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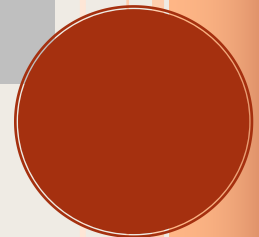
**The Work Trajectories of Married
Canadian Immigrant Women,
2006-2019**

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CLEF WP #47



The work trajectories of married Canadian immigrant women, 2006-2019

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Abstract. The behaviour of married immigrant women regarding fertility and labour markets is an essential piece to understand the economic and cultural integration of immigrant households. However, the contribution of married immigrant women to the Canadian labour market was – until recently – considered of secondary importance and their labour market choices studied within a framework of temporary attachment to the labor force. Recent research, however, finds that a significant fraction of married immigrant women make labor supply decisions (and face barriers) similar to those of native-born married women. We show that this is the case in Canada as well, by estimating the progress of immigrant women over the 2000s. We use traditional measures of labour market attachment, such as participation, employment and wages, but also novel measures of labour market dynamics, such as transitions across labour market states. Differences in transition rates can reveal higher fragility of work for immigrant women, or reveal the extent to which immigrant women respond to family income shocks – the *added worker* effect. Results show that immigrant women are less likely to transition into employment - more likely to transition out of employment to either unemployment or inactivity – and more likely to respond to income shocks than the Canadian born. There is evidence of a gradual convergence with years spent in Canada to the outcomes of the Canadian born, which is much slower for immigrant women than immigrant men.

1. Introduction

In OECD countries, one of the most important motives for migration is family – whether accompanying a spouse who is moving for economic reasons, or reuniting with extended family. Therefore, understanding the integration of immigrant families becomes essential to support and sustain immigration policies over time, and to direct and shape integration programs (OECD 2017). These studies are particularly important to immigrant-receiving countries, such as Canada, where family migration accounts for a large share of total migration.¹

Examination of immigrant women outcomes over the late 1990s and early 2000s reveals lower employment rates, lower average wages, and greater overqualification, relative to both Canadian-born women and immigrant men. Worse outcomes for immigrant women have been attributed to different preferences for paid work and cultural backgrounds that emphasize gendered roles in the family, affecting education decisions and labour force attachment. More recently, Schirle and Sogaolu, 2020; Adsera and Ferrer, 2014, 2016a suggest that immigrant women make, nevertheless remarkable progress with years since migration. This article seeks to update economic estimates of traditional measures of immigrant labour outcomes, such as participation, employment and wages, as well as to offer new evidence about the extent of the dynamics of their labour market integration by examining *transition rates* between labour force states, to show the work trajectories of married Canadian immigrant women over the 2000s.

The theoretical framework to understand the integration of the immigrant household begins with Mincer’s theory of migration (Mincer, 1978), which posits that couples move to increase the welfare of the household. The migration process is modelled as a household income maximization problem, which favours the partner with the greater market value of endowments in the destination country. Asymmetries in the distribution of skills within the household usually imply that the partner with fewer high-value skills is relegated to a secondary role in the labour market at destination. These spouses – overwhelmingly women– become “tied” immigrants and experience significant deterioration in their labour market outcomes after entry. This framework helps to explain the worse outcomes observed for dependent immigrants (Cookes, 2013; Banerjee and Phan, 2015; Krieger, 2020). Within the same framework, further insight into the sources of disparity in outcomes within immigrant families is provided by the Family Investment Hypothesis (FIH), which introduces the possibility of immigrant human capital depreciation upon arrival as a driver of strategic investments in skill upgrading within the household (Long, 1980). This mechanism generates a similar response: the household member with the lower value of endowments undertakes low skilled jobs to support the partner with the highest potential return to skill upgrading. Hence the prediction of the FIH is that although immigrant wives may work initially in low-skilled jobs, they will earn low wages, experience no career progress and

¹ In Canada, around 46% of Permanent Residents (PR) are spouses or dependents. The OECD average share of family migration in 2015 is 40%. (OECD 2017; Facts and Figures 2016, https://www.cic.gc.ca/opendata-onneesouvertes/data/Facts_and_Figures_2016_PR_EN.pdf)

eventually leave the labour force as their husbands acquire local human capital and improve their situation.

While earlier studies find some evidence of this behavior among immigrant women (Duleep and Sanders, 1993; Baker and Benjamin, 1997; Worswick, 1999), more recent studies in other countries do not (Duleep and Dowhan 2002; Blau et al. 2003; Blau and Khan 2007; Basilio et al. (2009); Adsera and Ferrer, 2016.a, 2014; Krieger, 2020). This discrepancy in results can potentially be explained by differences in the distribution of skills within the household. The predictions of the FIH do not follow if couples have similar levels of skills, as education raises the costs to forgo the wife's career at the expense of the husband's. Indeed, two distinct patterns regarding immigrant women's jobs can be observed with some immigrant women working "dead-end" jobs, but some engaging in career jobs. The former group tends to behave according to traditional patterns of female participation as described by the FIH. The latter, however, shows work trajectories similar to those of comparable native-born women (Kim and Varanasi, 2010; Blau et al. 2003) and link these departures from traditional patterns to higher levels of human capital observed for these immigrant women (Cobb, and Crossley, 2004; Adsera and Ferrer, 2016.a; Derby et al, 2020).

In Canada, specifically, differences in labor force outcomes of immigrant women, can be observed across "recent" and "former" cohorts as a result of the adjustment of the point-based entry system during the 1990s, which reduced the weight of the "intended occupation" category, and increased the weight of education and other human capital (Ferrer et al. 2014). The modification of the point system raised the average educational attainment of principal applicants through the 1990s and had a similar effect on the education of their spouses (Sweetman and Warman, 2010).² Hence, recent (married) immigrant women in Canada being better educated than previous immigrant cohorts are typically driven by stronger attachment to the labor force. Adsera and Ferrer (2016.a) highlight the different patterns of labour market outcomes for Canadian immigrant women for cohorts arriving after 1995, linked to their education.

The most extensively studied indicators of immigrant women's economic integration is their labour market participation. Adsera and Ferrer (2016.a) show that the average immigrant woman arriving in Canada during the first half of the 1990s is only 34 percent as likely to enter the labor market as her Canadian-born counterpart during her first 5 years in the country, but 72 percent as likely after being in Canada for 15-20 years.³ Employment rates are also a common descriptor of immigrant women's integration. Evidence in the years leading to the Pandemic

² Spouses of principal applicants are more likely to be employed than spouses arriving through family reunification. These differences can be traced back to differences in education and other individual characteristics (up to 40% of the difference) and differences in terms of the presence of young children or school attendance (about a third) (Bonikowska and Hou, 2017).

³ Half the differences in participation between Canadian-born and immigrant wives can be accounted for by socioeconomic characteristics, with gender participation ratios in the country of origin and current family size being key elements in accounting for said difference (Morissette and Galarneau, 2016).

suggest that immigrant women in general were increasingly employed even during the initial arrival years (Crossman et al., 2021).

Studies on the occupational progress of immigrant women are less common because of the inherent econometric problems accounting for selection into occupations. To use occupational classifications directly into the empirical models is either too broad or too narrow – and likely too rigid as well – to be useful. The recent development of the data tools such as the Occupational Information Network (O*NET) has greatly contributed to our understanding of occupational patterns and how they affect wages and participation. In the U.S., a few studies about the skill progression of immigrant women show that they are more likely to work dead-end jobs than are comparable native-born women. Immigrant women who start working in a dead-end job are also more likely to leave the labor force in the medium to long term (Kim and Varanasi, 2010). In Canada, Banerjee and Phan (2015) show significant employment barriers in the short run for highly educated professional women, particularly if they entered as dependent immigrants. In Europe, immigrant women to selected destinations show substantially lower analytical skills – and higher levels of strength skills – in the jobs they take, and experience diverse patterns of assimilation with time in the country (Adsera et al, 2020). In general, these differentiated patterns seem linked to human capital endowments. For instance, in Canada, where there is a relatively large influx of educated immigrant women, even though the average immigrant woman does not seem to experience much career progression over the long run - as measured by the skill content of their jobs - university educated immigrant women do (Adsera and Ferrer 2016).⁴

Beyond these measures, research into the *dynamics* of labour market outcomes of women - let alone immigrant women - is painfully scarce. This is despite the fact that looking into movements in and out of the labour force is far more important for marginal (to the labour market) populations, such as women or immigrants.⁵ These groups typically experience a higher rate of movement across different labour market states and understanding these patterns and why they come about is a necessary first step in addressing their needs and designing policies that have the desired impact.

In this article, we extend previous research on the labour outcomes of married immigrant women to Canada by updating conventional estimates of the labour force status of married immigrant women (from the mid 2000s to the beginning of the Pandemic) relative to the Canadian born. We account for standard socioeconomic characteristics as suggested by previous research. The main contribution, however, is highlighting new evidence about the extent of the dynamics of their labour market integration by examining *transition rates* between labour force states. Transition rates help us to understand and interpret changes in the (more commonly reported)

⁴ Results from a LPM show that immigrants are around 1.5% less likely - and immigrant women 7% less likely – to become managers 20 years after arrival than their Canadian-born counterparts. In future work we will address the occupational progress of immigrant women to Canada as an additional dimension along which measure their economic and labour market integration.

⁵ Other groups that benefit for looking into these movements are youth, senior citizens, single mothers and individuals with disabilities

levels or stocks of labour market indicators. Higher levels of transition out of employment for immigrant women than the Canadian-born for instance, could signal a more fragile attachment to the labour market for immigrants, even if the overall employment rates are similar for both groups. We are also interested in examining flows to inactivity from unemployment, which are relevant to address the possibility of immigrant women's limited term commitment to the labour force. Higher transition rates from unemployment to inactivity could, again, be indicative of the group's lower attachment to the labour market. Finally, we look the extent to which married immigrant women respond to family income shocks by examining transitions into employment that are linked to a partner's employment loss, the so called "*added worker*" effect. This is to our knowledge a novel dimension in the understanding of immigrant women's labour force integration.

Next section describes the data and empirical methodology, section 3 shows the results and section 4 concludes.

2. Data Description and Methodology

2.1. The Labour Force Survey

For this study, we use the Labour Force Survey (LFS) confidential microdata files, for the years 2006-2019. This is a large-scale monthly survey used by Statistics Canada to ensure accurate estimates of unemployment in various regions across the country. All members of the households in the LFS are followed for six months of the year and are asked to provide basic demographic information and details of their labour force activity. The confidential files are made available by Statistics Canada through the Canadian Research Data Centers Network.

Using the panel feature in the confidential LFS files, it is possible to follow individuals' labour force status from one month to the next and thus calculate their likelihood to change (or not change) labour market states, between employment, unemployment, and non-participation. We constructed a unique person identification relying on variables provided by the LFS for this purpose and use it to follow each individual entering the sample. Each month there is a new rotation group entering the survey that is followed for 6 months. The resulting panels overlap, but we keep track of all individuals' own time in the panel (first, second, third fourth, fifth or sixth month) to be able to select only one of the subject's responses when appropriate. One can also link individuals to other members of the household. This is relevant in the study of women's work, as it allows us to link women to their children and identify the age of the youngest child, a common marker for the cost of participating in the labour force.

We use the LFS from January 2006 (the first time information about immigration status and other relevant immigrant variables were reported in the LFS) to December 2019 to show the trajectories of Canadian immigrant women in the labour market pre-pandemic. The LFS reports immigrant status (permanent or temporary residents), year and age of arrival. Unfortunately, it does not include immigration visa information (identifying the reason for migration) and only limited information about immigrants' country of origin. The focus of our analysis is women who are married or living common law. We restrict the sample to individuals aged 25-59 (to circumvent

complications regarding school and retirement choices) and exclude temporary residents from the sample (as we cannot differentiate those who are and are not on a path to permanent residency).

2.2. Methodology

We begin by relating labour market outcomes to immigrant status for the period 2006-2019 using the following linear regression on pooled cross-sections of the LFS. We will focus on immigrant women's likelihood of being employed/unemployed/inactive (versus not) as it relates to the time they have been in the country and on wage progression (if employed) relative to the Canadian born.

$$Y_{it} = X_{it} \beta_1 + \beta_2 Imm + \sum_k^4 \beta_k ysm_k + \tau + m + Prov + \epsilon_{it} \quad (1)$$

where the dependent variable (Y_{it}) is the outcome of interest, such as hourly wages, or an indicator for the labour force status of women i at time t . The vector X_{it} contains standard demographic characteristics (a constant, age and age squared, education, and presence of young children and the prime-age male unemployment rate in the area to control for the business cycle). The variable Imm is an indicator for foreign born. The variable ysm_k denotes k indicators, one for each 5-year period of years since arriving in Canada, (0 to 5; 6 to 10; 11 to 15; 16 to 20). By construction, the coefficient β_2 corresponds to immigrants arriving more than 20 years ago, so that the coefficients β_k capture the effect of being a more recent immigrant. We include survey year (τ), month (m) and province ($Prov$) fixed effects, and ϵ_{it} represents the error term. Note that this specification estimates assimilation profiles as a spline (or step) function, rather than forcing a quadratic profile to labour market assimilation, which tends to overestimate the assimilation rate of recent arrival cohorts.

Estimating the labour market assimilation of immigrants in the host country requires disentangling the economic progress of a given cohort with time in the country from entry effects intrinsic to the composition of immigrants arriving any given year, which change depending on the international political and economic landscape at the time of migration and the host country's immigration policies. Having multiple cross sections allows to identify the average progress of immigrant cohorts distinctly from the entry effects by replacing the immigrant indicator with a series of indicators for different periods of arrival. However, the large number of parameters to be estimated and the limited sample of immigrants in the data renders these estimates imprecise at times. We report estimates with and without cohort effects and note that our reported estimates are a mixture of the cohort and entry effects (Borjas, 1985).

We then use the panel feature of the LFS to construct indicators for moving from labour force state L in month t to state J in month $t+1$. We focus on **(1)** job separations (transitions from *Employment* into (a) *Inactivity* or (b) *Unemployment*), **(2)** transitions from *Unemployment* into *Inactivity*, and **(3)** job finding (transitions from *Out of Employment* into *Employment*). Once indicators for transitions have been computed, we use the LFS to identify the differences in these

transitions for immigrant women relative to Canadian-born women, using the following linear probability model

$$LJ_{it} = X_{it} \beta_1 + \beta_2 Imm + \sum_{k=1}^4 \beta_k ysm_k + \tau + m + Prov + \epsilon_{it} \quad (2)$$

where LJ_{it} indicates the individual's transition from state L at month t to state J at month $t+1$. All other controls are as indicated above.

As mentioned earlier, the core of our estimates pertains to married women (including common-law partners), which is the focus of our analysis. We do show similar results for married men to highlight the gender differences.

Finally, we will use the same model to examine whether the attachment of women to the labour market is conditional to the labour market status of the spouse (“*added worker*” effect). We will focus on women's LFS transitions between the last two months in the panel, and regress these on an indicator variable for whether the spouse lost their job over the previous 4 months in the panel and its interaction with the immigrant dummies. By necessity, we have made the model more parsimonious, focusing only on recent immigrants (those arriving within ten years) and settled immigrants (those more than 10 years in Canada) due to small cell numbers. Additional controls for current labour force status of spouses and whether spouse lost their job between last period and the next are also included in this regression.

3. Progress of married immigrant women in the labour force.

We focus on comparing the labour force status, wages, and occupational progress of married immigrant women to that of Canadian-born women. Differences in labour force status tell us about differences in the labour force attachment of immigrant women and often sheds light on biases in the distribution of tasks within the household that reflect broader gender equity considerations in society. Differences in wages, on the other hand, focuses on systematic disparities in how markets may reward work activities differently for immigrant and Canadian-born women. Finally, our analysis of occupational progress captures some of the nonmonetary aspects of jobs undertaken by women and offers a (limited) dynamic perspective into the evolution of occupational choice.

Labor force status

Labor force participation rates are generally lower among immigrant men relative to their foreign-born counterparts, but these increase with time spent in most host countries. These trends provide substantial support for the standard model of human capital accumulation framing the economic analysis of immigrant integration, where immigrants gradually acquire local human capital (language, networks and other skills necessary to navigate the host country labour market) and improve their position in the labour market. As mentioned above, contrary to what was predicted by the FIH, patterns are similar for immigrant husbands and (at least some) immigrant wives. For instance, the average immigrant woman arriving in Canada during the first half of the 1990s is only 34 percent as likely to enter the labor market as her Canadian-born counterpart during her

first 5 years in the country, but 72 percent as likely after being in Canada for 15-20 years. This is in contrast with what was observed for earlier cohorts of immigrant women (Adsera and Ferrer, 2016.a).

Table 1 shows estimates for the labour force status (employed or unemployed) of immigrants relative to the Canadian born adjusted for demographic and human capital characteristics. These estimates are based on a sample of individuals in the confidential version of the Labour Force Survey (LFS) from 2006 to 2019, to include recent cohorts of immigrants. The coefficients in Table 1 correspond to a linear probability model (LPM, see equation 1) whereby the dependent variable is an indicator of labour force status (*Employed*, and *Unemployed*).⁶ The independent variables on immigration status and *years since migration* indicators account for immigrant progression and are the focus of this analysis. Additional controls account for age (quadratic), education (Non-university Post-secondary and University education), presence of children (indicators for children 0 to 5 and 6 to 17), other fixed effects (province, survey month and year) and prime-age male unemployment rate in the area in all regressions.

[TABLE 1]

Our results show significant progression in the employment probability of immigrant women with years in Canada. From being 29 percentage points less likely to be employed at arrival, to only 4 percentage points less likely than their Canadian-born counterparts, once they have spent 15 to 20 years in Canada (column 1). Similarly, the probability of being unemployed (column 3) goes down significantly with years in the country, from 6 percentage points higher chance of unemployment than the Canadian born at the time of arrival, to only 1 percentage point higher over 20 years. These results closely resemble the results for immigrant men (columns 5 and 7) although the initial gaps for new immigrants are somewhat smaller for men. We also report in the even columns the corresponding estimates when we include a full set of entry fixed effect to show that results are qualitatively similar when we consider the composition of the immigrant cohort. Entry effects on Employment (Unemployment) are decreasing (increasing) for successive cohorts, indicating that recent arrivals cohorts are less (more) likely to be employed (unemployed) than earlier cohorts. Assimilation rates into employment are slightly larger (from 18 percentage points lower at arrival to not significantly different from the Canadian born at 15 to 20 years in Canada. Note, however, that cohort effects have a more significant impact for women than men. This can be more easily seen in Figure 1, which shows the coefficients of the year since migration indicator without and with adjustment for cohort effects. The cohort fixed effect estimates indicate that it is recent cohorts of women that have suffered the most in terms of employment. There are no differences between the two sets of estimates for the effect of years since migration with and without entry effects in the chance of being unemployed.

[Figure 1]

⁶ Despite the obvious limitations of the LPM, it provides easily interpretable results, which are generally reasonable as long as the average probability of employment/unemployment is sufficiently away from 0 or 1, which is the case here.

Wages

The FIH predicts no significant wage advancement for immigrant women, because they intend their positions to be temporary or at most provide the household with a cushion for potential income-shocks. This prediction is at odds with results for recent cohorts of immigrant women whose wages rise substantially with years since migration, suggesting that at least some women pursue careers that involve substantial advancement over time.⁷ In Canada, studies using immigrants arriving up until 2006 find evidence of wage assimilation for immigrant women - wages rising more than 30% during the first ten years in Canada - but staying below those of similar Canadian-born women (Adsera and Ferrer, 2016).⁸

Table 2 shows wage differences between Canadian-born and immigrant workers adjusted by socioeconomic characteristics, corresponding to the coefficients of an OLS regression based on equation (1), where the dependent variable is the logarithmic of hourly wages. In column (I) we report results for the full sample and include demographic indicators for sex and immigration status. The next four columns split the sample into subsamples of men and women. Columns (III) and (V) show results when replacing the immigrant indicator by more detailed indicators of cohort of arrival to help further disentangle characteristics associated to a particular cohort from their process of assimilation. All regressions include the same controls as in table 1.

[TABLE 2]

The first column shows that the average immigrant experiences substantial wage progression during the first 20 years in Canada. From earning hourly wages that are approximately 35% less than the Canadian born upon during the first 5 years in Canada, the earnings gap closes to 11% after 16-20 years in Canada. The wage gaps are large, being more pronounced for women. Relative to Canadian-born men, immigrant men earn, on average, 11% less, whereas Canadian born women earn 22% less and immigrant women 31% less.

We next disaggregate results for men (column 2 and 3) and women (column 4 and 5). These show that immigrant wage assimilation (indicated by the coefficients that are smaller for higher years since migration) since 2006 remains similar – on average – to that reported in previous studies (Schirle and Sogaolu, 2020; Adsera and Ferrer, 2014, 2016a). It remains, nonetheless a persistent wage gap even for cohorts that have been in Canada for more than 20 years. Specifically, immigrant women earn on average 9% less than Canadian born women after 20 years. Their wage assimilation process is also somewhat slower than that of immigrant men (relative to Canadian-born workers of the same gender). These results are robust to considering entry effects. Adjusting

⁷ For the UK, a study by Dustman and Fabri (2005) point out significant wage disparities, particularly between immigrant women of colour and their British-born white counterparts.

⁸ Married immigrant women also earn substantially less than their spouses, particularly if arriving in the family class (Bonikowska and Hou, 2017).

by entry-cohort fixed effects - in columns (III) and (V)- results in “faster” assimilation profiles for both genders, who now reach parity within 20 years since migration.⁹ (Figure 2)

[FIGURE 2]

Labour Market dynamics

The rate at which individuals transition between labour market states is another important trend to consider. In this section, we calculate the probability that an individual moves between states in two consecutive months and assess the differences between immigrant and Canadian-born married women and men.

[FIGURE 3]

We show in figure 3 selected transition probabilities out of employment (i.e., transitions from *Employment* into *Inactivity*, transitions from *Employment* into *Unemployment*, transitions from *Unemployment* into *Inactivity*) and in figure 4 transitions into employment (i.e. from *Out of Employment* into *Employment*) for three groups of women: the Canadian born, recent immigrant women (arriving within 5 years) and settled immigrant women (arriving between 11 and 15 years prior), which allows us to examine any changes in the trends associated with time in the country. Similar graphs for men are also shown for comparison.

In figure 3, panel (a) shows transitions from employment into inactivity. These declined for the three groups between 2006 and 2019, a trend that is more accentuated for women than men and particularly for recent immigrant women, whose transition rates into inactivity declined by 50%. The transition rates from employment into inactivity of immigrant women who have spent between 11 and 15 years in Canada are lower than those of recent immigrants and much closer to those of Canadian-born women. In contrast, differences in transition rates for men are much smaller, and there are no clear differences between Canadian-born workers and settled immigrants. Panel (b) shows the rate of job separations into unemployment. Not surprisingly, the probability of moving from employment into unemployment is higher for recent immigrant than Canadian-born women, suggesting higher levels of precarious employment for the former. The trend, however, declines somewhat over the years, which could be linked to higher educational attainment of successive immigrant cohorts. Further, the difference between settled immigrant and Canadian-born women narrows, relative to that of recent immigrants indicating an improvement in the stability of their employment with time in the country. Panel (c) shows transitions from unemployment into inactivity, a measure that indicates a discouraged worker effect. Overall, these transitions are more prevalent among women than men and among recent immigrants than the Canadian born. However, the rates also decline for immigrants with years since migration, in support of immigrant women increasing their attachment to the labour market and their careers with time in the country.

⁹ Note that assimilation profiles of men and women immigrants are not directly comparable as they are relative to different reference groups.

Figure 4 shows transition rates into employment for the same groups, which are lower for immigrant women, regardless of time in the country. Transition rates into employment of immigrant men are very close to those of the Canadian-born.

[FIGURE 4]

Figures 3 and 4 show raw transition rates, unadjusted for other factors that may affect individuals' likelihood to change labour market states, such as business cycle and seasonality effects, provincial effects, and demographic characteristics like age, education or the presence of children. To understand the effect of time in Canada on transition rates between labour force states adjusted for these factors, we estimate equation (2) and report the results of the coefficients for years since migration in table 3.¹⁰ Differences in transitions rates between immigrant and the Canadian born that persist with time in Canada may be telling of systemic difficulties for immigrants to secure stable employment or to find jobs.

Overall, these estimates corroborate evidence of labour market progress among immigrant women with years in the country. As shown in Figure 3, transitions from employment to inactivity are larger for immigrants – around 2 percentage points higher transition rate, or double the rate of the Canadian born. After 10 years in Canada, the rates decline to less than half the transition rate of recent immigrants. The convergence of transition rates is faster for immigrant men, for which initial differences are smaller and similar progress is shown after only five years in Canada. The convergence of transition rates from employment to unemployment follow a similar process although the magnitudes are much smaller.

Transitions from unemployment into inactivity are significantly larger and do not converge to those of the Canadian born as fast as transitions from employment. They are initially ten percentage points higher during the first 5 years in Canada and cut only by half even after 15 to 20 years in Canada. Noticeably, while differences in transition rates for immigrant men and women (relative to their Canadian-born counterparts) are initially similar - around ten percentage points higher – those of immigrant men converge to Canadian-born levels after only 10 years in Canada.

Immigrant women also show lower transition rates from non-employment to employment, initially five percentage points below those of the Canadian born and convergence to native born levels is again much slower than that of immigrant men.

Finally, a further aspect that can add to our knowledge of the role of immigrant women in the labour market is their response to family income shocks. Since income support policies are designed to support families against income shocks, understanding how family members respond to this challenge adds an important dimension to the design of such policies. According to data from the Longitudinal Immigration Database (IMBD), spouses and dependents of economic

¹⁰ Estimates adding cohort effects are slightly smaller and less precisely estimates and are available upon request.

immigrants show the fastest growth in incidence of employment income during the initial ten years of migration, this suggests that their contribution to the household finances might be quite significant in terms of insuring against adverse income shocks that might be common during the initial years of settlement (Bonikowska and Hou, 2017). However, the extent to which immigrant women's commitment to work is informed by their spouses' labour market status has received little attention in the economics literature. We specifically examine whether immigrant women are more or less likely to enter employment in response to their spouses losing their job, the so called "*added worker*" effect. We use a LPM of transitions into employment conditional on a spouse's current labour force status and past job loss, showing the results in table 4. We consider only recent immigrants (those arriving within ten years) and settled immigrants (those more than 10 years in Canada) and its interaction with an indicator equal to one if the spouse has lost their job during the previous four months. Additional controls for current labour force status of spouses and whether spouse lost their job between last period and the next are also included in this regression.

As we see, the *added worker* effect for Canadian-born women is 2.8 percentage points higher the probability of entering employment, relative to those whose spouses did not lose their job over the previous months. A slightly smaller effect - 1.5 percentage points increase - exists for recent immigrant women relative to those whose spouse did not lose their job ($-0.018 - (-0.033) = 0.015$) perhaps pointing at the employment barriers that exist for recent immigrant women, impeding their speedy transition into jobs. This possibility is supported by the observation that the extent of the added worker effect for settled immigrant women is larger, regardless of whether measured against Canadian born women whose spouses did not lose their job - 3.6 percentage points higher, or measured against settled immigrant women whose spouses did not lose their job - 5 percentage points higher ($-0.036 - (-0.014) = 0.05$). This pattern suggests that immigrant women are in general, a potentially important source of income stability in response to family income shocks. It further adds to the evidence presented in this paper suggesting that immigrant women's attachment to the labour market increases with time in the country and that lower attachment during initial years of settlement is likely due to specific barriers to employment.

Discussion

Traditional theories of labour choice and family migration attribute the relative poor performance of married immigrant women to their lower earnings capacity as a result of the adoptions of traditional gender-roles within the family. Based on the same premises, the family investment hypothesis suggests that upon migration, immigrant women's attachment to the labour market is the result of the decision to support husband's investment in local human capital and it is therefore, temporary.

This paper documents the labour market outcomes of married immigrant women in Canada, relative to their Canadian-born counterparts. Immigrant women are initially less likely to be employed (and more likely to be unemployed), have lower wages, and are also less likely to transition into employment (more likely to transition out of employment to either unemployment or inactivity) than Canadian-born women. We also document a gradual convergence with years

spent in Canada to the outcomes of Canadian-born women, which is at odds with the predictions of the FIH.

The apparent lack of support for the predictions of the FIH model, particularly in recent research, is likely the result of changing household dynamics. The rise in immigrant women's education in Canada means that the assumptions of a lesser market value of women's skills than men's is unlikely to hold. Not only do immigrant women have higher levels of education than Canadian women, but their educational attainment is equal to that of immigrant men, a fact that has become more apparent among recent immigrant arrivals (Hudon, 2015). This likely accounts for the similarity between the trajectories of immigrant men and women - relative to their Canadian-born counterparts - with years since migration. It also encourages the consideration of assortative matching in the setting of immigration targets.

Nevertheless, convergence of women's outcomes occurs at a slower pace than that experienced by immigrant men, particularly in transition rates from unemployment to inactivity and transitions into employment. This suggests that immigrant women initially experience a more fragile attachment to the labour force and some form of barrier to entering employment, that eases over time spent in Canada. In this regard, recent studies suggest that expectations about gender roles become more salient after migration, fueled by income shocks associated with migration and lack of support networks to manage them (Phan et al. 2015). Our results fit with the findings in that paper. An initial shock to the distribution of roles and responsibilities within the household upon migration is overcome with the gradual investment in local skills and the development of local networks, which facilitate the gradual integration of women to the labour force at a slower pace than men.

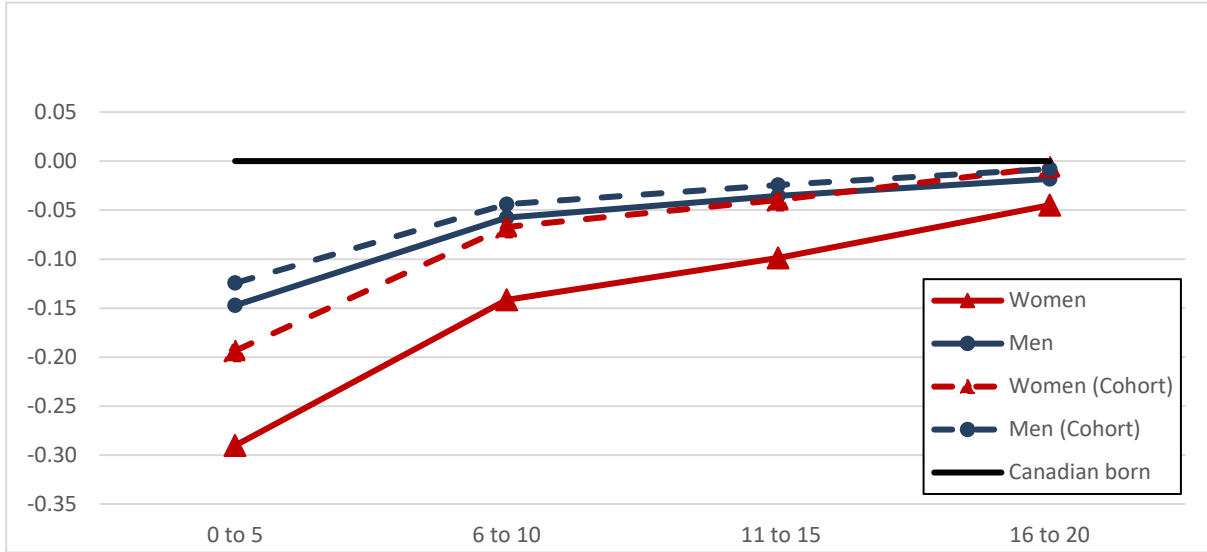
Recognizing the potential contribution of immigrant women to the labor force is instrumental in designing and implementing adequate immigration policies, as well as support policies for immigrants. Our results suggest that the contribution of immigrant women to the labour force is substantial, but it occurs slowly over time spent in Canada, particularly if compared with that of men. These differences are likely tied to barriers that immigrant women experience in acquiring local skills and networks. Training programs that increase the employability of recent immigrant women could work well addressing labour demand issues

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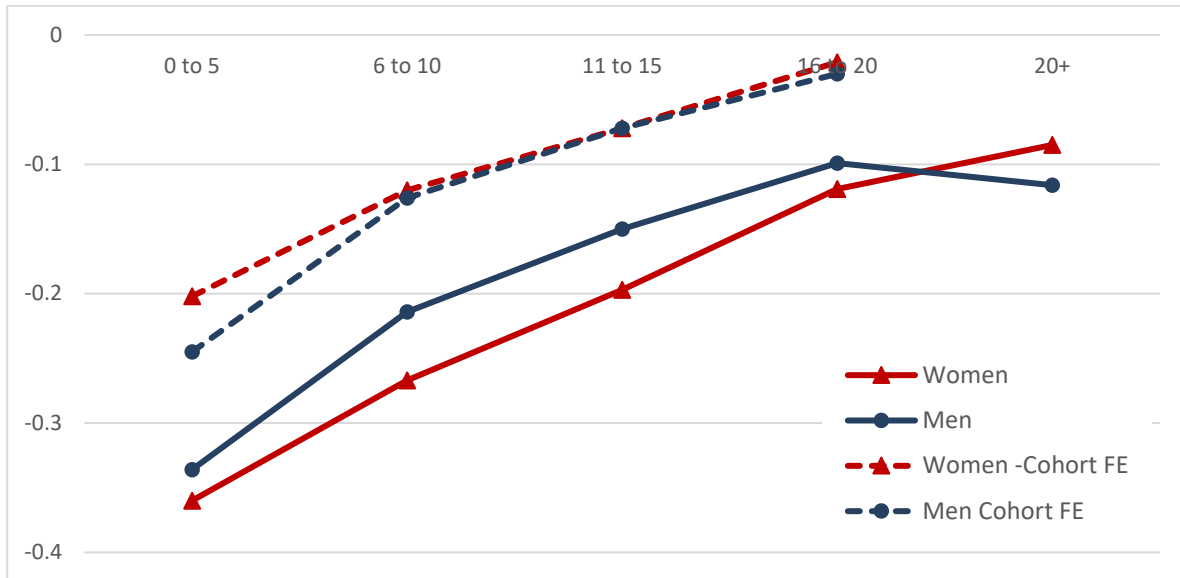
Figure 1. Probability of employment with time since migration



Source: Model results presented in Table 1 using LFS, 2006-2019, columns (I) and (III).

Note: Coefficients presented represent the difference in the portion of Canadian born men and women that are employed and the indicated group of immigrant men and women.

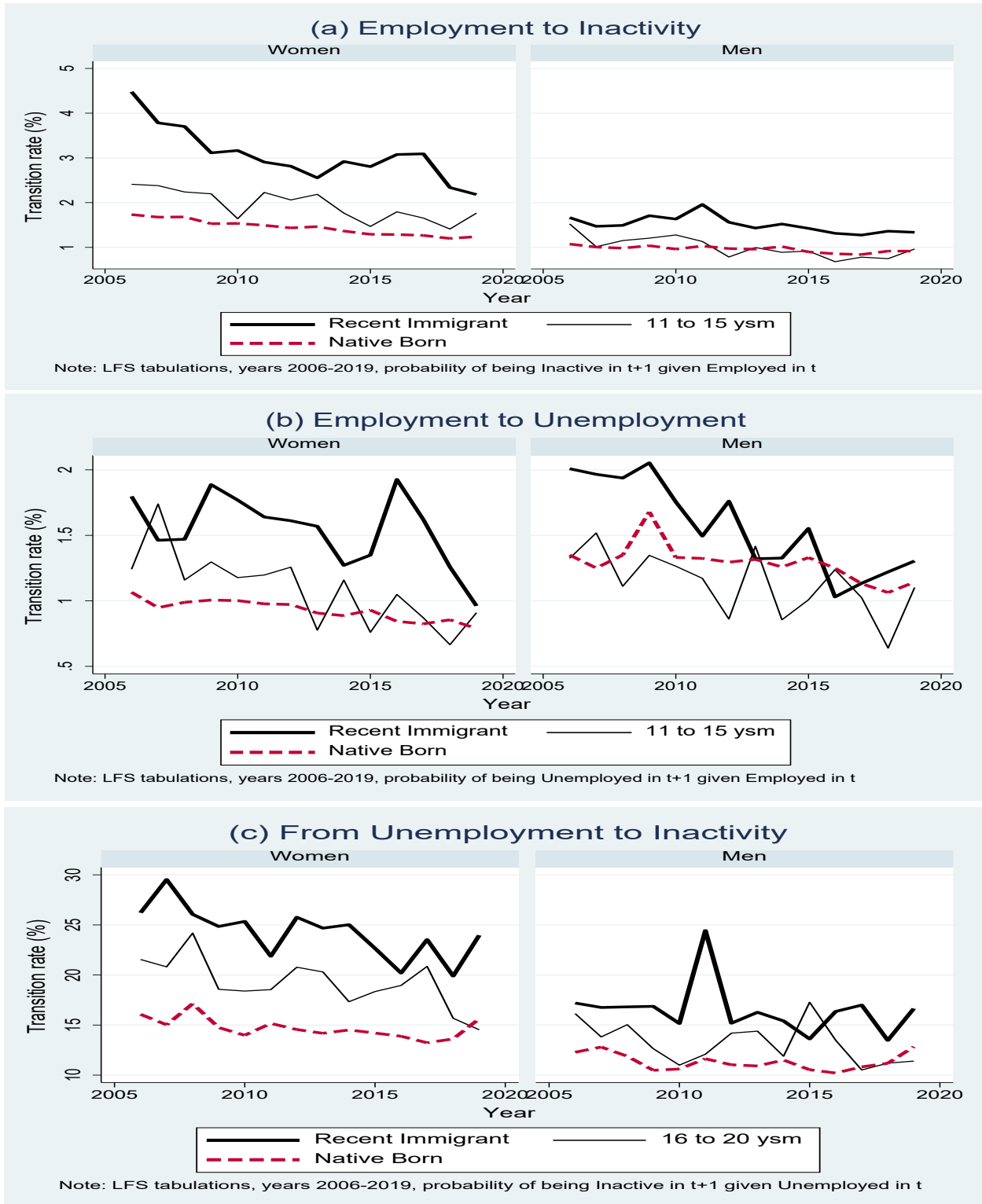
Figure 2. Immigrant wage progression with years since migration



Source: Estimates based on table 2 (LFS, 2006-2019), columns (II) through (V)

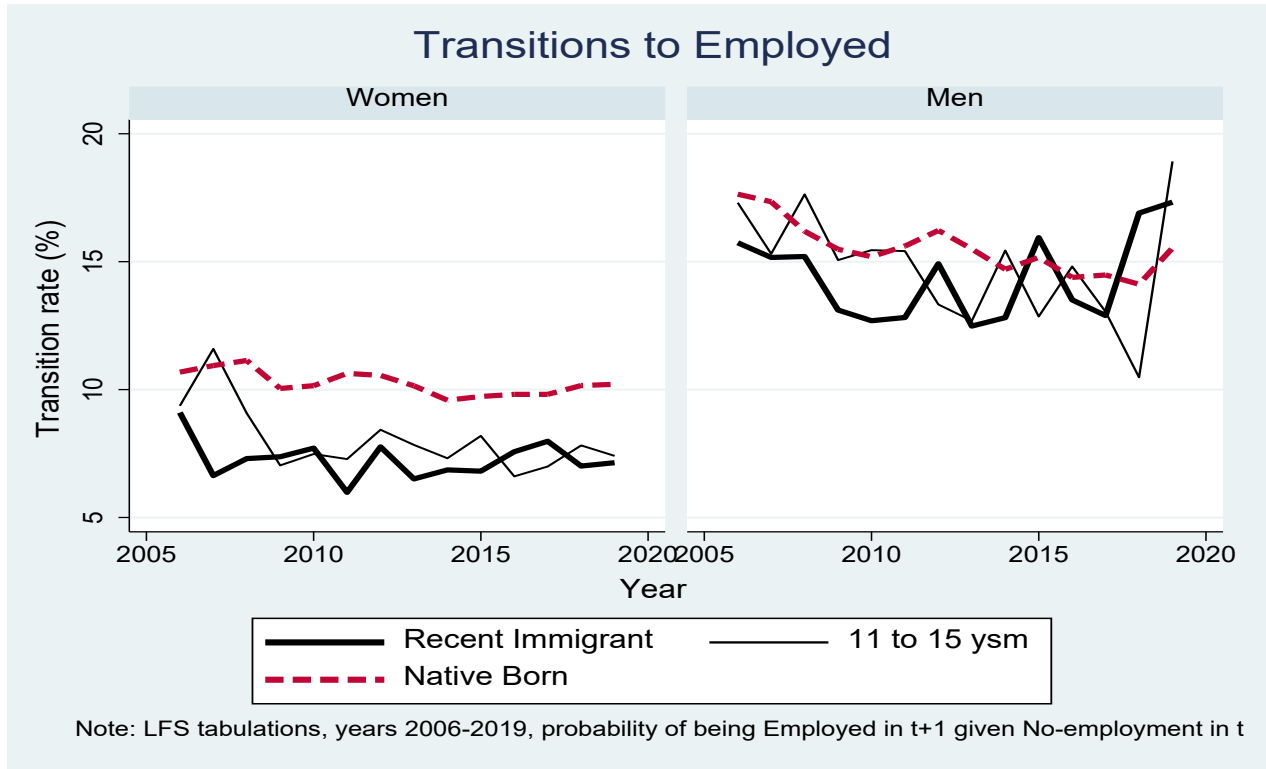
Note: Coefficients presented describe the difference in wages between Canadian born men and women and the indicated group of immigrant men and women.

Figure 3. Differences in job-separation rates by gender and immigrant status



Note: Probabilities scaled up to 100

Figure 4. Differences in transitions into Employment by gender and immigrant status



Note: Probabilities scaled up to 100

Table 1. Estimates of labour force status of immigrants relative to the Canadian born

	Women				Men			
	Employed		Unemployed		Employed		Unemployed	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Years since Migration (Rel. Canadian born)								
0 to 5	-0.29***	-0.19***	0.07***	0.05***	-0.15***	-0.13***	0.05***	0.06***
6 to 10	-0.14***	-0.07***	0.03***	0.02***	-0.06***	-0.04***	0.02***	0.02***
11 to 15	-0.10***	-0.04***	0.02***	0.02***	-0.04***	-0.02***	0.02***	0.02***
16 to 20	-0.05***	-0.01	0.01***	0.00	-0.02***	-0.01*	0.01***	0.01***
Immigrant (Rel. Canadian born)								
(More than 20 yrs)	-0.02***		0.01***		0.00**		0.01***	
Cohort Effects		Yes		Yes		Yes		Yes
Age, Education, Children	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Business Cycle	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Figures correspond to selected coefficients from a LPM of labour force status indicators as in equation (1). Additional controls account for age and age squared, education (Non-university Post-secondary and University education), presence of children (indicators for children 0 to 5 and 6 to 17) and other fixed effects (province, survey month and year, prime-age male unemployment rate in the area) and are included in all regressions.

Sample: Married men and women, 25 to 59 years old during their first rotation in the survey (LFS 2006-2019)

Table 2. Wage differences by gender and immigrant status

	All	Men		Women	
	(I)	(II)	(III)	(IV)	(V)
Years since Migration					
0 to 5	-0.35***	-0.34***	-0.25***	-0.36***	-0.20***
6 to 10	-0.24***	-0.21***	-0.13***	-0.27***	-0.12***
11 to 15	-0.18***	-0.15***	-0.07***	-0.20***	-0.07***
16 to 20	-0.11***	-0.10***	-0.03***	-0.12***	-0.02***
Demographic group	(NB men)	(NB men)		(NB women)	
NB women	-0.22***				
Immigrant Men	-0.11***	-0.12***			
Immigrant women	-0.31***			-0.09***	
Immigrant Cohort	--	--	Yes	--	Yes
Age, Education, Children	Yes	Yes	Yes	Yes	Yes
Business Cycle	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes

Figures correspond to selected coefficients from an OLS regression of ln(hourly wages) as in equation (1). Additional controls account for experience (age and age squared), education (Non-university Post-secondary and University education), presence of children (indicators for children 0 to 5 and 6 to 17) and other fixed effects (province, survey month and year, prime-age male unemployment rate in the area) and are included in all regressions.

Sample: Married men and women, 25 to 59 years old during their first rotation in the survey (LFS 2006-2019). First column uses a sample of all workers, columns 2 and 3 show results for a sample of men and columns 4 and 5 use a sample of women.

Table 3. Effect of immigration on transition rates by gender

	Women				Men			
	Job separations			Enter Empl.	Job separations			Enter Empl.
	E to I	E to U	U to I	Non-E to E	E to I	E to U	U to I	Non-E to E
Years since Migration								
0 to 5	0.020***	0.008***	0.096***	-0.056***	0.010***	0.005***	0.091***	-0.033***
6 to 10	0.020***	0.007***	0.055***	-0.029***	0.003***	0.005***	0.051***	-0.028***
11 to 15	0.006***	0.002*	0.039**	-0.027***	0.003**	0.003**	0	-0.005
16 to 20	0.005***	0.002*	0.051**	-0.018***	0.002*	0.001	-0.007	-0.013
Immigrant (more than 20)	0.003***	0.001	0.026**	0.004	0.001*	0.001	0.014	0.006
Age, Education, Children	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Business Cycle	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Figures show selected coefficients from a LPM of transition between labour force states. Additional controls account for experience (age and age squared), education (Non-university Post-secondary and University education), presence of children (indicators for children 0 to 5 and 6 to 17) and other fixed effects (province, survey month and year, prime-age male unemployment rate in the area) and are included in all regressions.

Sample: Married men and women, 25 to 59 years old during their first rotation in the survey (LFS 2006-2019)

Table 4. Labour force status of women conditional to spousal labour force status

	Women
	Non-E to E
Immigrant status	
Native born (NB)	(Reference)
NB*Spouse lost job ⁺	0.028***
Recent immigrant (RI)	-0.033***
RI*Spouse lost job ⁺	-0.018*
Settled immigrant (SE)	-0.014***
SE*Spouse lost job ⁺	0.036***
Spouse current LFS and transition	
Age, Education, Children	Yes
Business Cycle	Yes
Fixed Effects (prov, syear smonth)	Yes

Figures show selected coefficients from a LPM of transition between labour force states. Other controls include whether the spouse currently works or whether spouse lost their job between last and current period. Controls accounting for experience (age and age squared), education (Non-university Post-secondary and University education), presence of children (indicators for children 0 to 5 and 6 to 17) and other fixed effects (province, survey month and year, prime-age male unemployment rate in the area) are included in all regressions.

⁺ Refers to the spouse having lost their job during either of the 4 months previously to the respondent being surveyed

Sample: Married men and women, 25 to 59 years old during their last rotation in the survey (LFS 2006-2019)