The effect of the presence of children on the labour market performance of Canadian-born and immigrant women

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Abstract

I study the labour market performance of Canadian-born and immigrant women in Canada in relation to the presence of children of different ages. Labour market performance is measured in terms of three outcomes: labour force participation, employment status, and wages. I exploit data from the 2011 National Household Survey (NHS). Linear regression models are estimated to capture the effect of the presence of children and of other control variables. The main finding is that having children does have a significantly negative effect on the labour market performance of both native-born and immigrant women. Women who have children are less likely to participate in the labour force and to be employed, and they receive lower wages than those who do not have children. Moreover, bearing younger children has a much larger effect than bearing older children. Furthermore, the negative effect of having children seems to be slightly deeper for immigrants from Asia, Africa and America than for Canadian-born women and immigrant women from other parts of the world.

1. Introduction

The rising role of women in the labour market is now well established all over the world. Increased labour force participation, higher employment, and rising wages have made today's women more confident in their value in the labour market. However, women are still traditionally considered as being responsible to undertake comparatively more household responsibilities related to raising children than men. Raising children entails not only child care responsibilities, but also a lot of monetary, energy and time costs. Consequently, women with children are likely to be relatively less active in the labour market and less productive in their jobs than the childless women.

Table 1 below shows the employment rate of women with children by age of the youngest child, from 1976 to 2009, in Canada. The employment rate of women in all the groups increased continuously since 1976, but it is worth noticing that women who have younger children have lower employment rate. However, the gap between women with children and without children seems to gradually decrease over the time.

Table1: The employment rate of women with children by age of the youngest child

Year	Youngest child less 3	Youngest child aged 3 to 5	Youngest child less than 6	Youngest child aged 6 to 15	Youngest child less than 16	Women under 55 with no children at home
	Employment rate (percentage)					
1976	27.6	36.8	31.4	46.4	39.1	60.9
1981	39.3	46.7	42.1	56.2	49.3	66.0
1986	49.4	54.5	51.4	61.9	56.7	69.3
1991	54.4	60.1	56.5	69.0	62.8	72.6
1996	57.8	60.5	58.9	69.8	64.5	72.4

2001	61.3	67.0	63.7	75.3	70.1	76.8
2006	64.3	69.4	66.4	78.2	72.9	79.9
2007	65.1	72.6	68.1	79.4	74.3	80.9
2008	64.6	70.3	66.8	80.0	73.8	81.2
2009	64.4	69.7	66.5	78.5	72.9	80.4

Source: Statistics Canada (2011), Table 5.5, using data from the Labour Force Survey.

Over the last decades, immigrants in Canada have played an increasingly important role in the labour market. It is worthy to measure the differences in labour market outcomes between Canadian-born and immigrant women and to analyze how the effects of motherhood status on labour market performance differ between native-born and immigrants in Canada.

In this paper, I exploit data from the 2011 National Household Survey (NHS) of Canada to study the labour market performance of Canadian-born and immigrant women in Canada and the differences in the effect of having children on that performance. The labour market outcomes are measured in terms of labour force participation, employment status and wages. A first sample that includes all the women is used for the analysis of women's labour force participation and employment status; a second sample is restricted to women who received positive wages. Three linear regression models are constructed to estimate the relationships between women's labour force performance and the presence of children, controlling for other variables.

From my results, I find that having children does have a significantly negative effect on the labour market performance of women. Moreover, bearing younger children has much larger effect than bearing older children for both Canadian-born and immigrant women. Women who have children are less likely to be in the labour force and to be employed than those without children; those results are consistent with the previous findings on this topic. Furthermore, the negative effects of having children seem to be slightly deeper for immigrants from Asia, Africa and America than for the Canadian-born women. When it comes to women who have wages, I

find that both native-born and immigrant women suffer wage penalty for having children. The motherhood penalty of having pre-school children is relatively larger for native-born women than for immigrant women from Asia, the US and Europe, but the penalty of having old children is slightly higher for immigrant women from Asia, the US and Europe than that for Canadian-born women.

My paper is organized as follows. Section 2 provides a literature review that includes recent studies on the topics of labour market performance of women and how having children affect that performance. Section 3 describes the dataset, the sample restrictions and presents the summary statistics. Section 4 provides the econometric model. Section 5 presents the results from the econometric model. The conclusion is presented in Section 6.

2. Literature Review

The topic of the performance of women in the labour market has been studied by many researchers over the world. The role of women in the society has evolved gradually during the last several decades. Specifically, many studies have explored the differences in labour market outcomes (labour force participation, employment rate and so on) between native-born and immigrant women. Some studies have also focused on the changes in immigrant women's wages and in the wage gap between native-born and immigrant workers. In addition, the effect of children and family composition on women's labour supply and the motherhood penalty were also hot topics in recent years. Many studies have compared the motherhood penalty faced by women in different countries. In this section, I summarize some findings related to the labour

market performance of immigrant women and to the effect of children on women's labour market.

2.1 Literature on the labour market performance of immigrant women

Wong and Hirschman (1983) studied the ethnic stratification of socioeconomic roles in the U.S. of Anglo women and Asian-American women, separately for the Japanese, the Chinese, and the Filipina women. Specifically, the analysis focused on labour force participation and earnings based on the data from the 1970 US Censure of Population. First, they find that Asian women tend to be more educated than Anglo women. Asian-American women are also more likely to participate in the labour force than Anglo women. Moreover, women from the Philippines tend to be the most active in the labour market among the three groups. Furthermore, for employed women, yearly wages of Asian women were approximately $1000 higher than those of Anglo women. The advantage of Asian women in terms of wages can be explained by their higher levels of education and their stronger propensity to work fulltime.

Using data from the 1973 Canadian Mobility Study, Boyd (1984) analyzed the occupational statuses of immigrant women in Canada in comparison to those of native-born women and of immigrant and native-born men. The results show that immigrant women experience a double disadvantage, receiving lower earnings than both the native-born women and the immigrant and native-born men. Immigrant women's occupational statuses are below not only those of Canadian-born women but also those of their immigrant male counterparts. The reason of this phenomenon is attributed to the lower experience and lack of skills of immigrant women. However, there are sizable differences in the double disadvantages between immigrant women

by birthplaces, women from United States and United Kingdom tending to have lower disadvantages than their counterparts from other countries.

Beach and Worswick (1993) further examined the extent to which immigrant women earn less due to the combined negative impact of gender and birthplace, using the data from the 1973 Job Mobility Survey (the same as the data used by Boyd, 1984). Their sample consisted of 5249 working women aged 25-64 in 1972. From the basic regression model for native-born and foreign-born women, they first find that the effects of education and experience on earnings are positive as expected, but that the returns to education and experience are much lower for immigrant women than for native-born women. Second, the greater amount of time out of the labour market makes women less likely to find a job, and this negative effect hardly differs between immigrant and native-born women. The results also show that the effect of children is significantly negative, as expected, for both immigrant and native-born women. In addition, immigrant women, on average, have fewer children and slightly higher earnings than non-immigrant women. The main finding is that there is a considerable negative double effect on women's earnings, but not for all the immigrant women, only for the highly educated foreign-born women. In addition, the initial gap in earnings between immigrant women and Canadian-born women is not expected to be reduced over the worker's career path, which means the earning gaps of immigrants are much more lasting for women than for men.

More recently, Adserà and Ferrer (2014a) examined the labour market behaviour of immigrant women using data from the 1991 to 2006 Canadian Censuses. The sample consists of married women aged between 18 to 45 years. Immigrant women seem to be relatively older and more likely to attain a high level of education than native-born women. However, Canadian-born women seem to participate more in the labour market than immigrant women. With regard to the

regression model, Adserà and Ferrer measured the labour market performance of women in two ways: labour force participation and wages. From their results, it is reasonable to show that all immigrant women tend to participate less than the native-born women at arrival, but that the gap gradually closes with the years spent in Canada. In addition, the labour market behaviour of immigrant women seems to be not consistent with the description of secondary workers' behavior; it shows convergence to that of immigrant men. Only for the low-educated immigrant women who work in relatively low-skilled occupations, the theory of those women as secondary workers is true.

Adserà and Ferrer (2014b) further studied whether female immigrants in Canada are secondary workers using the same data from Canadian Census from 1991 to 2006 as their earlier study. The sample consists of over 800,000 women. There are three main findings in their studies. First, the behaviour of immigrant women in the labour market is becoming similar to that of immigrant men over time. Second, the share of immigrant women in low-skilled jobs is much larger than that of native-born women. Third, the highly educated immigrant women tend to integrate into the native labour market, and their wages are increasing steadily with years in Canada, leading up to 80 percent wage assimilation with native-born women after about two decades since immigration.

Based on earlier studies on the immigrant women, Ferrer (2015) summarizes several key findings from the literature. First, recent studies show that immigrant women's contribution to the labour market has become more important than before, and that they are no longer secondary workers. Their choice to work is mainly determined by their own career goals rather than by their family responsibilities. Their labour force participation and wages both increase steadily over the years in the receiving-country. The evidence from Canada shows that there is still a

wage gap between immigrant and Canadian-born women, even though the wage of immigrant women has increased steadily during the last 20 years. Another interesting finding for Canada is that the share of highly educated immigrant women who work in low-skill occupations is quite larger than that of native-born women.

2.2 Literature on the effect of children on women's labour market performance

Based on the 1980 U.S. Census, Stier and Tienda (1992) analyzed the labour supply of Hispanic immigrant wives and compared it with the labour supply of native-born wives. The empirical results indicate that women's role as mothers does influence their labour market behaviour; in addition, Hispanic immigrant wives are more constrained by their motherhood status than native-born white wives. Immigrant women consider their earning potential ability and language ability as the most important factors in the decision to enter the labour force, which means that the decision is influenced by their education level and also the spouse's wages. Regarding the effect of children, the authors point out that the presence of preschool children has a significant negative effect on the labour supply of native-born women, but this motherhood effect is not as strong for Mexican and other Hispanic women.

Another research related to the motherhood penalty in the United State was carried out by Waldfogel (1998). Based on data from 1980 and 1991 National Longitudinal Survey of Youth, Waldfogel first finds that marriage has a positive impact on wages of both women and men, but that it is stronger for men. Second, the effect of having children yields different effects on men's and women's wages. It has no effect on the wages of men and even tends to increase wages, but it considerably decreases women's wages. Furthermore, the wage gap between women with no children and women with children seems to be larger in 1991 than in 1980. Waldfogel suggests

some reasons for the existence of the motherhood wage penalty. One possibility is that wage differentials between women with no children and women with children reflect unobserved heterogeneity; for example, mothers are considered to spend more time in family and to be less devoted in the labour market than childless women. Apart from that, Waldfogel hypotheses that some employers in the labour market would discriminate against women who have children, but there is lack of research to support that view. The last suggestion is the lack of access to job-protected maternity leaves and childcare policies for mothers in the labour market. Consequently, Waldfogel recommends that governments implement positive policies supporting women with children, such as maternity leave, childcare and flexible work hours, such that to stimulate female activeness in the labour market.

Cohen and Blanchi (1999) examine the labour market performance for all women and of married women in the U.S. using data from the March Current Population Survey (SPC) between 1978 and 1998. After comparing changes in the estimates of full time paid work for all women, they find that women's attachment to the labour market has increased steadily since 1978, particularly for the married women with children. This trend can be explained by two competing arguments: women are facing more working opportunities due to a higher average level of education, or they are experiencing constraints such that lower male earnings force them to participate in the labour market to compensate for their husbands' misfortunes and support their families. The results show that both married and single mothers work fewer hours than unmarried women without children, but that the gap between them has narrowed gradually during those two decades. Moreover, the reason that makes women's involvement to the labour market higher is thought to be the greater education levels. The results also show that the effect of other income on women's involvement in market work declined by almost half between 1978

and 1998, which means that the increase in women's attachment to work is mainly in response to more earning opportunities. With regard to children, they find that women experience the pressure from having children, which leads to a negative impact on labour supply, especially for those mothers who have children under 6 years old.

Anderson, Binder, and Krause (2002) not only study the effect of children on women's wages, but also examine how the motherhood wage penalty varies with different levels of education. Their study is based on the data from 1968-1988 National Longitudinal Survey of Young Women, which allows presenting both OLS and fixed effects results. After imposing restrictions, the final sample contained 2769 white women. From the OLS model, they find that for the whole sample, the average wages are estimated to be respectively 16 percent lower and 29 percent lower for having one child and for having more than one child, compared to being childless. Furthermore, motherhood wage penalties also vary with education levels. Women with higher education tend to suffer larger motherhood wage penalty, while those whose education level is lower than high school do not experience any motherhood penalty. Finally, the paper shows that the low-skilled workers do not suffer child penalties when they become mothers, but that the high-skilled workers do.

A Canadian study focused on the effect of timing of family formation on women's wages was carried by Drolet (2002). Two samples were drawn from the data from the 1988 Survey of Labour and Income Dynamics (SLID). One sample consists of all women who were employed in 1998. The other sample consists of women who were employed in both January 1997 and December 1998. The results from the cross-sectional analysis with the first sample show that marital status and motherhood status seem to have no impact on older women's wages, but that marriage tends to increase wages of the most recent cohort of women (born after 1960) and that

women who just gave birth tend to have lower wages. The fixed effects model based on the second sample of women who were persistent workers in both January 1997 and December 1998 shows that marriage leads to approximately 6.3 percent higher wages of women, which may result from a potential misspecification because of the short duration between 1997 and 1998. Apart from that, Drolet proposed that women who give birth relatively late earn, on average, 6 percent more than those who have their children early. This positive effect of delayed childbearing is estimated to last a few years, but finally it becomes weaker over time.

A study involving the differences in motherhood wage penalties between various races in the US is presented by Glauber (2007). Based on the data from the 1982 to 2004 waves of the National Longitudinal Survey of Youth (NLSY), the sample consisted of 5929 women in three different races: White, African American, and Hispanic. First, they find that the motherhood wage penalty only appears for women with more than one child. Women tend to suffer a more serious motherhood penalty for having a larger number of children. In addition, the Whites, African Americans and Hispanics are estimated to face different levels of wage penalty for being mothers. The wages of the African American and the Hispanic women seem to be less negatively affected by the presence of children than those of White women. For the Hispanic women, no matter how many children they have, being mothers does not lower their wages at all. However, married White women seem to earn lower wages for having children regardless of the number of children that they have. In contrast, the wage penalty for the married African American mothers only appears if they have more than two children. Those findings provide evidence that women of various races face different levels of motherhood wage penalties.

In general, the studies have shown that native-born women do relatively better in the labour market than immigrant women, in terms of labour force participation, employment rate and wages. Although immigrant women seem to assimilate into the local labour market with years in the host country, Beach and Worswick (1993) and Ferrer (2015) both stated that the gap in earnings between immigrant women and native-born women in Canada would not be completely eliminated. Regarding the effect of children, the studies presented above showed that the presence of children has a negative effect on the labour supply and wages of women. However, there are not many Canadian studies on the role of children on women's labour performance. In my study, I will look into this issue to find out whether Canadian mothers experience a prejudicial treatment in the labour market for having children. In addition, I will compare the differences in motherhood effects among immigrant women from different places of birth.

3. Data

In this paper, I use cross sectional data drawn from the 2011 National Household Survey (NHS) of Canada. The NHS provides essential information regarding the social, demographic and economic characteristics of people living in Canada.

My objective is to study the labour market performance of Canadian-born and immigrant women in Canada, and more specifically the differences in the effect of having children. Labour market performance is measured in three ways: labour force participation, employment status, and wages. Since I use three outcomes to measure labour market performance, I need different samples to analyze my topic. A first sample is used for the analysis of labour force participation and employment status, and a second sample is used for the analysis of wages. My population of

interest is all non-immigrant and immigrant women aged 25-54 in Canada. I restrict the sample first to female workers and second to those who are aged between 25 and 54. Third, I exclude non-permanent resident women. The first restriction is due to my objective to study only females. The reason for the second restriction is that this group is at a working age and is likely to have a family with children; people who are under 25 years old are probably still at school and people who over 55 years old most likely live without children. The third restriction is because the number of non-permanent residents is quite small in the survey and that they are not my population of interest. Apart from this, there are other restrictions for the two samples. For the first sample, I include all women aged from 25 to 55, which means that the employed, the unemployed and those out of the labour force are all included. For the second sample, I only keep people who had wages in 2010. Obviously, the second sample size is smaller than the first one. With regard to the wages, I drop those individuals whose wages are lower than $1,000 and higher than $200,000 in order to eliminate outliers.

The 2011 NHS total public use microdata sample contains 887,012 observations. After imposing all those restrictions, there are 189,161 observations in my first restricted sample and 138,623 observations in my second restricted sample.

3.1 Dependent variables

As mentioned before, the labour force performances of women are measured by three dimensions: labour force participation, employment status and wages. Note that labour force participation and employment status are both dummy variables. If the individual is in the labour force, then the variable for labour force participation equals 1, and otherwise it equals 0. Similarly, if the individual is currently employed, then employment equals 1, and otherwise it

equals 0. The last dependent variable is the natural logarithm of women's annual wages. The first dependent variable reflects how actively Canadian-born and immigrant women participate in the labour market. The second dependent variable captures their active involvement in the labour market. The third dependent variable tells us how much Canadian-born and immigrant women are paid in the labour market.

3.2 Independent variables

Regarding the independent variables, I include demographic variables (presence of children, marital status, other family income and age), immigration variables (immigrant status, place of birth and years since immigration), human capital (level of education), mother tongue, location of study and other control variables. Table 2 shows the definitions of all the variables.

First, my purpose is to study the effect of having children on women's labour market outcomes and to examine whether and how the effect of children differs between Canadian-born and immigrant women. I suppose that there is a difference in labour market performances between mothers and the childless women for both the native-born and the immigrants. Regarding the independent variables related to children, I suspect that the ages of the children influence the labour market outcomes. Infants under 5 years old can barely do anything without supervision. Taking care of an infant is much more time-consuming and exhausting than taking care of an older child. So I generate three indicators to distinguish the effects of the age of the children: "children under 5" is a dummy variable to identify whether a woman has any child under 5 years old; "children 6-14" is a dummy variable to identify whether a woman has any child between 6 to 14 years old; "children over 15" is a dummy variable to identify whether a woman has any child over 15 years old. These three dummies do not sum up to one, because women can have several children in more than one group. The reference group is women with no

children. The younger the child, the more time and energy should be paid by the mother; as a result, it reduces the amount of time women can spend on the labour market, which may lead to a negative impact on labour market performances.

When it comes to women's labour market outcomes, other family income is another important factor. The "other family income" is calculated by subtracting the woman's wages from the total family income. The woman's wage can be derived from the dataset directly and the total family income is estimated by taking midpoints of each category of the census family income. Based on earlier studies, the variable "other family income" is expected to be negatively correlated with women's labour force participation and employment status. For example, if their husbands are highly paid or if they have other benefits, women can afford to spend less time on the labour market.

I classify the marital status into two categories: "married" and "not married". The married category includes those who are legally married and those living common law. The not married category includes never legally married, separated, divorced and widowed.

In order to analyze the differences in labour force performance between Canadian-born and immigrant women, I generate an indicator variable "immigrant" to identify whether a woman is an immigrant or not.

I also generate another independent variable for "place of birth", which I initially divide into four groups: Canadian-born, United States and Europe, Asia, and Africa and America (other than the US). A finer division of places of birth will be used later for additional analysis with the following six categories: US, UK, China, India, Africa, and South America, which are chosen from those three aggregated areas for female immigrants.

A small number of people who were born outside of Canada but claim to be non-immigrants are dropped from my sample. Similarly, those people who were born in Canada but are not Canadian citizens by birth are dropped. In addition, "years since immigration" is another variable that might explain the labour market performance of immigrants. The longer an immigrant has lived in Canada, the better she will adapt to the new culture and integrate into the local society. So the variable "years since immigration" is expected to be positively related to immigrants' labour market performance.

The level of education is the most important human capital characteristic. In the NHS 2011 dataset, initially there are 13 categories of highest level of education, which I classify into five groups: no degree, high school, college, bachelor, and graduate.

The other control variables include mother tongue, province of residence, location of study, full-time work and number of weeks worked in 2010. For the mother tongue variable, which refers to the language first learned in childhood and still understood by the individual, two dummy variables are generated: "English or French" and "neither". "English or French" is defined to be 1 if the individual's mother tongue is English or French, and it is equal to zero otherwise. The value of "neither" is defined similarly. "English or French" and "neither" are mutually exclusive and I set "English or French" as the reference group. For the province of residence, I divide the initial categories into 6 groups: Quebec, Ontario, Alberta, British Columbia, Manitoba and Saskatchewan, and Atlantic (which consists of Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick and Northern Canada together, since they are quite small groups).

Location of study could be a factor influencing immigrant women's labour force performance. So I generate a dummy variable to identify whether or not the individual obtained a

postsecondary certificate, diploma or degree within Canada. It is equal to 1 if the individual obtained such a degree in Canada, and equal to 0 if the individual's level of education is lower than the postsecondary degree or the individual received a post-secondary degree outside of Canada. I expect people who studied in Canada to have more labour market opportunities than those who studied outside Canada.

For the analysis of women's wages, the number of weeks worked in 2010 and full-time status are added to the other independent variables. The value of the number of weeks that worked in 2010 is estimated at the midpoint of each category in the NHS and the full-time status is a dummy variable which is equal to 1 if the individual worked mainly full-time in 2010 and equal to 0 if she worked mainly part-time.

Table 2: Definition of the independent variables

Independent variables	**Description**
Presence of children:	Three dummy variables are generated to identify whether a woman has any children under 5, between 6-14 or over 15. These three dummies do not sum up to one, because women can have several children in more than one group. Reference group: no children
Marital status:	Married (reference group) and not married. Married includes legally married and living common law. The not married category includes never legally married, separated, divorced and widowed.
Other family income	Subtracting the woman's wages from the census family total income (measured in $1000), which is estimated by taking midpoints of each category of the census family income
Age	Age of each individual estimated at the midpoint of each 5-year category
Immigrant status	Immigrant and non-immigrant
Place of birth:	
Canada	Born in Canada (reference group)
US & Europe	Born in US or Europe (United Kingdom, Germany, Poland, Italy, Portugal and other parts of Europe)

Asia	Born in China, the Philippines, India, Pakistan and other parts of Asia
Africa, America and others	Born in Eastern Africa, Northern Africa, Other Africa, Central America, Jamaica, Other Caribbean and Bermuda, South America, and Oceania and others
Years since immigration	The number of years since immigration is calculated by the formula of 2011 minus the year of immigration, for which the year before 1990 are presented in categories, so I estimated by taking midpoints for those categories.
Level of education:	
No degree	No certificate, diploma, or degree
High school (Reference group)	High school diploma or equivalent
College	Trades certificate or diploma (or other than apprenticeship) College, CEGEP or other non-university certificate or diploma
Bachelor	Bachelor's degree
Graduate	Master's degree, earned doctorate degree, or degree in medicine, dentistry, veterinary medicine or optometry
Location of study	A dummy variable that identifies whether the individual attained a postsecondary certificate, diploma or degree within Canada.
Mother tongue:	
English or French (Reference group)	The individual's mother tongue is English or French
Neither English nor French	The individual's mother tongue is neither English nor French
Working status:	
Full-time or part-time	The value of full-time is equal to 1 if the individual worked full-time in 2010 and equal to 0 if she worked part-time.
Number of weeks worked in 2010	Number of weeks that worked in 2010 is estimated at the midpoint of each category in NHS
Province of residence*:*	Ontario (reference group), Quebec, Alberta, British Columbia, Manitoba and Saskatchewan, and Atlantic (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick and Northern Canada)

3.3 Summary Statistics

3.3.1 Summary statistics for all women

For my first sample, I compare the participation rate, employment rate, and other variables between women who have children and those who do not have children for all the women, the Canadian-born group and the immigrant group. As we can observe in table 3, there is an obvious difference in labour force participation between the mothers and the childless women. In the whole sample, the labour force participation rate of women who have children is 78.9%, while the one of childless women is 5.3 percentage point higher at 84.2%. For the Canadian-born group, the labour force participation rate of mothers is 3.7 percentage point lower than that of childless women. However, for the immigrants, the difference in labour force participation is high at 8.2 percentage points. Immigrant mothers' labour force participation rate is only 73.1%, compared to 81.3% for the non-immigrants. In addition, the Canadian-born women participate more in the labour market than the immigrant women, no matter whether they are mothers or not. Regarding to the comparison of employment rates, we can see that childless women have higher rates than women with children for all the groups. For the Canadian-born group, the difference in employment rate between mothers and childless women is small, at 3.3 percentage points. For the immigrant women, the mothers' employment rate is only 67.4%, which is a huge 8.5 percentage point lower than that of immigrant childless women. In addition, it is noticeable that a small gap in employment rate between Canadian-born and immigrant women exists. Even the Canadian-born mothers actually have a higher employment rate than immigrant childless women.

Regarding to other variables, there is little difference in the presence of children under 5 and children between 6 to 14 between Canadian-born and immigrant mothers. However, immigrant mothers have a slightly higher proportion with older children. As for the marital status, 25.9% of Canadian-born mothers are not married and the corresponding percentage for immigrant mothers is lower, at 20.2%.

As for the education level, the percentage having a bachelor's or a graduate's degree is higher among immigrant women than among their Canadian-born counterparts. Most Canadian-born women (70% of them) do not have a bachelor's degree or a graduate's degree.

The language variables show that more than 94% of the Canadian-born women speak English or French as their mother tongue, but the percentage for the immigrant women is only 24.2% for mothers and 31.6% for childless women.

With regard to the other family income, women who have children have almost twice as much other family income as women who do not have any children; this is true for both the Canadian-born and the immigrant groups. Canadian-born mothers have about 69300 dollars of other family income while immigrant mothers only have 59800 dollars, the difference being 9500 dollars. For women who do not have children, the difference in other family income between Canadian-born and immigrant women is smaller, at 4100 dollars.

Table 3: Summary statistics of Canadian-born and immigrant women.

Variables	**Whole sample**		**Canadian-born**		**Immigrants**	
	Childless	**Mother**	**Childless**	**Mother**	**Childless**	**Mother**
Labour force participation rate (%)	84.2%	78.9%	84.9%	81.2%	81.3%	73.1%
Employment rate (%)	80.3%	74.9%	81.3%	78.0%	75.9%	67.4%
Presence of children:						
Under 5		.301		.305		.292
6 to 14		.446		.442		.456
Over 15		.500		.492		.520
Marital status:						
Married	.586	.757	.581	.741	.608	.798
No married	.414	.243	.419	.259	.392	.202
Education:						
No degree	.100	.097	.105	.092	.080	.109

High school	.218	.222	.227	.229	.176	.204
College	.372	.395	.384	.422	.320	.328
Bachelor	.209	.193	.197	.181	.258	.223
Graduates	.101	.093	.087	.075	.166	.137
Mother tongue:						
English or French	.844	.743	.964	.944	.316	.242
Neither English nor French	.156	.257	.036	.056	.684	.758
Other income:						
Other family income (in thousand)	35.730	66.564	36.486	69.272	32.394	59.849
Observation	63,355	125,806	51,104	88,477	12,251	37,329

Note: All means are weighted.

Table 4 provides the means of the variables for immigrant women by different places of birth. The gaps in labour force participation between childless women and mothers are 4.1, 9.9 and 7.4 percentage points respectively for immigrants from the US and Europe, Asia, and Africa and America. Immigrant women from the US and Europe have the highest labour force participation rate among all the three immigrant groups. There are 83.6% of US and Europe childless women who participate in the labour market. In contrast, immigrant women from Asia participate the least. Only about 69.7% of Asian mothers are in the labour force.

In terms of the employment rate, we can observe that the gaps between childless women and mothers for those three groups of immigrants are 3.6, 10.6 and 7.1 percentage points respectively. The US and Europe group still shows the highest percentage being employed. Among childless women, immigrants from Africa and America show the lowest employment rate, at 72.5%. But for women who have children, immigrants from Asia have the lowest employment rate, at 63.9%.

As for the presence of children, mothers from Africa and America tend to have more young children but US and European mothers tend to have older children. In addition, 29.5% of

mothers from Africa and America are single, while only 16.7% of Asian mothers and 16.8% of US and Europe mothers are single.

Immigrant women from Asia show the largest percentage that obtained bachelor's or graduate degrees. Immigrant women from Africa and America show the lowest percentages. It is worth noticing that 16.9% of US and Europe childless women and 16.5% of mothers from the same countries obtained graduate degrees; those proportions do not differ significantly from those of their Asian counterparts.

In terms of the mother tongue, almost half of US and Europe women speak English or French as mother tongue, and around 40% of women from Africa and America have English or French as mother tongue. The comparable percentages for Asian women are much lower:13% and 9.7% for childless women and mothers respectively.

Comparing the other family income between these three groups, the amounts for mothers are almost double the ones for childless women in all three groups of immigrants. Besides, women from the US and Europe have the highest amount of other family income among all immigrant women. Those from Africa and America have the lowest amount.

Table 4: Summary statistics of immigrant women by different places of birth.

Variables	**US and Europe**		**Asia**		**Africa and America**	
	Childless	**Mother**	**Childless**	**Mother**	**Childless**	**Mother**
Labour force participation rate	83.6%	79.5%	79.6%	69.7%	80.1%	72.7%
Employment rate	79.1%	75.5%	74.5%	63.9%	72.5%	65.4%
Presence of Children:						
Under 5		.240		.294		.340
6 to 14		.421		.459		.483
Over 15		.557		.518		.493

Marital status:						
Married	.648	.832	.627	.833	.532	.705
No married	.352	.168	.323	.167	.468	.295
Education:						
No degree	.072	.075	.079	.120	.098	.126
High school	.195	.207	.167	.205	.173	.205
College	.334	.360	.282	.280	.376	.402
Bachelor	.229	.193	.299	.256	.213	.168
Graduates	.169	.165	.173	.139	.140	.099
Mother tongue :						
English or French	.491	.404	.130	.097	.445	.406
Neither English nor French	.509	.596	.870	.903	.555	.594
Other income:						
Other family income (in thousand)	40.834	73.548	29.643	56.700	27.191	54.249
Observation	3,451	7,915	5,743	20,137	2,488	7,795

Note: All means are weighted.

3.3.2 Summary statistics for the wage sample

Regarding the restricted sample of women who had wages in 2010, table 5 shows the means of the selected variables. We can observe that women who do not have children earn on average more than women who have children. For the whole sample, women with children earn 39,600 dollars per year, but childless women earn almost 3,000 dollars more. For the Canadian-born group, the average of childless women's yearly wages is about 43,300 dollars, but mothers earn 2,900 dollars less. However, the wage gap between childless immigrant women and immigrant mothers is not very large, at only about 2,000 dollars. However, there is a sizable wage gap between Canadian-born and immigrant women. Comparing the wages of childless women, Canadian-born women earn on average 4,300 dollars more than immigrant women. As for

women with children, the wage gap between Canadian mothers and immigrant mothers is about 3,400 dollars. It is also worth noticing that even the native-born mothers receive higher wages than the childless immigrant women.

As for the the number of weeks worked in 2010, women with children worked fewer weeks than their childless counterparts for the whole sample. But for immigrant group, there is little difference between childless women and mothers. In terms of full-time status, we can see that the proportion of full-time workers is slightly higher for childless women than that for mothers.

Similar to the finding in the first sample, Canadian-born mothers have a slightly higher proportion with young children. However, immigrant mothers are more likely to have older children, but the differences are all very small.

In terms of education, immigrant women are more educated than Canadian-born women, which is also consistent with the first sample. Among women without children, up to 16.9% of childless immigrant women have a graduate's degree, while it is the case for only 9.6% of Canadian-born childless women. Similarly, immigrant mothers show higher levels of education than Canadian mothers.

Table 5: Summary statistics of Canadian and immigrant women who had wages.

Variables	**Whole sample**		**Canadian-born**		**Immigrants**	
	Childless	**Mother**	**Childless**	**Mother**	**Childless**	**Mother**
Wage	42,580	39,553	43,308	40,448	39,041	36,953
Number of weeks	45.317	43.879	45.675	44.111	43.575	43.205
Full-time	.856	.789	.860	.786	.838	.795
Presence of Children:						
Under 5		.280		.289		.253
6 to 14		.437		.433		.449

Over 15		.513		.502		.547
Education:						
No degree	.067	.067	.068	.062	.060	.079
High school	.205	.209	.214	.217	.161	.188
College	.385	.416	.398	.439	.327	.350
Bachelor	.234	.209	.224	.200	.283	.238
Graduates	.109	.098	.096	.083	.169	.144
Observation	48,962	89,661	40,214	65,954	8,748	23,707

Note: All means are weighted.

Comparisons of the same variables for immigrant women from different origins are provided in table 6. First, Asian mothers earn the least among all the three groups of immigrants. However, among all the childless immigrant women, those from Africa and America with no children earn the least. Asian mothers only earn 34,600 per year on average, while US and European mothers' average yearly wage is approximately 7,900 dollars higher than that of Asian women. Women from Africa and America also face relatively low yearly wages, which are close to the average earnings of Asian women. There are slight differences in the number of weeks worked between childless women and mothers for all immigrant groups. Women with no children are also more likely to work full-time.

Regarding the presence of children, only 21.5% of European and US mothers have children under 5 years old, and up to 58% of them have at least one child over 15 years old. However, 26.3% of Asian mothers and 27.4% of mothers from Africa and America have at least one infant at home. The pattern of these variables are similar to those of the total sample, mothers from Africa and America tend to have more young children but US and European mothers tend to have older children.

In terms of education levels, many Asian women have bachelor's degrees or even higher degrees. Specifically, 33% of Asian childless women and 28% of Asian mothers are educated at university levels, representing the largest share of bachelor's degree among all the three immigrant groups. In general, women from the US, Europe and Asia are relatively better educated than women from Africa and America.

Table 6: Summary statistics of immigrant women who had wages by different places of birth.

Variables	US and Europe		Asia		Africa and America	
	Childless	**Mother**	**Childless**	**Mother**	**Childless**	**Mother**
Wage	44,519	42,516	36,582	34,563	36,276	36,165
Number of weeks	44.862	44.609	43.108	42.772	42.790	42.804
Full-time	.847	.789	.844	.801	.824	.797
Presence of Children:						
Under 5		.215		.263		.274
6 to 14		.414		.456		.467
Over 15		.580		.537		.548
Education:						
No degree	.060	.061	.055	.090	.074	.083
High school	.178	.195	.149	.187	.163	.190
College	.337	.372	.290	.298	.387	.443
Bachelor	.250	.198	.330	.280	.235	.181
Graduates	.176	.174	.175	.146	.142	.103
Observation	2,551	5,458	3,999	12,294	1,750	4,859

Note: All means are weighted.

4. Econometric Model

The econometric models that I estimate in this paper take the form of the following three cross sectional equations:

First, I examine the probability of participating in the labour force:

$$\begin{aligned} Labour\ force\ participation_i &= \beta_0 + \beta_1 children_i + \beta_2 other\ family\ income_i + \beta_3 YSM_i + \beta_4 YSM^2{}_i \\ &+ \beta_5\, not\ married_i + \beta_6 age_i + \beta_7 age^2{}_i + \beta_8 education_i \\ &+ \beta_9 mother\ tongue_i + \beta_{10} location\ of\ study_i + \beta_{11}\text{geographical controls}_i \\ &+ \varepsilon_i \end{aligned}$$

Where "labour force participation$_i$" is the status of labour force participation of individual i. If the individual is in the labour force, then the variable labour force participation equals 1, otherwise it equals 0. The "children$_i$" variable is a set of indicator variables, which are equal to 1 if the woman has at least one child in each different age range, and are equal to 0 otherwise. The reference group is the women with no children. The variable "YSM$_i$" measures the number of years since immigration; it is excluded from the model for Canadian-born individuals. The variable "not married$_i$" is a dummy variable that indicates the individual is not married, and the reference group is the married women. In addition, there are four indicators of education that account for the highest education level women attained, with the high school degree as the reference group. As for the variable "mother tongue$_i$", it is divided into two categories. One category is for those individual whose mother tongue is English or French, which is the reference group. The other one is for those individual whose mother tongue is neither English nor French. With regard to the "location of study$_i$", I take people who obtained a postsecondary certificate, diploma or degree outside of Canada, or whose level of education is lower than the

postsecondary degree, as the reference group. The variable "geographical controls$_i$" contains five provincial indicators, with Ontario as the base group.

In the second model, the objective is to explore whether the probability of being employed differs between Canadian-born and immigrant women and whether the impact of having children on employment rate differs between Canadian-born and immigrant women:

$$\begin{aligned} Employment\ status_i &= \beta_0 + \beta_1 children_i + \beta_2 other\ family\ income_i + \beta_3 YSM_i + \beta_4 YSM^2{}_i \\ &+ \beta_5\, not\ married_i + \beta_6 age_i + \beta_7 age^2{}_i + \beta_8 education_i \\ &+ \beta_9 mother\ tongue_i + \beta_{10} location\ of\ study_i + \beta_{11}\text{geographical controls}_i \\ &+ \varepsilon_i \end{aligned}$$

For the model 2, I just replace the dependent variable of "labour force participation$_i$" with the variable "employment status$_i$", with all the explanatory variables being the same as in model 1.

Since the above two dependent variables are dummy variables, I estimated with a probit model as well as with a linear probability model using OLS. Since the results are similar, I will present only the results of the linear probability model in the following section. Moreover, I will use robust standard errors to account for possible heteroscedasticity.

In the third model, the dependent variable is log(wage)$_i$, the natural logarithm of the annual wage of individual i. The sample is different, as noted before, and there are small changes in the explanatory variables:

$$\begin{aligned} \ln(wage)_i = {} & \beta_0 + \beta_1 children_i + \beta_2 YSM_i + \beta_3 YSM^2{}_i + \beta_4 not\ married_i \\ & + \beta_5\, full - time_i + \beta_6 \ln(week)_i + \beta_7 age_i + \beta_8 age^2{}_i + \beta_9 education_i \\ & + \beta_{10} mother\ tongue_i + \beta_{11} location\ of\ study_i + \beta_{12}\text{geographical controls}_i \\ & + \varepsilon_i \end{aligned}$$

Model 3 focusses on the second restricted sample, which includes only employed women. The objective of model 3 is to analyze the discrepancy of wages between Canadian-born and

immigrant women and whether the motherhood wage gap varies with different places of birth. Compared with the earlier two models, one explanatory variable "other family income$_i$" is excluded and two more explanatory variables "full-time$_i$" and "ln(week)$_i$" are added in the third regression equation. The variable *"full-time$_i$" is an indicator which is equal to 1 if the woman worked full-time, and "ln(week)$_i$" is the natural logarithm of the number of weeks worked in 2010.

There may exist a problem of reverse causality that comes from the endogeneity of children. The presence of children is assumed to have an impact on women's labour market performance, but the causality could be the other direction. It is possible that women's labour market performance also play a role in their decisions to have children. The more successful women tend to perform better in their careers and to have less intent to have children. However, in my study, I assume that the presence of children is exogenous and women's labour market performance is endogenous. The women's labour market performance is influenced by their motherhood status, which is the most likely circumstance.

5. Empirical Results

5.1 Labour force participation of women by different places of birth

Table 7 presents the OLS results for the regression on labour force participation of women by different places of birth. At first sight, it is obvious that having children is negatively correlated with the labour force participation of women. Specifically, if they have one or more children under 5 years old, Canadian-born women are 12.3 percentage point less likely to participate in the labour market. This negative effect for immigrant women from the US and Europe is almost

the same as that for the Canadian-born women. However, female immigrants from Asia, Africa and America face slightly bigger obstacles to get involved in the labour market if they have children less than 5 years old. Both groups are estimated to be about 15 percentage point less likely to enter in the labour force if they have children under 5 years old. Raising children aged between 6 and 14 is relatively easier than raising children under 5. The negative effect of having children in those ages is weaker for both the native-born and immigrant women. The probability of entering the labour force is reduced by 2 to 4 percent points. Moreover, women who have children above 15 years old have a 2 percent point higher probability to participate in the labour force than women without children (for women from Asia, this difference in probability is 3.5 percent points).

Other family income is another determinant of women's labour force participation. That variable is measured in thousands of dollars. The coefficients are quite small, but they are all negative and statistically significant. For Canadian-born women and immigrant women from the US and Europe, the results indicate that increasing their other family income by 10000 dollars will decrease their probability of entering labour force by 0.6 percentage points. In contrast, the negative effect of other family income for immigrants from Asia, Africa and America is smaller, since increasing their family income by 10000 dollars only decreases the probability of labour force participation by 0.2 percent points.

For immigrant women, year since immigration is positively and significantly related to the probability of participating in the labour force, especially for immigrants from Asia.

The estimated coefficients of not married show that unmarried women are less likely to participate in the labour force than married, with the exception of women from Africa and America whose effect of is insignificant. For Canadian-born women, not being married is

expected to reduce the probability of participating in the labour force by 6.5 percentage points compared to being married. Unmarried women from the US and Europe tend to be 3.2 percentage points less likely to enter in the labour force than their married counterparts. However, the effect for women from Asia is much smaller, only leading to a 1.6 percentage point reduction in the probability of labour force participation.

With regards to the age of women, all the coefficients are positive and statistically significant. Since all the signs of squared-age are negative, the positive effect of age on labour force participation decreases as age goes up.

Considering the effect of education, it is obvious that the probability of participating in the labour force is positively related with the level of education. The higher level of education they obtained, the more likely women are to participate in the labour force. Specifically, compared to Canadian-born women with high school degree, their counterparts with a college degree are 6.4 percentage point more likely to participate, and those with a bachelor degree have 11 percentage point higher probability of participating in the labour force; this figure increases again for the Canadian-born women with graduate degree, at 12.7 percentage points. It is interesting to note that the positive effect of education for female immigrants from Asia is the strongest among the four groups.

The estimated coefficients for having a mother tongue other than English or French are all significantly negative. The magnitude of this effect is relatively greater for immigrants from Asia, Africa and America than that for Canadian-born women and immigrants from the US and Europe. With regards to the location of study, studying in Canada has a positive contribution to the probability of entering the labour force just as we expected, except for immigrants from the US and Europe whose coefficient is insignificant. For them, it is probably because colleges and

universities in those countries are comparable to those in Canada, which is not the case for the other two groups of countries.

Table 7: Regression on labour force participation of women by different places of birth – OLS Results

Variables	Canadian-born	US and Europe	Asia	Africa and America
Presence of children: (Base group: no children)				
Under 5	-.1232 *** (.0030)	-.1242 *** (.0128)	-.1534 *** (.0080)	-.1573 *** (.0119)
6 to 14	-.0246 *** (.0024)	-.0350 *** (.0093)	-.0382 *** (.0064)	-.0219 ** (.0096)
Over 15	.0259 *** (.0024)	.0204 ** (.0089)	-.0345 *** (.0066)	.0201 * (.0104)
Other income:				
Other family income ($1000)	-.0006 *** (.0000)	-.0006 *** (.0001)	-.0002 *** (.0001)	-.0002 * (.0001)
Year since immigration:				
Year		.0081 *** (.0012)	.0146 *** (.0010)	.0089 *** (.0014)
$Year^2$		-.0001 *** (.0000)	-.0002 *** (.0000)	-.0002 *** (.0000)
Marital status: (Base group: married or living in the common law)				
Not married	-.0649 *** (.0025)	-.0324 *** (.0105)	-.0166 ** (.0074)	-.0120 (.0105)
Demographic variables:				
Age	.0165 *** (.0013)	.0216 *** (.0058)	.0293 *** (.0040)	.0192 *** (.0060)
Age^2	-.0002 *** (.0000)	-.0003 *** (.0001)	-.0004 *** (.0001)	-.0002 *** (.0001)
Education: (Base group: high school)				
No degree	-.2061 *** (.0049)	-.1226 *** (.0199)	-.0899 *** (.0116)	-.1539 *** (.0183)

College	.0641 ***	.0739 ***	.0993 ***	.0531 ***
	(.0080)	(.0142)	(.0094)	(.0153)
Bachelor	.1095 ***	.0977 ***	.1448 ***	.0905 ***
	(.0080)	(.0149)	(.0090)	(.0160)
Graduates	.1268 ***	.1396 ***	.1467 ***	.1279 ***
	(.0078)	(.0150)	(.0103)	(.0172)
Mother tongue: (Base group: either English or French)				
Neither English or French	-.0155 ***	-.0173 **	-.0340 ***	-.0523 ***
	(.0046)	(.0083)	(.0086)	(.0093)
Location of study: (Base group: out of Canada)				
Within Canada	.0191 **	.0176	.0411 ***	.0747 ***
	(.0075)	(.0112)	(.0076)	(.0123)
Place of residence: (Base group: Ontario)				
Quebec	.0165 ***	.0077	-.0548 ***	-.0034
	(.0024)	(.0113)	(.0106)	(.0105)
Manitoba & Saskatchewan	.0044	-.0390	.1098 ***	.0074
	(.0040)	(.0265)	(.0155)	(.0347)
Alberta	-.0042	-.0222	.0650 ***	.0404 **
	(.0034)	(.0141)	(.0091)	(.0174)
British Columbia	-.0154 ***	-.0262 **	-.0004	.0501 ***
	(.0034)	(.0117)	(.0069)	(.0161)
Atlantic	-.0179 ***	-.0409	-.2428 ***	-.0202
	(.0038)	(.0364)	(.0557)	(.1360)
Constant	.5764 ***	.3341 ***	.0556	.3164 ***
	(.0255)	(.1131)	(.0774)	(.1166)
R-squared	.0817	.0545	.0824	.1008
Observation	139,581	10,055	24,522	9,424

Note: Robust standard errors are in parentheses.

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Since the three groups of immigrant women are highly aggregated, I also check the coefficients obtained with the regression for some specific places of birth to see if there are any differences in behaviour with respect to labour force participation. For this analysis, I concentrate only on the coefficients of the children variables.

From Table 8, it is evident that the coefficients of children under 5 are all significantly negative for these six groups. Women from Africa and South America experience the biggest obstacles to enter the labour force if they have children under 5 years old. Among the immigrants from Asia, Chinese and Indian women experience 10 and 12 percent points reduction respectively in the probability of participating in the labour force when they have children under 5; both figures are slightly smaller than that of the earlier aggregated group of Asia, which was 15 percent. The coefficient of the presence of children under 5 for the US (13 percent) is similar to that for the aggregated group US and Europe (12 percent). In addition, women from the US, China and Africa are also estimated to be less likely to participate in the labour force if they have children aged between 6 and 14 years old. However, the presence of children over 15 years old seems to increase the probability of participating in the labour force only for immigrants from India and South America.

Table 8: Regression on labour force participation of immigrant women for six specific places of birth - OLS Results

Variables	US	UK	China	India	Africa	South America
Presence of children: (Base group: no children)						
Under 5	-.1320 ***	-.0982 ***	-.0989 ***	-.1198 ***	-.1512 ***	-1736 ***
	(.0389)	(.0294)	(.0181)	(.0174)	(.0189)	(.0266)
6 to 14	-.0767 ***	-.0057	-.0352 **	.0008	-.0385 **	.0154
	(.0275)	(.0192)	(.0156)	(.0151)	(.0168)	(.0201)
Over 15	.0018	-.0149	-.0244	.0278 *	-.0026	.0369 *
	(.0263)	(.0187)	(.0163)	(.0168)	(.0200)	(.0205)
R-squared	.0842	.0464	.0953	.0706	.1336	.0766
Observation	1,206	2,069	4,458	4,247	3,321	2,220

Note: I have controlled for the other variables (other family income, years since immigration, marital status, age, education, mother tongue, location of study, place of residence); the full regression results are shown in Appendix Table A.1.
Robust standard errors are in parentheses.
* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

5.2 Employment of women by different places of birth

Table 9 presents the OLS results for the regression on the employment rate of women by different places of birth. The coefficients obtained from those regressions on employment rate are quite similar to those obtained on labour force participation previously. However, being employed denotes a stronger attachment, or a better success, on the labour market than just participating in the labour force. From table 9, I find that women who have children aged under 14 years old are less likely to be employed than those who do not have children. The coefficients for the presence of children of different ages are similar with those obtained in the regression on labour force participation. The coefficients of the presence of children of both Canadian-born women and those from the US and Europe show similar magnitudes, but those for immigrants from Asia, Africa and America are relatively larger, which reflects the higher difficulty to get a job for those immigrants.

As before, the negative effect of the presence of children under 5 years old on female employment rate for women from Africa and America is the largest, yielding a 16.7 percentage point reduction in the probability of being employed. The figure decreases to 15.8 percentage points for immigrant women from Asia. For Canadian-born women and immigrant women from the US and Europe, the negative effect of children under 5 years old is smaller. The presence of children aged between 6 and 14 also decreases the probability of employment, but at a smaller

magnitude, with 2.8 to 4.7 percentage point reductions in the probability of being employed. However, women who have children aged over 15 years old have an about 3 percentage point higher probability of being employed than childless women (except for immigrants from Asia whose effect is negative).

The coefficients of other family income also show the same pattern as those obtained for labour force participation. For immigrant women, years since immigration is positively and significantly related to the probability of being employed as expected. Asian immigrants' probability of being employed initially increases 1.8 percentage points per year, while this figure falls to 1.1 percentage points for immigrants from the US and Europe, and to 1.4 percentage points for immigrants from Africa and America.

The estimated coefficients of not married are all negative, but the coefficients are larger than those for labour force participation, and the coefficient is still insignificant for Asian women. Single Canadian-born women tend to be 8.4 percentage point less likely to find a job than their married counterparts. For the not married women from the US and Europe, their probability of being employed is expected to be 5.6 percentage point lower than that of their married counterparts. However, this figure falls to only 3.2 percentage points for women from Africa and America.

The coefficients of age indicate that the probability of being employed for all groups of women increases at a decreasing rate as the age of women increases. Regarding to the effect of education, I observe that the impacts of education levels are economically and statistically significant for all women. As I found in the model for labour force participation, the positive effect of education for Asian women is the strongest among the four groups of women. The coefficients are not much different from those for labour force participation.

The probability of being employed is negatively related to a mother tongue that is not a Canadian official language. The negative effect is the strongest for immigrants from Africa and America. The coefficients of location of study within Canada are all positive and statistically significant, with the effect being the strongest for immigrants from Asia, Africa and America.

Table 9: Regression on employment status of women by different places of birth – OLS Results

Variables	Canadian-born	US and Europe	Asia	Africa and America
Presence of children: (Base group: no children)				
Under 5	-.1218 *** (.0031)	-.1291 *** (.0136)	-.1584 *** (.0083)	-.1672 *** (.0125)
6 to 14	-.0280 *** (.0025)	-.0372 *** (.0100)	-.0467 *** (.0067)	-.0317 *** (.0103)
Over 15	.0270 *** (.0025)	.0277 *** (.0095)	-.0397 *** (.0070)	.0215 ** (.0112)
Other income:				
Other family income ($1000)	-.0006 *** (.0000)	-.0006 *** (.0001)	-.0002 *** (.0001)	-.0001 (.0001)
Year since immigration:				
Year		.0115 *** (.0013)	.0176 *** (.0010)	.0142 *** (.0015)
$Year^2$		-.0002 *** (.0000)	-.0003 *** (.0000)	-.0003 *** (.0000)
Marital status: (Base group: married or living in the common law)				
Not married	-.0835 *** (.0027)	-.0559 ** (.0116)	-.0118 (.0079)	-.0324 *** (.0113)
Demographic variables:				
Age	.0180 *** (.0014)	.0246 *** (.0062)	.0256 *** (.0042)	.0196 *** (.0065)
Age^2	-.0002 *** (.0000)	-.0003 *** (.0001)	-.0003 *** (.0001)	-.0002 *** (.0001)

Education: (Base group: high school)				
No degree	-.2169 ***	-.1232 ***	-.0870 ***	-.1520 ***
	(.0050)	(.0204)	(.0117)	(.0184)
College	.0691 ***	.0748 ***	.1035 ***	.0520 ***
	(.0086)	(.0151)	(.0097)	(.0162)
Bachelor	.1276 ***	.0927 ***	.1561 ***	.1004 ***
	(.0087)	(.0158)	(.0094)	(.0169)
Graduates	.1480 ***	.1424 ***	.1510 ***	.1374 ***
	(.0085)	(.0159)	(.0107)	(.0186)
Mother tongue: : (Base group: either English or French)				
Neither English or French	-.0231 ***	-.0277 ***	-.0343 ***	-.0551 ***
	(.0049)	(.0089)	(.0092)	(.0100)
Location of study: (Base group: out of Canada)				
Within Canada	.0215 ***	.0214 *	.0398 ***	.0883 ***
	(.0082)	(.0121)	(.0081)	(.0133)
Place of residence: (Base group: Ontario)				
Quebec	.0244 ***	-.0016	-.0634 ***	-.0143
	(.0026)	(.0124)	(.0110)	(.0112)
Manitoba & Saskatchewan	.0166 ***	-.0216	.1315 ***	.0426
	(.0043)	(.0275)	(.0166)	(.0356)
Alberta	.0054	-.0082	.0886 ***	.0725 ***
	(.0036)	(.0148)	(.0096)	(.0187)
British Columbia	-.0152 ***	-.0199	.0141 **	.0848 ***
	(.0036)	(.0124)	(.0072)	(.0170)
Atlantic	-.0268 ***	-.0453	-.2391 ***	.0521
	(.0041)	(.0390)	(.0530)	(.1391)
Constant	.4997 ***	.2016 *	.0339	.1796
	(.0274)	(.1222)	(.0810)	(.1245)
R-squared	.0831	.0547	.0873	.1166
Observation	139,581	10,055	24,522	9,424

Note: Robust errors are in parentheses.

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

As before, I estimate the models separately for the six places of birth chosen from the three aggregated areas for female immigrants. The coefficients of the presence of children are presented in Table 10; the full table is at the end of the paper in Appendix Table A.2.

From Table 10, first of all, the coefficients of children under 5 years old are all negative and statistically significant for these six groups, just as we expected. Raising children under 5 years old is relatively more time-consuming and toilsome and leads to a lower employment probability. In general, those patterns are roughly similar to those of the labour force participation regression. Specifically, among these six groups of female immigrants, women from South America suffer the most serious negative effect of children under 5 years old, which brings an 18 percentage point decrease in the probability of being employed. Women from Africa also experience a considerable impact of having children under 5, which reduces the probability of being employed by about 17 percentage points. The figure for Indian women is around 12 percentage points. However, the figures for women from the US, the UK, and China are much the same, only around 10 percentage points. In addition, women from the US, China and Africa also experience lower probabilities of being employed for having children aged between 6 and 14 years old. The presence of children aged over 15 years old seems to have no impact on the probability of being employed, except for immigrant women from South America, whose probability of being employed is positively correlated with presence of children aged over 15 years old at the 10 percent level of significance; this is same as the previous finding obtained in the labour force participation regression.

Table 10: Regression on employment rate of immigrant women for six specific places of birth - OLS Results

Variables	US	UK	China	India	Africa	South America
Presence of children: (Base group: no children)						
Under 5	-.1028 ** (.0402)	-.1059 *** (.0311)	-.1080 *** (.0187)	-.1242 *** (.0186)	-.1653 *** (.0197)	-.1806 *** (.0275)
6 to 14	-.0735 **	.0005	-.0455 ***	-.0011	-.0345 **	.0071

	(.0289)	(.0203)	(.0163)	(.0163)	(.0176)	(.0214)
Over 15	.0069	.0242	-.0246	.0223	.0102	.0376 *
	(.0276)	(.0200)	(.0170)	(.0184)	(.0211)	(.0222)
R-squared	.0803	.0460	.1004	.0774	.1609	.0926
Observations	1,206	2,069	4,458	4,247	3,321	2,220

Note: I have controlled for the other variables (other family income, years since immigration, marital status, age, education, mother tongue, location of study, place of residence); the full regression results are shown in Appendix Table A.2.

Robust standard errors are in parentheses.

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

5.3 Wages of women by different places of birth

Table 11 presents the OLS results of the log wage regression for women by different places of birth. First, the results show that Canadian-born women earn respectively 5.7 percent, 2.2 percent, and 4 percent less than their childless counterparts for having children aged under 5, between 6 and 14, and over 15 years old. This result is consistent with earlier studies that mothers suffer wage penalties. It is obvious that having children under 5 years old has a larger effect than having older children. However, the results for immigrants from the US and Europe are quite different. Annual wages of women from the US and Europe seem to be unaffected by the presence of children under 14. However, the presence of children over 15 years old tends to reduce their yearly wage by about 6 percent. The negative effect of the presence of children less than 5 years old only yields a 3.1 percent reduction in annual wages of Asian women. But the negative effect of the presence of children aged between 6 and 14 for Asian women is around 3.7 percent, which is 1 percent point higher than that for Canadian-born women. The estimated effect of children over 15 for Asian women is 6 percent, which is also greater than that for the

Canadian-born women. Furthermore, immigrant women from Africa and America suffer a motherhood penalty only for having children under 5 years old.

The estimated coefficients of not married are all negative, but they are significant only for Canadian-born women, indicating that unmarried Canadian-born women earn on average 4.7 percent less than their married counterparts.

In addition, years since immigration is positively and significantly related to immigrants' wages as expected. Asian immigrants' annual wages are expected to initially increase 2.8 percent points following another year in Canada. This figure is a little bit lower for immigrants from the US and Europe (1.8 percent) and immigrants from Africa and America (2.4 percent). All the effects show a decreasing rate of growth.

Regarding the working status, both Canadian-born and immigrant women who work full-time earn more than their counterparts who only work part-time, and women's wages are also positively related to the number of weeks worked. The coefficients of age are positive and statistically significant, indicating women's wages are expected to be higher for older workers, but this positive effect has a decreasing rate of growth since the sign of squared-age is negative.

With respect to education, it is clear that the impacts of education levels on women's wages are economically and statistically significant for all women of those four groups. Canadian-born women with college degree tend to have 14.5 percent higher wages than the reference group whose highest level of education is high school. Annual wages of Canadian-born women with a bachelor degree and with a graduate degree earn, on average, respectively 48.8 and 58.5 percent higher than their counterparts who only attended high school. Those figures regarding education for the other three groups of immigrant women are relatively smaller than those for the Canadian-born women, indicating lower returns to education.

Immigrant women whose mother tongue is neither English nor French earn less than their counterparts whose mother tongue is either English or French. The negative effect is the strongest for immigrants from Asia. This figure gets smaller for immigrant women from Africa and America, at 8.3 percent. For immigrant women from the US and Europe, there is only a 4.7 percent wage disadvantage.

The coefficients of location of study within Canada are all positive, but statistically significant only for three groups of immigrant women. Studying in Canada is estimated to increase women's wages by about 16 percent for the Asians, and this figure is 11 percent for immigrants from Africa and America and 10 percent for immigrants from the US and Europe.

Table 11: Regression on ln(wage) of women by different places of birth – OLS Results

Variables	Canadian-born	US and Europe	Asia	Africa and America
Presence of children: (Base group: no children)				
Under 5	-.0570 ***	.0253	-.0312 *	-.0729 **
	(.0067)	(.0275)	(.0175)	(.0289)
6 to 14	-.0215 ***	-.0310	-.0373 ***	-.0256
	(.0054)	(.0208)	(.0138)	(.0217)
Over 15	-.0401 ***	-.0603 ***	-.0505 ***	-.0060
	(.0049)	(.0193)	(.0137)	(.0219)
Marital status: (Base group: married or living in the common law)				
Not married	-.0474 ***	-.0120	-.0032	-.0028
	(.0047)	(.0209)	(.0155)	(.0220)
Year since immigration:				
Year		.0176 ***	.0279 ***	.0236 ***
		(.0028)	(.0022)	(.0034)
$Year^2$		-.0002 ***	-.0004 ***	-.0004 ***
		(.0000)	(.0001)	(.0001)
Working status:				
Full-time	.7930 ***	.7534 ***	.7429 ***	.7084 ***
	(.0068)	(.0262)	(.0184)	(.0300)

Ln (week)	.7515 *** (.0075)	.7522 *** (.0307)	.7190 *** (.0175)	.7086 *** (.0282)
Demographic variables:				
Age	.0728 *** (.0029)	.0678 *** (.0125)	.0460 *** (.0085)	.1004 *** (.0143)
Age^2	-.0007 *** (.0000)	-.0007 *** (.0002)	-.0005 *** (.0001)	-.0011 *** (.0002)
Education: (Base group: high school)				
No degree	-.2279 *** (.0101)	-.1330 *** (.0380)	-.1475 *** (.0249)	-.1881 *** (.0429)
College	.1446 *** (.0206)	.0768 ** (.0306)	.1443 *** (.0199)	.0820 ** (.0350)
Bachelor	.4881 *** (.0207)	.3489*** (.0326)	.3696 *** (.0190)	.3809 *** (.0360)
Graduates	.5849 *** (.0203)	.4684 *** (.0335)	.3968 *** (.0226)	.4370 *** (.0415)
Mother tongue: (Base group: either English or French)				
Neither English or French	.0202 * (.0104)	-.0466 ** (.0186)	-.1009 *** (.0178)	-.0830 *** (.0212)
Location of study: (Base group: out of Canada)				
Within Canada	.0271 (.0199)	.0983 *** (.0259)	.1600 *** (.0166)	.1066 *** (.0285)
Place of residence: (Base group: Ontario)				
Quebec	-.1146 *** (.0053)	-.1622 *** (.0254)	-.2306 *** (.0243)	-.1563 *** (.0240)
Manitoba & Saskatchewan	-.0432 *** (.0089)	.0178 (.0445)	-.0363 (.0335)	-.0553 (.0911)
Alberta	.0914 *** (.0077)	.0464 (.0289)	.1568 *** (.0191)	.1238 *** (.0414)
British Columbia	-.0393 *** (.0077)	-.0383 (.0263)	-.0676 *** (.0148)	.0311 (.0378)
Atlantic	-.1494 *** (.0077)	-.1950 *** (.0720)	.1434 (.1550)	.2703 (.1815)
Constant	5.0415 *** (.0605)	5.0682 *** (.2607)	5.4651 *** (.1712)	4.4663 *** (.2872)
R-squared	.4207	.3859	.4142	.4307
Observation	106,168	7,050	15,323	5,983

Note: Robust errors are in parentheses.

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Similarly to the previous regressions, I estimate the models separately for the six specific places of birth chosen from the three aggregated areas for immigrants. The coefficients of the variables for the presence of children are presented in Table 12. The full table is at the end of the paper in Appendix Table A.3.

From Table 12, I find that immigrant women from the UK and Africa do not appear to suffer a motherhood wage penalty at all, their coefficients of presence of children being all insignificant. However, the sample sizes are small. Immigrant women from the US are even estimated to earn 17 percent higher annual wages for having children under 5 years old than their childless counterparts. Their coefficients of presence of children aged over 6 years old are negative but insignificant. Among the six groups of female immigrants, those from China suffer the most serious motherhood wage penalty of having children under 5 years old, as they earn 8.2 percent less than their childless counterparts. Chinese women seem to free themselves from the negative effect of having children when they are aged over 6 years. Immigrant women from South America only suffer a motherhood penalty for having children aged over 15 years old. However, all the above results must be interpreted with care due to the small sizes of the samples.

Table 12: Regression on ln(wage) of immigrant women for six specific places of birth - OLS Results

Variables	US	UK	China	India	Africa	South America
Presence of children: (Base group: no children)						
Under 5	.1699 **	-.0777	-.0817 **	-.01252	-.0151	-.0667
	(.0745)	(.0608)	(.0404)	(.0367)	(.0484)	(.0620)
6 to 14	-.0882	-.0249	-.0348	-.0612 **	.0012	-.0654
	(.0607)	(.0417)	(.0349)	(.0311)	(.0398)	(.0461)
Over 15	-.0536	-.0370	-.0420	-.0162	-.0331	-.1205 ***
	(.0580)	(.0420)	(.0373)	(.0327)	(.0434)	(.0427)
R-squared	.4162	.4245	.4567	.4115	.4473	.4453

Observation	829	1,536	2,754	2,877	1,923	1,440

Note: I have controlled the other variables (working status, years since immigration, marital status, age, education, mother tongue, location of study, place of residence); the full regression results are shown in Appendix Table A.3.

Robust standard errors are in parentheses.

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

6. Conclusion

In this paper, I have studied the labour market performance of Canadian-born and immigrant women in Canada and the differences in the effect of having children. Labour market performance is measured in terms of labour force participation, employment status and wages. I used cross-sectional data drawn from the 2011 National Household Survey (NHS).

First, I find that the Canadian-born women participate more in the labour market than the immigrant women, no matter whether they are mothers or not. The gap in labour force participation between Canadian-born and immigrant mothers is around 8 percentage points and the corresponding gap for childless women is only 4 percentage points. Regarding employment rates, the results show that childless women have higher rates than mothers for all the groups. The gap in employment rate between Canadian-born and immigrant women is around 11 percentage points, and the gap between Canadian-born and immigrant childless women is only 5 percentage points.

Second, from the sample that consisted of women who had wages in 2010, those with children receive lower wages than those without children. Comparing the wages of childless women, I find that Canadian-born women on average earn 4,300 dollars more than immigrant women do. As for women with children, the wage gap between Canadian mothers and immigrant mothers is about 3,400 dollars.

Third, from the regression analysis, having children does have a significantly negative effect on the labour force participation of women. Bearing younger children has a much larger effect than bearing older children for both Canadian-born women and immigrant women. Female immigrants from Asia, Africa and America face slightly more obstacles to get involved in the labour market for having young children than Canadian-born women. When they have a child under 5 years old, Canadian-born women and immigrant women from the US and Europe are 12.3 percentage point less likely to participate in the labour market than their respective childless counterparts. Immigrant women from Asia, Africa and America are 15 percentage point less likely to enter the labour force if they have any children under 5 years old.

Fourth, women with children are also less likely to be employed than childless women. In general, the younger the children are, the stronger is the effect on female employment rate. The negative effect of the presence of children under 5 years old on employment rate for women from Africa and America is the largest, with a 16.7 percentage point reduction in the probability of being employed. For Canadian-born women and immigrant women from the US and Europe, the negative effect of young children on employment rate is relatively small, at only round 12.5 percentage points.

Fifth, both native-born women and immigrants in Canada do suffer a wage penalty for having children. Specifically, Canadian-born women earn 5.7 percent, 2.2 percent, and 4 percent less than their childless counterparts for having children aged under 5, between 6 and 14, and over 15 years old respectively. However, immigrant women from the US and Europe seem to be unaffected by the presence of children under 14, but only affected by presence of children over 15 years old. The negative effect of older children on women's wage is bigger for Asian mothers

than for Canadian-born mothers. Furthermore, immigrant women from Africa and America only suffer a motherhood penalty for having children under 5 years old.

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Appendix.

Table A.1: Complete regression results on labour force participation for detailed places of birth – OLS Results

Variables	US	UK	China	India	Africa	South America
Presence of children: (Base group: no children)						
Under 5	-.1320 *** (.0389)	-.0982 *** (.0294)	-.0989 *** (.0181)	-.1198 *** (.0174)	-.1512 *** (.0189)	-1736 *** (.0266)
6 to 14	-.0767 *** (.0275)	-.0057 (.0192)	-.0352 ** (.0156)	.0008 (.0151)	-.0385 ** (.0168)	.0154 (.0201)
Over 15	.0018 (.0263)	-.0149 (.0187)	-.0244 (.0163)	.0278 * (.0168)	-.0026 (.0200)	.0369 * (.0205)
Other income:						
Other family income	-.0010 *** (.0002)	-.0008 *** (.0002)	-.0003 (.0002)	-.0003 (.0002)	-.0002 (.0002)	.0000 (.0002)
Year since immigration:						
Year	.0153 *** (.0035)	.0020 (.0028)	.0322 *** (.0028)	.0322 *** (.0028)	.0089 *** (.0024)	.0109 *** (.0030)
$Year^2$	-.0002 *** (.0001)	-.0000 (.0000)	-.0007 *** (.0001)	-.0007 *** (.0001)	-.0002 *** (.0001)	-.0002 *** (.0001)
Marital status: (Base group: married or living in the common law)						
Not married	-.1098 *** (.0331)	-.0331 (.0226)	.0057 (.0181)	.0057 (.0181)	.0260 (.0187)	-.0122 (.0230)
Demographic variables:						
Age	.0056 (.0172)	.0083 (.0136)	.0243 ** (.0100)	.0243 ** (.0100)	.0254 ** (.0105)	.0105 (.0131)
Age^2	-.0001 (.0002)	-.0001 (.0002)	-.0003 *** (.0001)	-.0003 *** (.0001)	-.0003 ** (.0001)	-.0002 (.0002)
Education: (Base group: high school)						
No degree	-.1440 * (.0787)	-.1004 ** (.0469)	-.0247 (.0272)	-.0247 (.0272)	-.2101 *** (.0344)	-.1720 *** (.0401)
College	.1002 ** (.0410)	.0420 (.0327)	.0890 *** (.0229)	.0890 *** (.0229)	.0894 *** (.0266)	-.0012 (.0309)
Bachelor	.1370 *** (.0407)	.0342 (.0350)	.1612 *** (.0214)	.1612 *** (.0214)	.1116 *** (.0273)	.0700 ** (.0310)
Graduates	.1756 *** (.0454)	.1214 *** (.0352)	.1771 *** (.0240)	.1771 *** (.0240)	.1720 *** (.0289)	.1041 *** (.0330)
Mother tongue: (Base group: either English or French)						

Neither English or French	.0765 (.0517)	-.0715 (.0452)	-.0421 (.0364)	-.0421 (.0364)	-.0484 *** (.0159)	-.0029 (.0215)
Location of study: (Base group: out of Canada)						
Within Canada	-.0208 (.0345)	.0301 (.0291)	.0632 *** (.0170)	.0632 *** (.0170)	.0944 *** (.0190)	.0701 *** (.0269)
Place of residence: (Base group: Ontario)						
Quebec	.0120 (.0391)	-.0801 (.0648)	-.0351 (.0248)	-.0351 (.0248)	-.0037 (.0176)	-.0502 ** (.0241)
Manitoba & Saskatchewan	-.0173 (.0569)	-.0336 (.0551)	.1476 *** (.0476)	.1476 *** (.0476)	.1057 ** (.0512)	.0693 (.0655)
Alberta	-.0436 (.0402)	-.0322 (.0264)	.0356 (.0220)	.0356 (.0220)	.0759 *** (.0276)	.0099 (.0358)
British Columbia	-.0288 (.0305)	-.0212 (.0206)	-.0552 *** (.0155)	-.0552 *** (.0155)	.0387 (.0303)	.0593 * (.0340)
Atlantic	-.0400 (.0527)	.0002 (.0610)	-.1809 * (.1029)	-.1809 * (.1029)	-.0907 (.1867)	.2565 *** (.0270)
Constant	.5666 * (.3365)	.7026 *** (.2686)	.0773 (.1928)	.0773 (.1928)	.1331 (.1985)	.5143 ** (.2553)
R-squared	.0842	.0464	.0953	.0706	.1336	.0766
Observation	1,206	2,069	4,458	4,458	3,321	2,220

Note: Robust standard errors are in parentheses.

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table A.2: Complete regression results on employment rate for detailed places of birth – OLS Results

Variables	US	UK	China	India	Africa	South America
Presence of children: (Base group: no children)						
Under 5	-.1028 ** (.0402)	-.1059 *** (.0311)	-.1080 *** (.0187)	-.1242 *** (.0186)	-.1653 *** (.0197)	-.1806 *** (.0275)
6 to 14	-.0735 ** (.0289)	.0005 (.0203)	-.0455 *** (.0163)	-.0011 (.0163)	-.0345 ** (.0176)	.0071 (.0214)
Over 15	.0069 (.0276)	.0242 (.0200)	-.0246 (.0170)	.0223 (.0184)	.0102 (.0211)	.0376 * (.0222)
Other income:						
Other family income	-.0010 *** (.0002)	-.0008 *** (.0002)	-.0002 (.0002)	-.0006 *** (.0002)	-.0001 (.0002)	-.0001 (.0002)
Year since immigration:						
Year	.0179 *** (.0036)	.0046 (.0030)	.0348 *** (.0028)	.0215 *** (.0026)	.0145 *** (.0026)	.0170 *** (.0032)
$Year^2$	-.0003 *** (.0001)	-.0001 * (.0001)	-.0008 *** (.0001)	-.0004 *** (.0001)	-.0003 *** (.0001)	-.0003 *** (.0001)
Marital status: (Base group: married or living in the common law)						
Not married	-.1129 *** (.0351)	-.0499 ** (.0245)	.0018 (.0190)	.0184 (.0235)	-.0421 ** (.0200)	-.0131 (.0242)
Demographic variables:						
Age	-.0020 (.0179)	.0134 (.0147)	.0164 (.0103)	.0010 (.0105)	.0161 (.0109)	.0179 (.0139)
Age^2	-.0000 (.0002)	-.0002 (.0002)	-.0002 ** (.0001)	-.0001 (.0001)	-.0002 (.0001)	-.0003 (.0002)
Education: (Base group: high school)						
No degree	-.1295 (.0793)	-.1327 *** (.0495)	-.0053 (.0278)	-.1058 *** (.0271)	-.1815 *** (.0330)	-.1745 *** (.0404)
College	.1159 *** (.0430)	.0455 (.0342)	.1012 *** (.0235)	.0954 *** (.0234)	.0816 *** (.0273)	-.0042 (.0324)
Bachelor	.1517 *** (.0424)	.0441 (.0363)	.1865 *** (.0222)	.1536 *** (.0220)	.1095 *** (.0279)	.0859 *** (.0331)
Graduates	.1873 *** (.0470)	.1483 *** (.0366)	.2085 *** (.0251)	.1387 *** (.0234)	.1734 *** (.0304)	.1164 *** (.0357)
Mother tongue: (Base group: either English or French)						
Neither English or	.0847 (.0571)	-.0734 (.0473)	-.0701 ** (.0387)	-.0506 *** (.0195)	-.0630 *** (.0171)	-.0153 (.0227)

French						
Location of study: (Base group: out of Canada)						
Within Canada	-.0275 (.0366)	.0252 (.0304)	.0706 *** (.0182)	.0299 (.0205)	.1343 *** (.0206)	.0725 ** (.0286)
Place of residence: (Base group: Ontario)						
Quebec	-.0026 (.0417)	-.0671 (.0675)	-.0318 (.0261)	-.0305 (.0433)	-.0043 (.0185)	-.0818 *** (.0256)
Manitoba & Saskatchewan	-.0309 (.0608)	-.0325 (.0578)	.1884 *** (.0491)	-.0169 (.0509)	.1192 ** (.0557)	.0816 (.0691)
Alberta	-.0392 (.0408)	-.0141 (.0277)	.0707 *** (.0232)	.0896 *** (.0228)	.1226 *** (.0295)	-.0007 (.0394)
British Columbia	-.0325 (.0321)	-.0072 (.0218)	-.0347 ** (.0161)	.0554 *** (.0169)	.0541 (.0329)	.0966 *** (.0352)
Atlantic	-.0646 (.0580)	.0380 (.0605)	-.1610 * (.0980)	-.0568 (.2190)	-.0068 (.1806)	.3300 *** (.0414)
Constant	.6324 (.3514)	.5265 * (.2926)	.1685 (.2000)	.5868 *** (.1990)	.1470 (.2064)	.2546 (.2691)
R-squared	.0803	.0460	.1004	.0774	.1609	.0926
Observation	1,206	2,069	4,458	4,247	3,321	2,220

Note: Robust standard errors are in parentheses.

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table A.3: Complete regression results on ln(wage) for detailed places of birth – OLS Results

Variables	US	UK	China	India	Africa	South America
Presence of children: (Base group: no children)						
Under 5	.1699 **	-.0777	-.0817 **	-.01252	-.0151	-.0667
	(.0745)	(.0608)	(.0404)	(.0367)	(.0484)	(.0620)
6 to 14	-.0882	-.0249	-.0348	-.0612 **	.0012	-.0654
	(.0607)	(.0417)	(.0349)	(.0311)	(.0398)	(.0461)
Over 15	-.0536	-.0370	-.0420	-.0162	-.0331	-.1205 ***
	(.0580)	(.0420)	(.0373)	(.0327)	(.0434)	(.0427)
Marital status: (Base group: married or living in the common law)						
Not married	-.1231 *	.0465	-.0438	.0493	.0336	-.0068
	(.0715)	(.0420)	(.0377)	(.0469)	(.0422)	(.0492)
Year since immigration:						
Year	.0033	.0112 *	.0539 ***	.0283 ***	.0248 ***	.0336 ***
	(.0079)	(.0067)	(.0068)	(.0052)	(.0065)	(.0069)
$Year^2$	.0000	-.0002	-.0012 ***	-.0003 ***	-.0004 ***	-.0005 ***
	(.0001)	(.0001)	(.0002)	(.0001)	(.0002)	(.0002)
Working status:						
Full-time	.7277 ***	.7871 ***	.7456 ***	.5408 ***	.7050 ***	.7709 ***
	(.0737)	(.0555)	(.0451)	(.0399)	(.0490)	(.0682)
Ln (week)	.7393 ***	.8448 ***	.7455 ***	.8007 ***	.7468 ***	.7193 ***
	(.0942)	(.0711)	(.0380)	(.0358)	(.0481)	(.0582)
Demographic variables:						
Age	.1472 ***	.0646 **	.0568 **	.0446 **	.1019 ***	.1056 ***
	(.0382)	(.0310)	(.0224)	(.0206)	(.0254)	(.0292)
Age^2	-.0016 ***	-.0006 *	-.0007 **	-.0005 *	-.0011 ***	-.0011 ***
	(.0005)	(.0004)	(.0003)	(.0003)	(.0003)	(.0004)
Education: (Base group: high school)						
No degree	-.2913 *	-.1232	-.1186 *	-.0468	-.2236 **	-.0339
	(.1726)	(.0947)	(.0636)	(.0523)	(.0906)	(.0869)
College	.1979 **	.1825 **	.1871 ***	.1548 ***	.0626	.0392
	(.0928)	(.0761)	(.0512)	(.0420)	(.0612)	(.0673)
Bachelor	.4256***	.5013 ***	.4954 ***	.3019 ***	.3385 ***	.3488 ***
	(.0925)	(.0857)	(.0480)	(.0409)	(.0622)	(.0703)
Graduates	.6317 ***	.6715 ***	.6136 ***	.3410 ***	.4315 ***	.4001 ***
	(.1026)	(.0855)	(.0525)	(.0436)	(.0672)	(.0832)
Mother tongue:(Base group: either English or French)						

Neither English or French	-.0291 (.1413)	.2115 *** (.0752)	-.2015 *** (.0698)	-.1534 *** (.0370)	-.1409 *** (.0374)	.0837 * (.0451)
Location of study: (Base group: out of Canada)						
Within Canada	.0513 (.0797)	-.0075 (.0696)	.1719 *** (.0368)	.1338 *** (.0408)	.0879 * (.0472)	.1674 *** (.0547)
Place of residence: (Base group: Ontario)						
Quebec	.0582 (.0902)	-.0658 (.0792)	-.2229 *** (.0589)	-.3727 *** (.1009)	-.1837 *** (.0433)	-.2534 *** (.0566)
Manitoba & Saskatchewan	-.0207 (.0786)	.2449 *** (.0824)	.0364 (.0945)	-.0772 (.1086)	.0015 (.1853)	-.3025 * (.1754)
Alberta	.0719 (.0798)	.0686 (.0537)	.1702 *** (.0480)	.1323 *** (.0433)	.1288 * (.0670)	.1457 * (.0810)
British Columbia	-.0577 (.0686)	.0162 (.0463)	-.0544 (.0340)	-.0400 (.0313)	.1656 *** (.0642)	-.0963 (.0840)
Atlantic	-.1355 (.0920)	-.1753 (.1520)	.4308 ** (.1941)	1.1442 *** (.1848)	.5694 * (.3014)	.1906 (.2202)
Constant	3.5419 *** (.8526)	4.6712 *** (.6434)	5.1111 *** (.4444)	5.4073 *** (.4053)	4.3189 *** (.5049)	4.0991 *** (.5770)
R-squared	.4162	.4245	.4567	.4115	.4473	.4453
Observation	829	1,536	2,754	2,877	1,923	1,440

Note: Robust standard errors are in parentheses.

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.