame across time is always a concern. The LFS is designed to track individuals so long as they reside in the same dwelling. Consequently, if an individual leaves their dwelling either to move to another location in Canada or to move abroad then we would not observe them in the next month of the LFS and they would not be included in our balanced two-month panel. It is difficult to say whether TFWs are more or less likely to move house within Canada than are Canadian workers; therefore, it is difficult to speculate on any biases that this form of attrition may have on our analysis of retention, quits, and layoffs. A natural concern relates to TFWs leaving Canada. We expect TFWs to have higher exit rates from Canada than Canadian workers. At the end of their work permits, TFWs are required to leave the country while Canadian workers never face this prospect. However, for our longitudinal analysis, the relevant question is whether TFWs with less than one year of tenure with the firm are more likely to leave Canada. We suspect that TFWs are somewhat more likely to leave Canada since some of them may only be on a one-year work permit and so they may be required to leave. To investigate the importance of this, we repeated our transition analysis over the subsample of workers with 6 months or less of job tenure and found qualitatively similar results. This suggests that there is not an important problem of bias due to TFWs needing to leave at the end of their work permit periods within the 2 month mini-panel since shorter tenure workers are less likely to be affected by this form of attrition.

Another concern relates to the fact that a TFW who quits or is laid off may be required to leave the country. We argue that this is unlikely to be an important issue for our analysis of quits and layoffs given that we are looking at transitions over a one month period. Given that international travel must be arranged after the job separation and given that accommodation is likely to have been arranged for an extended period of time, we argue that a TFW facing a job separation is likely to reside in Canada for several weeks or longer after an unanticipated end to a job which one would expect for TFWs with less than 12 months of job tenure. However, this is an important area for further research perhaps using administrative data files that reveal both the end date of a job and the exit date of the TFW for the case of different numbers of months of tenure with the firm.

4.4   Wage Rates of TFWs

Next, we investigate how the wage rates of TFWs compare to those of domestic workers. Using the detailed information available in the LFS on hourly wage rates, we estimate log real hourly wage models using different specifications of the set of right-hand-side control variables

and present our estimates in Table 9.[36] We see a sizable wage gap of approximately -27.4 percent for TFWs relative to domestic workers in the simplest model which only falls to -15 percent when we consider the model with the richest set of controls in column (4). In Table A6 of the appendix we present equivalent results estimated separately over the subsamples of women and men. In each case, TFWs are paid wages that are approximately 23.8 and 31.3 percent lower for men and women respectively than their Canadian counterparts in the simplest specification. Once we consider the estimates from the specification with the richest set of controls we see similar wage disadvantages of approximately -14.6 percent for men and -15.4 percent for women.

In order to explore whether these differences are driven by lower tenure with the firm on the part of the TFWs, we present in Table 10 equivalent estimates to those of Table 9, but over the subsample of individuals with less than one year of tenure with their current employer. Estimated over the pooled sample of men and women, TFWs have wages that are approximately 16.5 percent lower than Canadian workers in the simplest model of column (1) and 13.0 percent lower in the richest model of column (4). This suggests that the TFW/Canadian-worker wage differences found above are not (only) driven by TFWs having lower job tenure than Canadian workers.

Our wage-regression findings are consistent with the predictions of our theoretical model in that the wage rates paid to TFWs are lower on average than the wage rates paid to domestic workers. As we condition on more personal and job characteristics, the differences narrow somewhat but a sizable disadvantage for TFWs remains. In terms of the fixed wage version of our model where TFWs must receive the advertised wage (the TP case), this difference results from the fact that higher-wage jobs have a higher probability of being filled by a domestic worker and lower-wage jobs are more likely to be filled by a TFW at that relatively low wage (composition effect). In the flexible wage version of our model, firms are allowed to pay different wages to domestic and foreign workers; since the outside option of TFWs is lower, the efficiency wage of TFWs is also lower than for domestic workers, and so the model predicts a direct wage discrimination of TFWs under the IMP.[37]

---

[36]We deflate the (nominal) hourly wage using the CPI for the same province and month/year.

[37]Yet another possibility is that at least some firms are able to circumvent the TP requirement that a TFW be actually paid the wage that was advertised to domestic workers and that was required by the government when agreeing to a TFW permit. Based on anecdotal evidence in Tomlinson (2014), it does appear that not all firms lived up to their obligations under the TP. A TFW who was underpaid could complain but this would likely lead to their deportation from Canada. Given that for many TFWs the wage paid would be higher than wages in their home country, the TFWs may have tolerated these deviations from the TP agreement on the part of some firms. Alternatively, the TFWs may not be aware of the equal-wage requirement.

5 Robustness Checks

In this section we carry-out robustness checks and show that our findings are not sensitive to additional sample restrictions based on: 1) the industry of employment, 2) the level of education, 3) union status, or 4) survey year.

It could be argued that the part of the Canadian TFW program that is geared towards agricultural workers is different, and that the agricultural sector itself is very different than other sectors of the economy: i) the agricultural sector is very seasonal in nature, ii) the same TFWs often come back every year, iii) TFWs will often live on site (e.g. on the farm), and iv) the availability of work once on site (on the farm) is weather dependent.[38] As such, we carried out robustness checks where we exclude workers in the agricultural sector (industry). Our results for hours and wages are essentially the same as those reported above. For transitions, one finds the same patterns (the impact is still through layoffs), but the difference between domestic workers and TFWs is slightly smaller. Finally, we expanded our industry restrictions to exclude the primary sector as a whole, which means we also excluded hunting and fishing, as these latter industries also have a strong seasonal component. Again, the results were very similar.

Some TFW programs are directed at more highly skilled workers (e.g. universities hiring non-Canadian professors), whereas others focus on occupations which demand fewer skills. Given that low-skilled domestic workers tend to have worse labour market outcomes, it is relevant from a public policy point of view to explore the robustness of our results along the skill dimension. We focused on those with less than a university undergraduate degree, and find the same general patterns. If anything, the effect of being a TFW is a little more pronounced. They work even longer hours (and spend less time away), and they are less likely to be laid off.[39]

Firms and workers have less flexibility in a union setting because of the presence of a collective agreement. The fact that TFWs are less likely to be covered by a collective agreement could therefore matter for our findings. Our hours results, for example, could be the result of TFWs, or their firms, having a greater possibility of choosing/adjusting hours of work.[40] We therefore re-estimated all our regressions and excluded unionized workers (and those that are not unionized but covered by a collective agreement) and found that it had little impact on our findings. The TFW/domestic worker hours differential, however, tends

---

[38]In some cases domestic workers and TFWs do different types of jobs within the agricultural sector. TFWs are, for example, more present in fruit picking jobs.

[39]The effect on quits remains economically and statistically insignificant.

[40]Alternatively, it could be the case that unions push for full-time work, and as such, we underestimate the true effect.

to be slightly larger.

We verified the robustness of our absenteeism results by looking at whether TFWs are more apt to be i) absent from work conditional on having worked part of the week,[41] and ii) absent from work the whole reference week. We find that TFWs are less likely to be absent, both part-time and full-time, and the findings are economically and statistically significant.

Finally, we verified whether our findings are sensitive to the choice of sample period. TFW programs grew over time, and the importance of each type of program has also fluctuated. Our findings are not sensitive to the choice of years. For the Census findings, for example, focusing on the earlier years, say 1991 and 1996 only, or just the last year of 2006 does not materially affect our hours results.

6   Concluding Remarks

From our analysis we can reach a number of conclusions. Temporary foreign worker (TFW) programs can be effective ways to provide domestic employers with workers when vacancies are difficult to fill. Over the period studied, there were two broad categories of TFWs coming to Canada: 1) Temporary Foreign Worker Program (TP) workers where firms had to advertize the job domestically and then, if unsuccessful, could hire a TFW at the previously advertized wage, and 2) International Mobility Program (IMP) workers where firms were not required to advertize nor were there restrictions on the level of the wage payment. Our theoretical analysis reveals that when worker effort is positively related to the wage paid and the wage in the TFW home country is lower (or employment opportunities are worse) than in the domestic country, the TFW program can have unintended consequences on firm behavior. Specifically, firms will choose to advertise at a lower wage than they would in the absence of the TFW program so as to reduce the probability that a domestic worker will be found for the job and increase the probability of hiring a TFW who will work harder than a domestic worker for the same wage. This is true both under the TP where the advertized wage must be paid to the TFW and under the IMP where the wage is not restricted in this way.

Using confidential data from the Canadian Census and Labour Force Survey, we provide evidence in support of the prediction that TFWs will exert higher effort than domestic workers. TFWs work three to 10 percent more hours per week than do domestic workers and this was found in both the Census and the LFS, and was found to be true in the LFS even after detailed controls for education, industry, occupation, and the wage paid. This

---

[41]In the previous section we looked at whether the TFWs were absent fewer hours. It could be that they are equally likely to be absent part-time, but that conditional on being absent they are away fewer hours.

TFW hours advantage is larger for women than for men. In addition, we find that TFWs have fewer hours away from the job each week which is also consistent with a higher effort in our model.

We also use the rotating panel structure of the LFS data to study job transitions of TFWs and Canadian workers. One way to interpret the theoretical finding of greater efficiency of TFWs compared with domestic workers is that, over a fixed time frame, TFWs may commit to staying with the firm rather than move to another job. If that were the case then we should see greater job retention rates for TFWs than for domestic workers. Using two-month balanced panels, we find that TFWs are more likely to continue employment with the same employer than are comparable Canadian workers. However, this is not driven by lower probabilities of quitting the job but is instead due to a lower probability of being laid off. It may be that this is due to firms being more likely to lay off their domestic workers than their TFWs when facing a drop in their product demand, since the firm is earning a higher profit per worker from the TFWs (due to their higher effort) than they are in an equivalent job (with the same wage) filled by a domestic worker. Alternatively, if firms directly observed a lack of effort (shirking) by some of their employees, they would be less likely to lay off TFWs than domestic workers, since the former provide on average more effort.

In the final part of our empirical analysis, we find that hourly wage rates paid to TFWs are in fact lower than wage rates paid to domestic workers in Canada with the difference ranging from approximately 31 percent for women and 24 percent for men in our simplest specification and falling to a still economically significant 14.6 percent for men and 15.4 percent for women after the most detailed set of controls are included. This is consistent with our theoretical prediction for the TP case, in spite of the fact that TFWs are supposed to be paid the same wage as domestic workers for the same job. The wage gap arises because of the compositional differences in jobs that go to TFWs relative to jobs that typically go to domestic workers. A high wage job is more likely to be filled by a domestic worker and less likely to be left vacant – and thus leading to the possibility of hiring a TFW – than is the case for a low wage job. For the IMP case, we would expect TFWs to have lower wages than domestic workers even for the same job due to the TFWs' lower outside option relative to domestic workers and so this finding is consistent with our theoretical predictions.

Combined, our theoretical and empirical analyses suggest that a TFW (or guest worker) program is likely to lead to a larger number of TFWs hired by firms than originally intended. It is clear that the purpose of the Canadian program was to aid firms to find suitable workers while not having a detrimental effect on Canadian workers. However, our theoretical analysis suggests that once we consider an efficiency-wage framework (rather than a neoclassical model of the labour market), the TFW program is likely to lower wage rates and raise

unemployment of relatively less skilled domestic workers. Restricting the firm to pay the wage that had been advertized domestically to the TFW (as in the TP case) is not sufficient to prevent these effects. This is despite the fact that we assume that TFWs do not lower the marginal product of labour.

When we investigate how quotas or higher fees would affect the model outcomes, we find that they do not provide any clear solutions. Quotas based on a first-come, first-serve basis affect in equal proportions the benefits and costs of either the TP or IMP; thus, if it is useful to have such a program at all, this type of quota would be detrimental to welfare. A quota based on a lottery mitigates the unintended consequences of downward pressure on domestic wages and employment, but also reduces the intended advantages of firms hiring foreign workers when they were not able to find domestic workers. Higher fees for hiring TFWs also attenuate the negative effects of these programs, but make it economically not viable for firms to hire foreigners when the supply of domestic workers is lowest.

Appendix

Appendix A

This appendix documents the creation of the LFS mini-panels. The LFS uses a rotating panel design where households are interviewed for six consecutive months, and every month one-sixth of households are replaced. The LFS is designed to produce cross-sectional samples, and as such is not a panel *per se*. The survey follows dwellings, and not individuals themselves—an individual that leaves the household (dwelling) is beyond the scope of the survey. Furthermore, the LFS does not have a single person identifier variable. However, one can uniquely identify individuals across months using a series of variables that are found in the LFS. More precisely, we rely on the month, the one-digit province code (PROV1), the pseudo UIC regions (PSEUDOUI), the regional strata (FRAME), the super-stratum (STRAFRAM), the sample design type (TYPE), the first-stage sampling unit (CLUST), the rotation number (ROTATION), the number assigned to dwellings within a cluster (LIST-LINE), the multiple dwelling code for structures that have more than one dwelling (MULT), and the LINE variables.

Given that we use the LFS to explore labour market transitions, we drop individuals that have inconsistent tenure spells across the periods of the panel. An individual that worked in period 1 must have in the next period 1) stayed with the same employer (i.e. have one more month of tenure in period two), 2) started a new job (i.e. have one month of tenure in period two), or 3) be out of work (i.e. have no job tenure in period two). Finally, we removed individuals with fully imputed records in any of the periods of the mini-panel.

Appendix B

In this appendix we provide more detail on how the indicators for both industry and occupation are constructed to ensure consistency across time for both Census and LFS datasets.

Census (1991, 1996, 2001, and 2006): The industry dummies represent the broad categories of the 1980 Standard Industry classification (SIC). The 1980 SIC is available in the 1991, 1996, and 2001 Censuses, but not for 2006 which relies on the 2002 North American Classification System (NAICS). At the broad category level (the level we use), the NAICS and the SIC are very close. We rely on the 2002 NAICS to 1980 SIC concordance suggested in Lemieux and Riddell (2015). As for the occupational dummies, they were constructed using the 1991 Standard Occupational Classification (SOC) which is available in all four Censuses.

LFS (2006-2013): The LFS provides time-consistent series for both industries and occupations. The industry dummies reflects 20 broad industry categories of the 2002 NAICS. As for the detailed occupation dummies, they are based on the 2006 National Occupation Classification System (NOC-S).

References

Aydemir, A., and G. J. Borjas (2007): "Cross-Country Variation in the Impact of International Migration: Canada, Mexico, and the United States," *Journal of the European Economic Association*, 5(4), 663–708.

Beine, M., S. Coulombe, and W. N. Vermeulen (2015): "Dutch Disease and the Mitigation Effect of Migration: Evidence from Canadian Provinces," *Economic Journal*, 125(589), 1574–1615.

Bell, L. A., and R. B. Freeman (2001): "The Incentive for Working Hard: Explaining Hours Worked Differences in the US and Germany," *Labour Economics*, 8(2), 181–202.

Bishop, J. A., K. V. Chow, and L. A. Zeager (2003): "Decomposing Lorenz and Concentration Curves," *International Economic Review*, 44(3), 965–978.

Bradley, S., C. Green, and G. Leeves (2007): "Worker Absence and Shirking: Evidence from Matched Teacher-School Data," *Labour Economics*, 14(3), 319–334.

Brenner, J. (2010): "Life-Cycle Variations in the Association between Current and Lifetime Earnings: Evidence for German Natives and Guest Workers," *Labour Economics*, 17(2), 392–406.

Brochu, P. (2013): "The Source of the New Canadian Job Stability Patterns," *Canadian Journal of Economics*, 46(2), 412–440.

Brochu, P., and D. A. Green (2013): "The Impact of Minimum Wages on Labour Market Transitions," *Economic Journal*, 123(573), 1203–1235.

BULOW, J. I., AND L. H. SUMMERS (1986): "A Theory of Dual Labor Markets with Application to Industrial Policy, Discrimination, and Keynesian Unemployment," *Journal of Labor Economics*, 4(3), 376–414.

CARD, D. (2001): "Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration," *Journal of Labor Economics*, 19(1), 22–64.

DJAJIĆ, S. (1989): "Migrants in a Guest-Worker System: A Utility Maximizing Approach," *Journal of Development Economics*, 31(2), 327–339.

———— (2013): "Some Essentials of a Workable Guest-Worker Program," *International Economic Review*, 54(2), 739–766.

DJAJIĆ, S., AND A. MESNARD (2015): "Guest Workers in the Underground Economy," *Labour Economics*, 35(C), 53–62.

DJAJIĆ, S., M. S. MICHAEL, AND A. VINOGRADOVA (2012): "Migration of Skilled Workers: Policy Interaction between Host and Source Countries," *Journal of Public Economics*, 96(11), 1015–1024.

DJAJIĆ, S., AND R. MILBOURNE (1988): "A General Equilibrium Model of Guest-Worker Migration: The Source-Country Perspective," *Journal of International Economics*, 25(3-4), 335–351.

GREEN, D. A., AND K. MILLIGAN (2010): "The Importance of the Long Form Census to Canada," *Canadian Public Policy*, 36(3), 383–388.

GREEN, D. A., AND C. WORSWICK (2012): "Immigrant Earnings Profiles in the Presence of Human Capital Investment: Measuring Cohort and Macro Effects," *Labour Economics*, 19(2), 241–259.

GROSS, D. M. (2014): "Temporary Foreign Workers in Canada: Are they Really Filling Labour Shortages?," *CD Howe Institute Commentary*, 407.

GROSS, D. M., AND N. SCHMITT (2012): "Temporary Foreign Workers and Regional Labour Market Disparities in Canada," *Canadian Public Policy*, 38(2), 233–263.

LEMIEUX, T., AND W. C. RIDDELL (2015): "Top Incomes in Canada: Evidence from the Census," CLSRN Working Paper no. 153.

MÜLLER, T. (2003a): "Migration Policy in a Small Open Economy with a Dual Labor Market," *Review of International Economics*, 11(1), 130–143.

———— (2003b): "Migration, Unemployment and Discrimination," *European Economic Review*, 47(3), 409–427.

SCHMIDT, C. M. (1997): "Immigrant Performance in Germany: Labor Earnings of Ethnic German Migrants and Foreign Guest-Workers," *Quarterly Review of Economics and Finance*, 37(1), 379–397.

SHAPIRO, C., AND J. E. STIGLITZ (1984): "Equilibrium Unemployment as a Worker Discipline Device," *American Economic Review*, 74(3), 433–44.

SHI, J., AND M. SKUTERUD (2015): "Gone Fishing! Reported Sickness Absenteeism and the Weather," *Economic Inquiry*, 53(1), 388–405.

TOMLINSON, K. (2014): "McDonald's Accused of Favouring Foreign Workers," http://www.cbc.ca/news/canada/british-columbia/mcdonald-s-accused-of-favouring-foreign-workers-1.2598684.

VEALL, M. R. (2010): "2B or Not 2B? What Should Have Happened with the Canadian Long Form Census? What Should Happen Now?," *Canadian Public Policy*, 36(3), 395–399.

WARMAN, C. (2010): "The Returns of Foreign Credentials of Temporary Foreign Workers and Recently Landed Immigrants in Canada," in *Canadian Immigration: Economic Evidence for a Dynamic Policy Environment*, ed. by T. McDonald, E. Ruddick, A. Sweetman and C. Worswick, Queen's Policy Studies Series, pp. 209–233. McGill Queen's University Press, Kingston, Ontario.

WEISS, A., A. L. HILLMAN, AND G. S. EPSTEIN (1999): "Creating Illegal Immigrants," *Journal of Population Economics*, 12(1), 3–21.

YELLEN, J. L. (1984): "Efficiency Wage Models of Unemployment," *American Economic Review*, 74(2), 200–205.

Table 1: Log Hours in Reference Week Regressions, Both Genders (Census Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	0.032***	0.025***	0.028***	0.053***	0.020*	0.016	0.021**	0.052***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)	(0.010)
Female	-0.212***	-0.213***	-0.179***	-0.148***	-0.210***	-0.212***	-0.177***	-0.147***
	(0.012)	(0.013)	(0.010)	(0.009)	(0.012)	(0.013)	(0.010)	(0.009)
Age		0.017***	0.014***	0.010***		0.017***	0.014***	0.010***
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
Age^2		-0.000***	-0.000***	-0.000***		-0.000***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.013***	-0.017***	-0.008***		-0.013***	-0.017***	-0.009***
		(0.002)	(0.002)	(0.001)		(0.002)	(0.002)	(0.001)
Trade Certificate		0.022***	0.025***	0.018***		0.022***	0.025***	0.018***
		(0.002)	(0.002)	(0.001)		(0.002)	(0.002)	(0.001)
Community College		0.016***	0.026***	0.014***		0.016***	0.025***	0.014***
		(0.002)	(0.002)	(0.001)		(0.002)	(0.002)	(0.001)
University Certificate below Degree		0.021***	0.037***	0.014***		0.021***	0.037***	0.014***
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.001)
Undergraduate Degree		0.029***	0.051***	0.014***		0.029***	0.052***	0.014***
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.001)
Certificate above an Undergrad. Degree		0.049***	0.092***	0.040***		0.049***	0.092***	0.041***
		(0.004)	(0.004)	(0.004)		(0.004)	(0.003)	(0.003)
Medicine, Dentistry, Veterinary Med. or Optometry		0.121***	0.168***	0.038***		0.115***	0.161***	0.034***
		(0.009)	(0.009)	(0.007)		(0.010)	(0.010)	(0.008)
Master's Degree		0.057***	0.090***	0.037***		0.056***	0.090***	0.038***
		(0.004)	(0.004)	(0.003)		(0.003)	(0.004)	(0.003)
Ph.D.		0.081***	0.145***	0.086***		0.075***	0.137***	0.082***
		(0.005)	(0.009)	(0.009)		(0.005)	(0.009)	(0.009)
Immigrated to Canada less than 2 years earlier		-0.022***	-0.020***	-0.012***		-0.025***	-0.022***	-0.013***
		(0.003)	(0.003)	(0.003)		(0.003)	(0.003)	(0.003)
Immigrated to Canada less than 5 years earlier		-0.028***	-0.034***	-0.014***		-0.029***	-0.036***	-0.014***
		(0.003)	(0.002)	(0.002)		(0.003)	(0.002)	(0.003)
Industry Controls (15)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (139)	No	No	No	Yes	No	No	No	Yes
Constant	3.713***	3.392***	3.492***	3.733***	3.711***	3.385***	3.486***	3.769***
	(0.006)	(0.019)	(0.017)	(0.013)	(0.006)	(0.020)	(0.018)	(0.021)
N	6,791,450	6,791,450	6,791,450	6,791,450	6,519,780	6,519,780	6,519,780	6,519,780

Notes. OLS regression results. Dependent variable: Log of hours worked in the reference week. All Census regressions contain survey year and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. The number of observations are rounded to a base of 5. Columns (5)-(8) excludes those born in the US, the UK, Germany, and France. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 2: Log Hours per Week in Main Job Regressions, Both Genders (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	0.036***	0.034***	0.040***	0.071***	0.073***	0.072***	0.069***	0.085***
	(0.007)	(0.008)	(0.009)	(0.009)	(0.008)	(0.008)	(0.009)	(0.009)
Log Hourly Wage					0.138***	0.133***	0.132***	0.090***
					(0.005)	(0.006)	(0.006)	(0.005)
Female	-0.176***	-0.180***	-0.139***	-0.106***	-0.154***	-0.153***	-0.115***	-0.094***
	(0.013)	(0.013)	(0.009)	(0.007)	(0.011)	(0.006)	(0.006)	(0.006)
Age		0.016***	0.013***	0.007***		0.008***	0.006***	0.004**
		(0.001)	(0.001)	(0.001)		(0.002)	(0.001)	(0.001)
Age^2		-0.000***	-0.000***	-0.000***		-0.000***	-0.000***	-0.000**
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.009***	-0.014***	-0.006**		0.008***	0.000	-0.000
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Trade Certificate		0.032***	0.026***	0.015***		0.017***	0.017***	0.011***
		(0.002)	(0.002)	(0.001)		(0.002)	(0.002)	(0.002)
Community College		0.017***	0.024***	0.012***		-0.006*	0.010***	0.008***
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
University Certificate below Degree		0.039***	0.047***	0.022***		0.003	0.021***	0.016***
		(0.003)	(0.004)	(0.003)		(0.004)	(0.003)	(0.003)
Undergraduate Degree		0.047***	0.057***	0.018***		-0.003	0.021***	0.010***
		(0.003)	(0.003)	(0.002)		(0.004)	(0.002)	(0.002)
Graduate Degree		0.071***	0.089***	0.035***		0.005	0.039***	0.023***
		(0.003)	(0.005)	(0.003)		(0.003)	(0.004)	(0.003)
Immigrated to Canada less than 2 years earlier		-0.017	-0.011	0.013		0.017*	0.016*	0.025***
		(0.010)	(0.009)	(0.008)		(0.006)	(0.007)	(0.007)
Immigrated to Canada less than 5 years earlier		-0.049***	-0.049***	-0.017*		-0.003	-0.011	0.001
		(0.008)	(0.008)	(0.007)		(0.008)	(0.007)	(0.007)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	3.680***	3.335***	3.486***	3.708***	3.282***	3.145***	3.290***	3.499***
	(0.007)	(0.033)	(0.027)	(0.022)	(0.012)	(0.024)	(0.022)	(0.019)
N	530,796	530,796	530,796	530,796	530,796	530,796	530,796	530,796

Notes. OLS regression results. Dependent variable: Log of hours worked at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 3: Log Hours per Week in Main Job Regressions, Less than 1 Year of Tenure, Both Genders (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	0.062***	0.045*	0.051**	0.082***	0.093***	0.089***	0.081***	0.096***
	(0.016)	(0.017)	(0.019)	(0.017)	(0.017)	(0.017)	(0.018)	(0.017)
Log Hourly Wage					0.187***	0.183***	0.162***	0.113***
					(0.008)	(0.009)	(0.008)	(0.008)
Female	-0.209***	-0.214***	-0.153***	-0.118***	-0.177***	-0.176***	-0.127***	-0.105***
	(0.017)	(0.017)	(0.011)	(0.009)	(0.014)	(0.014)	(0.010)	(0.008)
Age		0.017***	0.013***	0.007***		0.007*	0.006*	0.003
		(0.003)	(0.002)	(0.002)		(0.003)	(0.003)	(0.001)
Age^2		-0.000***	-0.000***	-0.000***		0.003	-0.000**	-0.000
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.012	-0.018**	-0.008		0.003	-0.006	-0.003
		(0.006)	(0.005)	(0.005)		(0.006)	(0.005)	(0.006)
Trade Certificate		0.064***	0.046***	0.029***		0.039***	0.031***	0.023***
		(0.006)	(0.005)	(0.005)		(0.004)	(0.004)	(0.005)
Community College		0.037***	0.037***	0.019***		0.011*	0.023***	0.015*
		(0.006)	(0.007)	(0.007)		(0.005)	(0.006)	(0.006)
University Certificate below Degree		0.059***	0.065***	0.035***		0.020*	0.039***	0.028*
		(0.009)	(0.010)	(0.011)		(0.009)	(0.010)	(0.011)
Undergraduate Degree		0.064***	0.072***	0.027**		0.006	0.035***	0.018*
		(0.008)	(0.009)	(0.009)		(0.007)	(0.008)	(0.008)
Graduate Degree		0.094***	0.113***	0.046***		0.008	0.056***	0.030**
		(0.008)	(0.010)	(0.010)		(0.007)	(0.008)	(0.009)
Immigrated to Canada less than 2 years earlier		-0.003	0.004	0.029*		0.038***	0.033**	0.042***
		(0.013)	(0.012)	(0.013)		(0.010)	(0.011)	(0.012)
Immigrated to Canada less than 5 years earlier		-0.045***	-0.048***	-0.019		-0.002	-0.016	-0.005
		(0.013)	(0.013)	(0.012)		(0.013)	(0.012)	(0.012)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	3.664***	3.344***	3.543***	3.825***	3.178***	3.074***	3.290***	3.552***
	(0.008)	(0.046)	(0.047)	(0.036)	(0.023)	(0.039)	(0.045)	(0.037)
N	109,887	109,887	109,887	109,887	109,887	109,887	109,887	109,887

Notes. OLS regression results. Dependent variable: Log of hours worked at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 4: Hours Away per Week Regressions, Both Genders (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-3.274***	-3.409***	-2.667***	-2.445***	-2.562***	-2.611***	-2.313***	-2.191***
	(0.546)	(0.578)	(0.490)	(0.480)	(0.527)	(0.531)	(0.481)	(0.479)
Log Hourly Wage					2.689***	2.834***	1.693***	1.705***
					(0.111)	(0.139)	(0.135)	(0.126)
Female	0.514***	0.448***	0.967***	1.098***	0.925***	1.012***	1.278***	1.324***
	(0.100)	(0.101)	(0.081)	(0.076)	(0.094)	(0.095)	(0.083)	(0.075)
Age		0.369***	0.258***	0.241***		0.196***	0.170***	0.168***
		(0.037)	(0.036)	(0.036)		(0.040)	(0.038)	(0.038)
Age^2		-0.005***	-0.004***	-0.003***		-0.003***	-0.003***	-0.003***
		(0.000)	(0.000)	(0.000)		(0.001)	(0.001)	(0.001)
Less than High School		-0.026	0.228	0.280		0.350*	0.411*	0.389*
		(0.142)	(0.158)	(0.159)		(0.148)	(0.160)	(0.164)
Trade Certificate		0.803***	0.501***	0.468***		0.495***	0.374**	0.394***
		(0.144)	(0.129)	(0.122)		(0.134)	(0.123)	(0.120)
Community College		0.542**	0.133	0.084		0.063	-0.055	0.017
		(0.167)	(0.150)	(0.126)		(0.154)	(0.147)	(0.125)
University Certificate below Degree		1.245***	0.615**	0.431		0.473*	0.279	0.308
		(0.215)	(0.232)	(0.223)		(0.216)	(0.233)	(0.224)
Undergraduate Degree		0.749***	-0.022	-0.388*		-0.325	-0.502*	-0.546**
		(0.220)	(0.206)	(0.187)		(0.194)	(0.202)	(0.180)
Graduate Degree		0.664***	-0.288*	-0.794***		-0.756***	-0.930***	-1.040***
		(0.124)	(0.132)	(0.119)		(0.111)	(0.133)	(0.123)
Immigrated to Canada less than 2 years earlier		-2.451***	-1.963***	-1.813***		-1.624***	-1.562***	-1.547**
		(0.391)	(0.425)	(0.466)		(0.425)	(0.443)	(0.478)
Immigrated to Canada less than 5 years earlier		-3.000***	-2.423***	-2.225***		-2.020***	-1.936***	-1.897***
		(0.482)	(0.462)	(0.464)		(0.468)	(0.459)	(0.462)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	-9.367***	-16.555***	-16.216***	-15.808***	-17.100***	-20.575***	-18.677***	-19.720***
	(0.544)	(0.646)	(0.707)	(0.936)	(0.760)	(0.732)	(0.705)	(0.986)
N	530,796	530,796	530,796	530,796	530,796	530,796	530,796	530,796

Notes. Tobit regression results. Dependent variable: Hours away from work (part-time absence) in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

35

Table 5: Hours Away per Week Regressions, Less than 1 Year of Tenure, Both Genders (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-3.009***	-3.294***	-2.782***	-2.374***	-2.763***	-2.788***	-2.650***	-2.315***
	(0.670)	(0.661)	(0.609)	(0.697)	(0.671)	(0.637)	(0.602)	(0.703)
Log Hourly Wage					1.694***	2.268***	0.790*	0.487
					(0.327)	(0.295)	(0.309)	(0.316)
Female	-0.566**	-0.452**	0.828***	1.288***	-0.282	0.021	0.956***	1.343***
	(0.179)	(0.164)	(0.196)	(0.233)	(0.201)	(0.176)	(0.201)	(0.238)
Age		0.467***	0.352***	0.340***		0.343***	0.316***	0.322***
		(0.079)	(0.075)	(0.066)		(0.073)	(0.070)	(0.062)
Age^2		-0.007***	-0.006***	-0.006***		-0.006***	-0.005***	-0.005***
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
Less than High School		1.561***	1.590***	1.522***		1.739***	1.642***	1.540***
		(0.223)	(0.216)	(0.212)		(0.222)	(0.216)	(0.209)
Trade Certificate		0.865**	0.403	0.312		0.558*	0.329	0.281
		(0.269)	(0.283)	(0.282)		(0.274)	(0.291)	(0.291)
Community College		0.215	-0.010	0.103		-0.103	-0.081	0.084
		(0.216)	(0.224)	(0.220)		(0.215)	(0.225)	(0.220)
University Certificate below Degree		0.739	0.471	0.299		0.225	0.335	0.261
		(0.421)	(0.423)	(0.453)		(0.391)	(0.410)	(0.442)
Undergraduate Degree		-0.127	-0.565	-0.705		-0.851	-0.749	-0.745
		(0.578)	(0.587)	(0.498)		(0.548)	(0.573)	(0.496)
Graduate Degree		-0.429	-0.966*	-1.395***		-1.504***	-1.246**	-1.468***
		(0.422)	(0.473)	(0.387)		(0.416)	(0.481)	(0.396)
Immigrated to Canada less than 2 years earlier		-1.254**	-0.962*	-0.843		-0.682	-0.802	-0.781
		(0.458)	(0.437)	(0.460)		(0.479)	(0.453)	(0.472)
Immigrated to Canada less than 5 years earlier		-1.633***	-1.426***	-1.241***		-1.123**	-1.277***	-1.179***
		(0.391)	(0.384)	(0.360)		(0.389)	(0.377)	(0.353)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	-12.176***	-19.344***	-19.483***	-21.978***	-16.567***	-22.644***	-20.684***	-23.115***
	(0.955)	(1.504)	(2.087)	(2.130)	(1.350)	(1.697)	(2.243)	(2.364)
N	109,887	109,887	109,887	109,887	109,887	109,887	109,887	109,887

Notes. Tobit regression results. Dependent variable: Hours away from work (part-time absence) in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6: Continuations, Less than 1 Year of Tenure (LFS Two-Month Mini Panels)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	0.020**	0.012	0.019**	0.025**	0.030***	0.023***	0.029***	0.031***
	(0.006)	(0.006)	(0.006)	(0.008)	(0.006)	(0.007)	(0.007)	(0.008)
Log Hourly Wage					0.060***	0.045***	0.051***	0.040***
					(0.002)	(0.003)	(0.002)	(0.002)
Female	0.016***	0.010**	0.004	-0.005	0.027***	0.020***	0.012***	0.000
	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)
Age		0.008***	0.008***	0.006***		0.005***	0.005***	0.005***
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
Age^2		-0.001***	-0.001***	-0.000***		-0.000***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.034***	-0.028***	-0.020***		-0.030***	-0.025***	-0.018***
		(0.005)	(0.005)	(0.005)		(0.005)	(0.005)	(0.005)
Trade Certificate		0.008*	0.009*	0.004		0.001	0.004	0.001
		(0.004)	(0.004)	(0.004)		(0.004)	(0.004)	(0.004)
Community College		0.028***	0.023***	0.011**		0.021***	0.018***	0.009**
		(0.003)	(0.003)	(0.003)		(0.003)	(0.003)	(0.003)
University Certificate below Degree		0.019*	0.013	-0.002		0.009	0.005	-0.005
		(0.008)	(0.009)	(0.010)		(0.009)	(0.009)	(0.010)
Undergraduate Degree		0.034***	0.027***	0.007		0.019***	0.015***	0.003
		(0.003)	(0.004)	(0.004)		(0.003)	(0.004)	(0.004)
Graduate Degree		0.043***	0.034***	0.007		0.020**	0.014*	0.001
		(0.005)	(0.007)	(0.008)		(0.006)	(0.007)	(0.008)
Immigrated to Canada less than 2 years earlier		-0.004	-0.001	0.008		0.006	0.008	0.013
		(0.014)	(0.014)	(0.014)		(0.013)	(0.013)	(0.014)
Immigrated to Canada less than 5 years earlier		-0.015**	-0.013*	-0.004		-0.003	-0.002	0.001
		(0.005)	(0.006)	(0.006)		(0.006)	(0.006)	(0.006)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	0.909***	0.764***	0.688***	0.835***	0.753***	0.698***	0.610***	0.738***
	(0.005)	(0.017)	(0.022)	(0.019)	(0.007)	(0.018)	(0.022)	(0.021)
N	85,771	85,771	85,771	85,771	85,771	85,771	85,771	85,771

Notes. Linear Probability Model regression results. Dependent variable: Binary variable that equals one if the period t worker is with the same employer in period $t+1$, and zero otherwise. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 7: Quits, Less than 1 Year of Tenure (LFS Two-Month Mini Panels)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-0.001	0.000	-0.002	-0.003	-0.005	-0.004	-0.005	-0.005
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)
Log Hourly Wage					-0.022***	-0.017***	-0.015***	-0.015***
					(0.001)	(0.001)	(0.002)	(0.002)
Female	0.002*	0.003***	0.002**	0.003***	-0.002*	-0.000	-0.000	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age		-0.004***	-0.003***	-0.003***		-0.003***	-0.003***	-0.003***
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Age^2		0.000***	0.000***	0.000***		0.000***	0.000***	0.000***
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		0.004	0.003	0.002		0.002	0.002	0.001
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Trade Certificate		-0.007**	-0.006**	-0.005*		-0.004*	-0.004*	-0.004*
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Community College		-0.007***	-0.005***	-0.004**		-0.004***	-0.004**	-0.003**
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
University Certificate below Degree		-0.001	0.001	0.003		0.002	0.003	0.004
		(0.005)	(0.005)	(0.005)		(0.005)	(0.005)	(0.005)
Undergraduate Degree		-0.007**	-0.004	-0.001		-0.001	0.000	0.001
		(0.002)	(0.002)	(0.003)		(0.002)	(0.002)	(0.003)
Graduate Degree		-0.010***	-0.006***	-0.003		-0.002	-0.000	-0.001
		(0.001)	(0.001)	(0.002)		(0.002)	(0.002)	(0.002)
Immigrated to Canada less than 2 years earlier		-0.005	-0.007*	-0.009*		-0.009**	-0.010**	-0.010**
		(0.004)	(0.004)	(0.004)		(0.003)	(0.004)	(0.004)
Immigrated to Canada less than 5 years earlier		0.008**	0.007*	0.005		0.004	0.003	0.003
		(0.003)	(0.003)	(0.003)		(0.003)	(0.003)	(0.003)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	0.019***	0.090***	0.077***	0.049***	0.076***	0.115***	0.101***	0.085***
	(0.002)	(0.007)	(0.008)	(0.010)	(0.003)	(0.007)	(0.008)	(0.011)
N	85,771	85,771	85,771	85,771	85,771	85,771	85,771	85,771

Notes. Linear Probability Model regression results. Dependent variable: Binary variable that equals one if the period t worker is unemployed in period $t+1$ because of a quit, and zero otherwise. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 8: Layoffs, Less than 1 Year of Tenure (LFS Two-Month Mini Panels)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-0.014***	-0.010**	-0.012**	-0.017**	-0.017***	-0.013**	-0.017***	-0.018***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)
Log Hourly Wage					-0.019***	-0.013***	-0.021***	-0.014***
					(0.002)	(0.002)	(0.002)	(0.003)
Female	-0.014***	-0.011***	-0.005**	0.001	-0.017***	-0.014***	-0.008***	-0.001
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)
Age		-0.002**	-0.003**	-0.002**		-0.002*	-0.002*	-0.002*
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
Age^2		0.000***	0.000***	0.000***		0.000**	0.000**	0.000**
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		0.023***	0.020***	0.014***		0.021***	0.018***	0.014***
		(0.003)	(0.003)	(0.003)		(0.003)	(0.003)	(0.003)
Trade Certificate		-0.003	-0.005**	-0.002		-0.001	-0.003	-0.001
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Community College		-0.015***	-0.014***	-0.007*		-0.013***	-0.012***	-0.007*
		(0.002)	(0.003)	(0.003)		(0.002)	(0.003)	(0.003)
University Certificate below Degree		-0.006	-0.005	0.004		-0.003	-0.001	0.005
		(0.007)	(0.007)	(0.007)		(0.007)	(0.007)	(0.007)
Undergraduate Degree		-0.018***	-0.018***	-0.006**		-0.014***	-0.013***	-0.005*
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Graduate Degree		-0.021***	-0.021***	-0.005		-0.015**	-0.013*	-0.003
		(0.004)	(0.006)	(0.006)		(0.005)	(0.005)	(0.006)
Immigrated to Canada less than 2 years earlier		-0.001	-0.001	-0.007		-0.004	-0.005	-0.008
		(0.004)	(0.006)	(0.006)		(0.007)	(0.007)	(0.007)
Immigrated to Canada less than 5 years earlier		0.000	0.001	-0.004		-0.003	-0.003	-0.006**
		(0.003)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	0.040***	0.081***	0.155***	0.059*	0.089***	0.099***	0.187***	0.092**
	(0.004)	(0.016)	(0.023)	(0.028)	(0.008)	(0.018)	(0.023)	(0.028)
N	85,771	85,771	85,771	85,771	85,771	85,771	85,771	85,771

Notes. Linear Probability Model regression results. Dependent variable: Binary variable that equals one if the period t worker is unemployed in period $t+1$ because of a layoff, and zero otherwise. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 9: Log Real Wage in Main Job Reference Week Regressions, Both Genders (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)
Temporary Foreign Worker	-0.274***	-0.289***	-0.219***	-0.150***
	(0.017)	(0.024)	(0.016)	(0.009)
Female	-0.159***	-0.203***	-0.184***	-0.133***
	(0.009)	(0.010)	(0.007)	(0.004)
Age		0.061***	0.051***	0.042***
		(0.002)	(0.002)	(0.002)
Age^2		-0.001***	-0.001***	-0.000***
		(0.000)	(0.000)	(0.000)
Less than High School		-0.131***	-0.106***	-0.065***
		(0.006)	(0.005)	(0.004)
Trade Certificate		0.110***	0.074***	0.042***
		(0.012)	(0.010)	(0.005)
Community College		0.173***	0.114***	0.041***
		(0.006)	(0.006)	(0.004)
University Certificate below Degree		0.269***	0.194***	0.068***
		(0.014)	(0.014)	(0.008)
Undergraduate Degree		0.374***	0.277***	0.088***
		(0.014)	(0.014)	(0.010)
Graduate Degree		0.498***	0.373***	0.138***
		(0.014)	(0.015)	(0.013)
Immigrated to Canada less than 2 years earlier		-0.254***	-0.201***	-0.133***
		(0.030)	(0.022)	(0.018)
Immigrated to Canada less than 5 years earlier		-0.349***	-0.289***	-0.193***
		(0.010)	(0.010)	(0.009)
Industry Controls (19)	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes
Constant	2.874***	1.429***	1.475***	2.315***
	(0.007)	(0.040)	(0.044)	(0.033)
N	530,796	530,796	530,796	530,796

Notes. OLS regression results. Dependent variable: Log of real hourly wage at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 10: Log Real Wage in Main Job Reference Week Regressions, Less than 1 Year of Tenure, Both Genders (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)
Temporary Foreign Worker	-0.165***	-0.240***	-0.184***	-0.130***
	(0.020)	(0.020)	(0.016)	(0.011)
Female	-0.171***	-0.208***	-0.161***	-0.113***
	(0.014)	(0.013)	(0.008)	(0.005)
Age		0.054***	0.045***	0.037***
		(0.002)	(0.001)	(0.001)
Age^2		-0.001***	-0.001***	-0.000***
		(0.000)	(0.000)	(0.000)
Less than High School		-0.083***	-0.069***	-0.044***
		(0.005)	(0.005)	(0.003)
Trade Certificate		0.134***	0.089***	0.056***
		(0.013)	(0.011)	(0.008)
Community College		0.142***	0.089***	0.035***
		(0.010)	(0.009)	(0.007)
University Certificate below Degree		0.216***	0.160***	0.065***
		(0.017)	(0.016)	(0.011)
Undergraduate Degree		0.318***	0.229***	0.076***
		(0.011)	(0.011)	(0.07)
Graduate Degree		0.473***	0.349***	0.140***
		(0.013)	(0.012)	(0.009)
Immigrated to Canada less than 2 years earlier		-0.224***	-0.178***	-0.114***
		(0.024)	(0.017)	(0.012)
Immigrated to Canada less than 5 years earlier		-0.234***	-0.194***	-0.128***
		(0.009)	(0.008)	(0.006)
Industry Controls (19)	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes
Constant	2.602***	1.475***	1.556***	2.406***
	(0.007)	(0.027)	(0.037)	(0.052)
N	109,887	109,887	109,887	109,887

Notes. OLS regression results. Dependent variable: Log of real hourly wage at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

41

Table A2a: Log Hours per Week in Main Job Regressions, Males Only (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	0.003	0.004	0.010	0.024***	0.033***	0.032***	0.029***	0.034***
	(0.005)	(0.006)	(0.005)	(0.007)	(0.006)	(0.007)	(0.007)	(0.008)
Log Hourly Wage					0.122***	0.107***	0.099***	0.070***
					(0.004)	(0.006)	(0.004)	(0.004)
Age		0.023***	0.021***	0.015***		0.016***	0.015***	0.012***
		(0.001)	(0.001)	(0.001)		(0.002)	(0.001)	(0.001)
Age^2		-0.000***	-0.000***	-0.000***		-0.000***	-0.000***	-0.000**
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.002	-0.010**	-0.005		0.008*	-0.001	-0.001
		(0.004)	(0.003)	(0.003)		(0.004)	(0.003)	(0.003)
Trade Certificate		0.032***	0.024***	0.013***		0.018***	0.014***	0.009**
		(0.003)	(0.003)	(0.003)		(0.004)	(0.003)	(0.003)
Community College		0.014***	0.022***	0.011***		-0.003	0.011***	0.009***
		(0.003)	(0.003)	(0.003)		(0.003)	(0.002)	(0.003)
University Certificate below Degree		0.016***	0.032***	0.015***		-0.006	0.016***	0.012*
		(0.005)	(0.004)	(0.004)		(0.006)	(0.004)	(0.005)
Undergraduate Degree		0.021**	0.035***	0.015***		-0.014	0.011*	0.010*
		(0.007)	(0.005)	(0.004)		(0.008)	(0.005)	(0.004)
Graduate Degree		0.038***	0.061***	0.039***		-0.007	0.030***	0.022***
		(0.007)	(0.005)	(0.005)		(0.009)	(0.006)	(0.005)
Immigrated to Canada less than 2 years earlier		-0.025*	-0.022**	0.006		0.002	-0.002	0.004
		(0.010)	(0.008)	(0.007)		(0.007)	(0.007)	(0.007)
Immigrated to Canada less than 5 years earlier		-0.039***	-0.041***	-0.018**		-0.005	-0.014*	-0.005
		(0.006)	(0.006)	(0.006)		(0.006)	(0.006)	(0.006)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	3.674***	3.198***	3.356***	3.575***	3.323***	3.063***	3.229***	3.423***
	(0.004)	(0.030)	(0.030)	(0.026)	(0.012)	(0.024)	(0.027)	(0.025)
N	273,375	273,375	273,375	273,375	273,375	273,375	273,375	273,375

Notes. OLS regression results. Dependent variable: Log of hours worked at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A2b: Log Hours per Week in Main Job Regressions, Females Only (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	0.071***	0.068***	0.078***	0.123***	0.119***	0.116***	0.117***	0.140***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.017)	(0.018)	(0.017)	(0.017)
Log Hourly Wage					0.152***	0.150***	0.163***	0.107***
					(0.006)	(0.007)	(0.008)	(0.008)
Age		0.008***	0.004*	-0.002		0.000	-0.003	-0.005***
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Age^2		-0.000***	-0.000	-0.000		-0.000	0.000	0.000**
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.029***	-0.028***	-0.010*		-0.000	-0.006	-0.001
		(0.007)	(0.006)	(0.005)		(0.006)	(0.006)	(0.004)
Trade Certificate		0.010*	0.015***	0.010*		0.004	0.013**	0.009
		(0.004)	(0.004)	(0.005)		(0.005)	(0.004)	(0.005)
Community College		0.023***	0.030***	0.012***		-0.005*	0.012***	0.008***
		(0.002)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
University Certificate below Degree		0.060***	0.061***	0.026***		0.013*	0.026***	0.018***
		(0.006)	(0.006)	(0.005)		(0.005)	(0.005)	(0.005)
Undergraduate Degree		0.069**	0.077***	0.018***		0.007	0.029***	0.007
		(0.004)	(0.006)	(0.004)		(0.004)	(0.005)	(0.004)
Graduate Degree		0.104***	0.117***	0.039***		0.019*	0.049***	0.021***
		(0.008)	(0.009)	(0.007)		(0.007)	(0.007)	(0.007)
Immigrated to Canada less than 2 years earlier		0.002	0.010	0.045*		0.040*	0.041*	0.058**
		(0.019)	(0.020)	(0.018)		(0.017)	(0.019)	(0.017)
Immigrated to Canada less than 5 years earlier		-0.055***	-0.054***	-0.018		-0.000	-0.007	0.002
		(0.014)	(0.012)	(0.011)		(0.013)	(0.012)	(0.011)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	3.511***	3.315***	3.438***	3.739***	3.097**	3.103***	3.193***	3.488***
	(0.005)	(0.034)	(0.029)	(0.037)	(0.018)	(0.031)	(0.031)	(0.044)
N	257,421	257,421	257,421	257,421	257,421	257,421	257,421	257,421

Notes. OLS regression results. Dependent variable: Log of hours worked at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A3a: Log Hours per Week in Main Job Regressions, Less than 1 Year of Tenure, Males Only (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	0.027	0.017	0.025	0.040*	0.053**	0.053**	0.048*	0.053**
	(0.016)	(0.018)	(0.018)	(0.018)	(0.017)	(0.017)	(0.018)	(0.017)
Log Hourly Wage					0.179***	0.162***	0.133***	0.104***
					(0.008)	(0.010)	(0.008)	(0.007)
Age		0.024***	0.020***	0.015***		0.013***	0.013***	0.010***
		(0.002)	(0.003)	(0.003)		(0.003)	(0.003)	(0.003)
Age^2		-0.000***	-0.000***	-0.000***		-0.000***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.006	-0.014	-0.007		-0.004	-0.007	-0.004
		(0.010)	(0.009)	(0.010)		(0.009)	(0.009)	(0.009)
Trade Certificate		0.061***	0.043***	0.025***		0.035***	0.028***	0.018**
		(0.007)	(0.006)	(0.006)		(0.006)	(0.005)	(0.006)
Community College		0.021*	0.027**	0.014		0.002	0.016	0.011
		(0.009)	(0.009)	(0.009)		(0.009)	(0.009)	(0.009)
University Certificate below Degree		0.030*	0.040**	0.021		0.003	0.023	0.016
		(0.014)	(0.013)	(0.013)		(0.014)	(0.013)	(0.012)
Undergraduate Degree		0.032	0.045**	0.025		-0.011	0.018	0.019
		(0.017)	(0.015)	(0.013)		(0.017)	(0.015)	(0.013)
Graduate Degree		0.038***	0.062***	0.023*		-0.025*	0.024**	0.013
		(0.009)	(0.008)	(0.010)		(0.011)	(0.008)	(0.009)
Immigrated to Canada less than 2 years earlier		-0.022	-0.018	-0.001		0.016	0.008	0.012
		(0.012)	(0.011)	(0.011)		(0.010)	(0.011)	(0.010)
Immigrated to Canada less than 5 years earlier		-0.049***	-0.052***	-0.029		-0.012	-0.026	-0.015
		(0.013)	(0.014)	(0.015)		(0.015)	(0.014)	(0.015)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	3.665***	3.209***	3.384***	3.653***	3.199***	3.002***	3.203***	3.423***
	(0.007)	(0.041)	(0.052)	(0.041)	(0.025)	(0.035)	(0.052)	(0.043)
N	58,855	58,855	58,855	58,855	58,855	58,855	58,855	58,855

Notes. OLS regression results. Dependent variable: Log of hours worked at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A3b: Log Hours per Week in Main Job Regressions, Less than 1 Year of Tenure, Females Only (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	0.099**	0.080*	0.088*	0.124***	0.133***	0.127**	0.122**	0.138***
	(0.037)	(0.036)	(0.038)	(0.032)	(0.038)	(0.037)	(0.038)	(0.033)
Log Hourly Wage					0.188***	0.185***	0.182***	0.108***
					(0.008)	(0.010)	(0.010)	(0.012)
Age		0.009*	0.004	-0.003		0.001	-0.002	-0.005
		(0.004)	(0.003)	(0.003)		(0.004)	(0.003)	(0.003)
Age^2		-0.000***	-0.000	0.000		-0.000	-0.000	0.000
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.037**	-0.030**	-0.010		-0.011	-0.013	-0.004
		(0.012)	(0.010)	(0.010)		(0.012)	(0.010)	(0.009)
Trade Certificate		0.035***	0.029**	0.022*		0.026**	0.026**	0.020*
		(0.009)	(0.009)	(0.009)		(0.010)	(0.009)	(0.009)
Community College		0.053***	0.047***	0.024**		0.022**	0.031***	0.019*
		(0.008)	(0.009)	(0.009)		(0.007)	(0.008)	(0.008)
University Certificate below Degree		0.088***	0.086***	0.048*		0.040*	0.054**	0.039*
		(0.015)	(0.017)	(0.018)		(0.016)	(0.017)	(0.018)
Undergraduate Degree		0.085***	0.089***	0.022		0.020*	0.046***	0.012
		(0.010)	(0.012)	(0.011)		(0.008)	(0.010)	(0.010)
Graduate Degree		0.144***	0.156***	0.060***		0.043**	0.084***	0.040**
		(0.014)	(0.015)	(0.016)		(0.015)	(0.015)	(0.015)
Immigrated to Canada less than 2 years earlier		0.033	0.044	0.076*		0.070*	0.072*	0.086**
		(0.032)	(0.033)	(0.029)		(0.029)	(0.030)	(0.028)
Immigrated to Canada less than 5 years earlier		-0.037	-0.037*	-0.010		0.006	-0.004	0.002
		(0.020)	(0.019)	(0.018)		(0.019)	(0.018)	(0.018)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	3.454***	3.295***	3.553***	3.889***	2.996***	3.105***	3.258***	3.618***
	(0.009)	(0.059)	(0.052)	(0.079)	(0.024)	(0.055)	(0.046)	(0.069)
N	51,032	51,032	51,032	51,032	51,032	51,032	51,032	51,032

Notes. OLS regression results. Dependent variable: Log of hours worked at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

45

Table A4a: Hours Away per Week regressions, Males Only (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-3.504***	-3.590***	-2.910***	-2.818***	-3.022***	-3.040***	-2.701***	-2.649***
	(0.821)	(0.868)	(0.778)	(0.752)	(0.783)	(0.809)	(0.758)	(0.747)
Log Hourly Wage					2.098***	2.236***	1.147***	1.167***
					(0.103)	(0.160)	(0.158)	(0.180)
Age		0.319***	0.248***	0.253***		0.167**	0.178**	0.194***
		(0.055)	(0.054)	(0.053)		(0.060)	(0.059)	(0.057)
Age^2		-0.004***	-0.003***	-0.003***		-0.003**	-0.003***	-0.003***
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
Less than High School		0.297*	0.299	0.197		0.515***	0.404*	0.260
		(0.151)	(0.161)	(0.175)		(0.150)	(0.160)	(0.176)
Trade Certificate		1.010***	0.586***	0.475**		0.718***	0.475**	0.410**
		(0.168)	(0.160)	(0.149)		(0.168)	(0.160)	(0.147)
Community College		0.318*	-0.068	-0.079		-0.032	-0.200	-0.125
		(0.135)	(0.131)	(0.113)		(0.133)	(0.130)	(0.114)
University Certificate below Degree		0.372	-0.120	-0.261		-0.114	-0.312	-0.321
		(0.331)	(0.353)	(0.321)		(0.324)	(0.345)	(0.321)
Undergraduate Degree		0.672***	-0.053	-0.384		-0.071	-0.344	-0.474*
		(0.202)	(0.221)	(0.205)		(0.211)	(0.223)	(0.211)
Graduate Degree		0.171	-0.812**	-1.226***		-0.786*	-1.186***	-1.352***
		(0.299)	(0.312)	(0.278)		(0.310)	(0.317)	(0.285)
Immigrated to Canada less than 2 years earlier		-1.853***	-1.496***	-1.432***		-1.218**	-1.226**	-1.242**
		(0.399)	(0.408)	(0.432)		(0.411)	(0.415)	(0.435)
Immigrated to Canada less than 5 years earlier		-2.567**	-2.152**	-2.051*		-1.851*	-1.833*	-1.828*
		(0.800)	(0.819)	(0.803)		(0.821)	(0.832)	(0.817)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	-10.198***	-16.353***	-17.055***	-16.684***	-16.227***	-19.205***	-18.514***	-19.221***
	(0.769)	(1.102)	(1.219)	(1.420)	(0.866)	(1.089)	(1.167)	(1.454)
N	273,375	273,375	273,375	273,375	273,375	273,375	273,375	273,375

Notes. Tobit regression results. Dependent variable: Hours away from work (part-time absence) in the reference week. Tobit model. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A4b: Hours Away per Week regressions, Females Only (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-3.023***	-3.153***	-2.272***	-2.025***	-2.045***	-2.099***	-1.773***	-1.685***
	(0.523)	(0.535)	(0.471)	(0.477)	(0.507)	(0.518)	(0.478)	(0.481)
Log Hourly Wage					3.242***	3.361***	2.193***	2.265***
					(0.156)	(0.179)	(0.187)	(0.182)
Age		0.430***	0.270***	0.222***		0.252***	0.178***	0.144***
		(0.039)	(0.041)	(0.039)		(0.041)	(0.043)	(0.040)
Age^2		-0.005***	-0.004***	-0.003***		-0.004***	-0.003***	-0.002***
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
Less than High School		-0.620***	0.039	0.389*		0.049	0.347	0.569**
		(0.167)	(0.190)	(0.187)		(0.189)	(0.200)	(0.197)
Trade Certificate		0.367	0.293	0.442*		0.232	0.272	0.422*
		(0.222)	(0.194)	(0.177)		(0.200)	(0.186)	(0.173)
Community College		0.734**	0.327	0.230		0.124	0.100	0.148
		(0.241)	(0.204)	(0.192)		(0.222)	(0.203)	(0.190)
University Certificate below Degree		1.837***	1.094***	0.855***		0.778**	0.617*	0.664**
		(0.219)	(0.241)	(0.242)		(0.237)	(0.245)	(0.246)
Undergraduate Degree		0.838**	0.024	-0.410		-0.557*	-0.624**	-0.635*
		(0.281)	(0.246)	(0.281)		(0.229)	(0.239)	(0.267)
Graduate Degree		1.124***	0.128	-0.451*		-0.782***	-0.792***	-0.842***
		(0.191)	(0.208)	(0.196)		(0.190)	(0.209)	(0.210)
Immigrated to Canada less than 2 years earlier		-3.385***	-2.696**	-2.402**		-2.388**	-2.190*	-2.077**
		(0.873)	(0.881)	(0.895)		(0.898)	(0.890)	(0.899)
Immigrated to Canada less than 5 years earlier		-3.410***	-2.646***	-2.340***		-2.170**	-2.008**	-1.916**
		(0.712)	(0.677)	(0.659)		(0.685)	(0.672)	(0.655)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	-8.046***	-16.568***	-14.573***	-13.948***	-16.877***	-21.222***	-17.791***	-19.145***
	(0.385)	(0.630)	(1.024)	(1.396)	(0.688)	(0.744)	(0.996)	(1.450)
N	257,421	257,421	257,421	257,421	257,421	257,421	257,421	257,421

Notes. Tobit regression results. Dependent variable: Hours away from work (part-time absence) in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A5a: Hours Away per Week regressions, Less than 1 Year of Tenure, Males Only (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-3.959***	-3.942***	-3.402**	-3.061**	-3.793***	-3.503**	-3.333**	-3.043**
	(1.082)	(1.144)	(1.062)	(1.044)	(1.071)	(1.115)	(1.056)	(1.044)
Log Hourly Wage					1.348***	2.276***	0.484	0.162
					(0.313)	(0.314)	(0.300)	(0.329)
Age		0.370***	0.262**	0.265***		0.222**	0.235**	0.257***
		(0.084)	(0.083)	(0.074)		(0.079)	(0.080)	(0.071)
Age^2		-0.006***	-0.005***	-0.005***		-0.004***	-0.004***	-0.004***
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
Less than High School		1.628***	1.470***	1.229**		1.743***	1.495***	1.233**
		(0.405)	(0.399)	(0.381)		(0.406)	(0.399)	(0.380)
Trade Certificate		0.708*	0.069	0.040		0.341	0.012	0.028
		(0.288)	(0.326)	(0.357)		(0.310)	(0.335)	(0.365)
Community College		-0.252	-0.338	-0.033		-0.518	-0.381	-0.038
		(0.436)	(0.412)	(0.408)		(0.442)	(0.419)	(0.408)
University Certificate below Degree		-0.623	-0.786	-0.859		-1.035	-0.855	-0.867
		(0.599)	(0.571)	(0.556)		(0.616)	(0.589)	(0.558)
Undergraduate Degree		-1.150	-1.335	-1.292		-1.743*	-1.430	-1.300
		(0.829)	(0.843)	(0.783)		(0.822)	(0.844)	(0.780)
Graduate Degree		-1.435**	-1.758**	-1.984***		-2.325***	-1.903**	-2.001***
		(0.545)	(0.571)	(0.580)		(0.603)	(0.616)	(0.588)
Immigrated to Canada less than 2 years earlier		0.144	0.374	0.390		0.724	0.476	0.413
		(0.878)	(0.821)	(0.862)		(0.850)	(0.820)	(0.865)
Immigrated to Canada less than 5 years earlier		-0.774	-0.723	-0.547		-0.281	-0.629	-0.526
		(0.974)	(0.936)	(0.921)		(0.963)	(0.923)	(0.903)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	-14.141***	-19.407***	-19.938***	-22.382***	-17.616***	-22.254***	-20.575***	-22.739***
	(1.332)	(2.001)	(2.880)	(3.649)	(1.609)	(2.147)	(2.961)	(3.902)
N	58,855	58,855	58,855	58,855	58,855	58,855	58,855	58,855

Notes. Tobit regression results. Dependent variable: Hours away from work (part-time absence) in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

48

Table A5b: Hours Away per Week regressions, Less than 1 Year of Tenure, Females Only (LFS Incoming Rotation Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-1.945*	-2.473**	-1.983*	-1.511	-1.588	-1.925*	-1.771	-1.404
	(0.942)	(0.926)	(0.917)	(0.961)	(0.951)	(0.919)	(0.921)	(0.961)
Log Hourly Wage					2.147***	2.231***	1.178**	0.863*
					(0.401)	(0.350)	(0.433)	(0.385)
Age		0.592***	0.464***	0.455***		0.499***	0.426***	0.433***
		(0.121)	(0.118)	(0.104)		(0.113)	(0.110)	(0.100)
Age^2		-0.009***	-0.007***	-0.007***		-0.008***	-0.007***	-0.007***
		(0.002)	(0.002)	(0.001)		(0.002)	(0.002)	(0.001)
Less than High School		1.292**	1.634***	1.943***		1.600***	1.746***	1.995***
		(0.426)	(0.409)	(0.451)		(0.425)	(0.404)	(0.449)
Trade Certificate		0.935*	0.853	0.681		0.832	0.832	0.666
		(0.471)	(0.460)	(0.371)		(0.461)	(0.457)	(0.370)
Community College		0.720	0.410	0.342		0.360	0.307	0.306
		(0.427)	(0.414)	(0.391)		(0.437)	(0.427)	(0.395)
University Certificate below Degree		2.015**	1.616*	1.291		1.418	1.391	1.206
		(0.781)	(0.790)	(0.762)		(0.730)	(0.746)	(0.744)
Undergraduate Degree		0.784	0.123	-0.239		-0.021	-0.170	-0.324
		(0.492)	(0.506)	(0.457)		(0.457)	(0.495)	(0.460)
Graduate Degree		0.591	-0.229	-0.927		-0.631	-0.695	-1.085
		(0.598)	(0.629)	(0.552)		(0.556)	(0.600)	(0.555)
Immigrated to Canada less than 2 years earlier		-3.651**	-3.315**	-2.831*		-3.108*	-3.094*	-2.732*
		(1.311)	(1.245)	(1.239)		(1.348)	(1.270)	(1.246)
Immigrated to Canada less than 5 years earlier		-2.587***	-2.230***	-2.093***		-2.089**	-2.024**	-1.994**
		(0.635)	(0.615)	(0.599)		(0.674)	(0.654)	(0.614)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	-10.336***	-19.887***	-18.074***	-21.341***	-15.581***	-23.278***	-19.978***	-23.369***
	(0.754)	(2.053)	(2.206)	(4.825)	(1.299)	(2.260)	(2.513)	(4.861)
N	51,032	51,032	51,032	51,032	51,032	51,032	51,032	51,032

Notes. Tobit regression results. Dependent variable: Hours away from work (part-time absence) in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

49

Table A6: Log Real Wage in Main Job Reference Week Regressions, By Gender (LFS Incoming Rotation Sample)

	Men Only				Women Only			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-0.238***	-0.254***	-0.192***	-0.146***	-0.313***	-0.323***	-0.238***	-0.154***
	(0.029)	(0.037)	(0.028)	(0.019)	(0.020)	(0.017)	(0.010)	(0.009)
Age		0.069***	0.061***	0.050***		0.052***	0.041***	0.032***
		(0.003)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Age^2		-0.001***	-0.001***	-0.001***		-0.001***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.098***	-0.092***	-0.056***		-0.194***	-0.135***	-0.079***
		(0.005)	(0.004)	(0.004)		(0.007)	(0.007)	(0.005)
Trade Certificate		0.131***	0.093***	0.052***		0.043***	0.011	0.010**
		(0.011)	(0.010)	(0.006)		(0.009)	(0.006)	(0.003)
Community College		0.157***	0.114***	0.039***		0.189***	0.109***	0.039***
		(0.007)	(0.007)	(0.005)		(0.007)	(0.006)	(0.003)
University Certificate below Degree		0.211***	0.162***	0.048***		0.316***	0.215***	0.082***
		(0.012)	(0.014)	(0.007)		(0.017)	(0.016)	(0.010)
Undergraduate Degree		0.325***	0.246***	0.071***		0.413***	0.291***	0.095***
		(0.013)	(0.012)	(0.010)		(0.018)	(0.015)	(0.010)
Graduate Degree		0.423***	0.320***	0.102***		0.570***	0.417***	0.168***
		(0.015)	(0.017)	(0.015)		(0.015)	(0.014)	(0.011)
Immigrated to Canada less than 2 years earlier		-0.251***	-0.203***	-0.142***		-0.250***	-0.193***	-0.116***
		(0.039)	(0.027)	(0.022)		(0.020)	(0.019)	(0.016)
Immigrated to Canada less than 5 years earlier		-0.325***	-0.282***	-0.193***		-0.369***	-0.289***	-0.184***
		(0.015)	(0.014)	(0.012)		(0.009)	(0.006)	(0.005)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	2.870***	1.270***	1.283***	2.174***	2.720***	1.414***	1.504***	2.341***
	(0.006)	(0.045)	(0.049)	(0.035)	(0.008)	(0.034)	(0.040)	(0.057)
N	273,375	273,375	273,375	273,375	257,421	257,421	257,421	257,421

Notes. OLS regression results. Dependent variable: Log of real hourly wage at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A7: Log Real Wage in Main Job Reference Week Regressions, Less than 1 Year of Tenure, By Gender (LFS Incoming Rotation Sample)

	Men Only				Women Only			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporary Foreign Worker	-0.149***	-0.220***	-0.171***	-0.127***	-0.181***	-0.253***	-0.186***	-0.130***
	(0.030)	(0.029)	(0.026)	(0.018)	(0.021)	(0.015)	(0.010)	(0.006)
Age		0.064***	0.055***	0.046***		0.042***	0.032***	0.026***
		(0.003)	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Age^2		-0.001***	-0.001***	-0.001***		-0.001***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Less than High School		-0.058***	-0.057***	-0.033***		-0.137***	-0.094***	-0.062***
		(0.005)	(0.005)	(0.004)		(0.009)	(0.009)	(0.006)
Trade Certificate		0.161***	0.111***	0.068***		0.046***	0.018**	0.018**
		(0.014)	(0.013)	(0.009)		(0.010)	(0.006)	(0.006)
Community College		0.118***	0.086***	0.030***		0.164***	0.087***	0.039***
		(0.011)	(0.011)	(0.008)		(0.009)	(0.007)	(0.005)
University Certificate below Degree		0.164***	0.131***	0.040***		0.261***	0.177***	0.085***
		(0.025)	(0.025)	(0.015)		(0.018)	(0.016)	(0.015)
Undergraduate Degree		0.265***	0.199***	0.053***		0.355***	0.239***	0.088***
		(0.012)	(0.012)	(0.008)		(0.014)	(0.011)	(0.007)
Graduate Degree		0.387***	0.286***	0.093***		0.549***	0.396***	0.178***
		(0.016)	(0.016)	(0.010)		(0.013)	(0.014)	(0.010)
Immigrated to Canada less than 2 years earlier		-0.236***	-0.192***	-0.129***		-0.199***	-0.153***	-0.094***
		(0.029)	(0.016)	(0.014)		(0.026)	(0.027)	(0.018)
Immigrated to Canada less than 5 years earlier		-0.227***	-0.198***	-0.136***		-0.233***	-0.183***	-0.114***
		(0.011)	(0.011)	(0.010)		(0.014)	(0.011)	(0.011)
Industry Controls (19)	No	No	Yes	Yes	No	No	Yes	Yes
Occupation Controls (413)	No	No	No	Yes	No	No	No	Yes
Constant	2.600***	1.278***	1.355***	2.223***	2.437***	1.515***	1.618***	2.510***
	(0.010)	(0.046)	(0.043)	(0.059)	(0.010)	(0.043)	(0.045)	(0.127)
N	58,855	58,855	58,855	58,855	51,032	51,032	51,032	51,032

Notes. OLS regression results. Dependent variable: Log of real hourly wage at the main job in the reference week. All LFS regressions contain survey month, survey year, and CMA/CA/rural area dummies. Clustered standard errors at the CMA/CA/rural area level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

51