Gender wage gap among Canadian-born and immigrant workers with respect to visible minority status

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Abstract

Using data from 2011 National Household Survey, this paper investigates the gender wage gap among Canadian-born and immigrant workers with regard to visible minority status. The explanatory variables that have impacts on the gender wage gap include education, age, presence of children, marital status and province. I create two samples, one of full-time full-year workers and another one that includes all workers. The main findings are that there are larger returns to education for females than for males, no matter the immigration and ethnic status. Within the visible minorities, immigrants have lower wages than non-immigrants. Specifically, male Filipino immigrants and female South Asian immigrants suffer the largest wage gaps. The higher return to education for females than for males among the South Asians is not as significant as it is among the Chinese. A Oaxaca decomposition shows that demographic factors, educational attainment and some omitted factors play an important role in the unexplained parts of the wage gaps.

1. Introduction

Canada is a multiethnic country and has a more diverse demographic composition than most other countries in the world (Chui, 2011). Nowadays, an increasing number of people choose to immigrate to Canada. This phenomenon results in more than 20 percent of the population not being born in Canada (as per the 2011 National Household Survey). There are always contentious issues in immigrants-receiving country with respect to wage and employment outcomes (Pendakur and Pendakur, 1998). Among the immigrants, more than half belong to visible minorities.

Recent researches also reveal that more and more females are involved in the labour market. Moreover, the proportion of recent immigrant females belonging to visible minorities is increasing. According to Chui (2011), the number of females employed in Canada in 2009 is twice the number of females employed in 1976, and 55 percent of immigrant females belonged to visible minorities in 2006, compared to 22 percent in 1981. There exist wage gaps for visible minorities, and they may be even worse for females because they suffer "double jeopardy based on gender and race (Christofides and Swidinsky, 1994, P.35).

Most previous researches have addressed two main labour market outcomes of immigrants: wages and employment rates. In this paper, I focus on wage rates in the Canadian labour market and divide the immigrants into visible minority and non-visible minority. This paper examines gender wage gap among Canadian-born and immigrants with respect to their ethnicities by using the 2011 National Household Survey (NHS) data set. I evaluate wage gap among male and female workers in four groups: (1) Canadian-born visible minority; (2) Canadian-born non-visible minority; (3) Immigrant visible minority; (4) Immigrant non-visible minority. Basically, there are two regression analyses. First, I investigate the wage gap between visible minority and

non-visible minority. Second, I investigate the gender wage gap among four subgroups of two basic groups. Additionally, I use the Oaxaca decomposition technique to separate the gender wage gap into an explained part and an unexplained part.

My paper is organized as follows. In section 2, I provide a literature review that includes studies on gender and visible minority wage gaps. Section 3 describes the data and presents summary statistics of some key variables. Section 4 presents the econometric models and methodology. The results and their interpretations are shown in section 5. Section 6 presents the Oaxaca decomposition procedure on gender wage gap. Section 7 provides a brief conclusion of this paper.

2. Literature review

Many studies have addressed the question of wage gaps between males and females in the Canadian labour market. Some previous studies have also been done on wage determination by visible minority status. In the section, I first summarize the studies on gender wage gaps, and then I review the studies that investigate wage inequality between visible minority and non-visible minority. The literature review also discusses the wage gaps caused by gender and ethnic status. The great majority of the following papers employ the 'Oaxaca decomposition' methodology, which was first introduces by Oaxaca (1973). It is now widely used to investigate discrimination against particular groups in the labour market.

2.1. Studies on gender wage gaps

There are many causes of the wage gaps between males and females. Since females usually play an important role in taking care of families, they may be less likely than males to spend the same energy on their work. In many cases, females have difficulty making a balance between

family and work. Besides, the wage gaps can be also caused by differences in productivity-related characteristics.

Drolet (2001) investigates the determinants of the gender wage gaps. The data set that she uses is the Survey of Labour and Income Dynamics. By using the Oaxaca decomposition and controlling for various productivity-related characteristics, she finds that the average hourly wage rate for females is 84 percent to 89 percent of the average hourly wage rate for males. Despite having made some achievements in the labour force, such as increased participation rate, improved wage-determining and productivity-related characteristics, Canadian females have higher possibility of withdrawing from the labour force than males due to family-related reasons. Specifically, Drolet (2001) controls for the explanatory variables of working experience and job-related responsibilities. She finds that 12 percent of the gender wage gap is attributed to differences in work experience and that male-female differences in the opportunity of obtaining certain jobs which require work responsibilities and duties such as supervisor, advisor, or jobs that influence budget and staffing decisions, can explain 2 to 5 percent of the gender wage gap. In addition, the educational attainment and some other explanatory variables, such as marital status, presence of kids, firm size and union status, are all associated with gender wage differences.

Christie and Shannon (2001) focus on the impacts of educational attainment on gender wage gaps in the Canadian labour market. The data sets that they use are the 1986 and 1991 Census Public Use Microdata File (PUMF). The sample is restricted to full-time full-year workers whose ages were 25 to 64. The results reveal that although educational attainment only explains a little part of the wage gap, higher educational attainment narrows down the gender wage gap.

Dougherty (2005) examines the impact of schooling on wages. The data used is from the National Longitudinal Survey of Youth (1979). The author mainly finds that the return to schooling is larger for females than for males, which also means that additional years of schooling can gradually narrow down the wage gap between males and females. This is consistent with the conclusion of Christie and Shannon (2001). There are two major explanations: one is that education increases working skills and improves productivity more for females than for males; the other one is that better educated females are more likely to be capable of standardizing wage offers and resisting discrimination.

When looking at the gender wage gaps between immigrants and Canadian-born, Beach and Worswick (1993) examine the impact of gender and birthplace on wages. They want to know if the combination of gender and birthplace would be unfavorable for immigrant females in the Canadian labour market. The paper uses the 1973 Job Mobility Survey data set. The sample was restricted to females, aged 25 to 64, with positive wages. They defined the 'home-time' variable as the years not spend on the labour market and they find that the 'home-time' variable has a significant effect on wages. However, the differences in the coefficients of home time between immigrant and Canadian-born females are not large. Another main finding is that although the double-negative (gender and birthplace) effect on wages is not holding for all immigrant females, it holds for females with high educational attainment. Beach and Worswick (1993) also point out that the initial wage gap between immigrant females and Canadian-born females does not change over their careers.

2.2. Studies on visible minority and gender wage gap between visible minority and non-visible minority

Blackaby *et al.* (2002) provide evidence that Britain's visible minorities still suffer labour market discrimination and that their relative positions have not improved since the 1970s. The data set used in that study is the Office for National Statistics Labour Force Survey (LFS). The authors apply the 'Oaxaca decomposition' methodology to separate the wage gaps into characteristic differences and coefficient differences. Usually, the coefficient differences are interpreted as labour market discrimination. By adjusting earning equations with respect to ethnic groups, the statistics show that earnings are positively related to tenure, education, firm size, health condition, marital status and years in the U.K for Whites. However, most of those relations do not hold for ethnic minorities. For example, longer tenure does not mean higher wages for Pakistanis. They also find that the ethnic wage gaps cannot be explained completely by observed characteristic differences, such as lower abilities, less developed areas. Such stereotype of ethnic minority can limit their job opportunities and unfavorable for policy implementation.

Studying the U.S labour market, Black *et al.* (2006) examine the determinants of the wage gap between minority men (Black, Hispanic and Asian) and non-Hispanic white men with college education. The data set that they used is the 1993 National Survey of College Graduates (NSCG). The authors do a 'nonparametric decomposition' to avoid the 'indeterminacy' and some errors in estimation. Generally, they find that the wage gap can be attributed to premarket factors, such as age, education and fluency in English and for the Blacks who were born in the South, the lower wages can be reflected as the results of cultural difference and social class discrimination. Therefore, the authors consider that ethnicity per se is not the major reason of the existence of market differences in outcomes. However, some minority men cannot fit the culture very well and this would lead to market differences in outcomes.

Bayard *et al.* (1999) estimate wage differences by gender and ethnicity with respect to different jobs, occupations, establishment and industries in the U.S labour market. Constructing the New Workers-Establishment Characteristics Database (NWECD) by combining the 1990 Sample Detailed File (SDF) and the 1990 Standard Statistical Establishment List (SSEL), they mainly find that the wage gap between Hispanics and Whites is due to the wage gap between Hispanic-White men. Similarly, the wage gap between Blacks and Whites is largely due to the wage gap between black and white men. They conclude that ethnic wage gap is more severe for men than for women. As a whole, they consider these results as segregation, which can be the important factor for explaining the lower wages for black and Hispanic men in relative to white men.

Now turning to Canada, Christofides and Swidinsky (1994) identify wage disadvantages by gender and visible minority status. Their data come from 1989 Labour Market Activity Survey. They find that there are significant effects of gender and race on wages. By applying a decomposition methodology, they find that, on average, less than 30 percent of productivity-related characteristics can explain the wage gaps. The unexplained part can be caused by discrimination in the labour market. Visible minority females earn 45.8, 13.4 and 9.4 percent less respectively than white males, visible minority males and white females. Particularly, around 70 percent of the wage gap between white males and visible minority females cannot be explained by productivity-related characteristics. The unexplained part can be attributed to the type of work (full-time as opposed to part-time) and the immigrant status. Males who belong to a visible minority earn 28.5 percent less than white males. There is also more than 70 percent of the wage gap that cannot be explained by productivity-related characteristics. Those wage disadvantages

are quite similar to those for females. However, the unexplained part can be attributed to different compensation system for education attainment, union status and immigrant status.

Hum and Simpson (1999) present a social issue that economic opportunities differ substantially among different ethnic groups. They analyze the wage gaps among different visible minorities by using the Survey of Labour and Income Dynamics (SLID). After dividing the visible minority population into six groups, they find that for people born in Canada, black men, Indo-Pakistani men, Chinese men and non-Chinese Oriental men earn respectively 19 percent, 13 percent, 12 percent, and 16 percent less than non-visible minority men. For foreign-born men, the visible minority groups still show wage disadvantages in comparison to foreign-born men who do not belong to visible minorities. Furthermore, the human capital variables (education and work experience) are not significant in that case, which means that foreign education and foreign work experience do not play important roles in explaining wage gaps.

Swidinsky and Swidinsky (2002) use data from the 1996 Census PUMF to examine the weekly wage gaps between immigrant and Canadian-born visible minorities. Basically, the results show that the wage disadvantages for visible minority immigrant men are more severe than those for white immigrant men. However, the wage deficits are quite small for Canadian-born visible minority men and immigrant women, but the wage deficits are significant for Blacks. Moreover, Canadian-born women are more likely to have higher wages. Specifically, there is evidence of wage discrimination for black visible minority men, but not for Canadian-born visible minority women. They also investigate the impact of age at immigration, working experience and schooling on wages. They find that the younger the visible minority men immigrants arrive in Canada, the more likely it is for them to get high paid jobs. Work experience outside Canada for older visible minority immigrants is relatively depreciated, but

there is no strong evidence that foreign schooling is being undervalued. Although these findings need further investigation, the authors suggest that the policy makers should pay more attention on the consolidation of older visible minority immigrants.

Pendakur and Pendakur (1998) investigate the earning gap between and within visible minorities and whites. The data set is the 1991 Census PUMF. First, they compare earnings between Whites, visible minorities and Aboriginals. Then they define five aggregate subgroups with respect to immigration and visible-minority status and examine the wage gaps among those subgroups. Generally, they find fairly large earning gaps between visible minorities and Whites for sample characteristics, such as Census Metropolitan Area (CMA) and non-CMA residence, and men and women. Visible minority men earn less than white men no matter whether they are immigrants or not. Particularly, Canadian-born visible minority men earn 8.2 percent less than Canadian-born white men. Comparing among specific ethnic groups and different immigration statuses, they find that black and Chinese-origin men earn 17.4 percent and 12.5 percent less than Canadian-born men respectively. Latino American, Filipino, Vietnamese, West Asian, South Asian and Arab immigrant men all suffer more than a 14 percent earning gap relative to Canadian-born British origin men. However, there is no significant gap between Canadian-born visible minority women and Canadian-born white women. Although the earning gaps between immigrants and Canadian-born can fade away with assimilation, the earning gaps between Canadian-born visible minorities and Canadian-born Whites do not erode easily as time goes on.

The following two studies concentrate on the Canadian-born population. Pendakur and Pendakur (2007) aim to examine the conditional earning distribution across different Canadian-born ethnic groups and within gender groups in Canada. The data set that they use is the 2001 Census PUMF. They refer to the issues of the ‘glass ceiling’, which can be faced by women and

minorities who try to obtain ‘good jobs’ with high wages. To address that issue, they adopt a quantile regression methodology and divide the non-European ethnic groups into Arab/West Asian, Caribbean, Chinese (including Hong Kong and Taiwan), and South Asian. They find that Chinese-origin male workers are more likely to face a glass ceiling than British-origin male workers. As for the South Asian males, they experience more earning deficits at the bottom than at the middle and the top of the conditional earning distribution. This pattern is very similar for South Asian females.

A recent study by Hou and Coulombe (2010) compares the earnings of Canadian-born visible minorities to those of Whites across different industrial sectors (public and private sectors). The data set is from 2006 Census and the sample is restricted to paid workers aged 25 to 64 who have positive weekly wages. The key finding is that there is very little wage difference between visible minorities and Whites with similar jobs in the public sector. However, the wages of visible minority men and black women are substantially less than those of Whites in the private sector. More specifically, Chinese men face large earning deficits in comparison to white men in the private sector. In contrast, Chinese women show a slight earning advantage in the private sector. One reason as to why the Chinese and South Asians earn less than Whites is their lower work experience. However, this shortcoming can disappear with time. Furthermore, high education attainment can help Chinese and South Asian men to offset their work experience disadvantage. However, the situation of Blacks is not good. Black men and women experience the largest earning gaps in the private sector. Black women also experience the largest negative earning gaps in the public sector.

To sum up, both the Canadian and the U.S labour markets show wage disparity between males and females as well as between visible minorities and non-visible minorities. Generally,

the wage gap may be generated by different productivity-related characteristics or job-related characteristics, or by stereotype (Blackaby *et al.,* 2002). However, some of the wage gap cannot be directly explained by individual characteristics. Therefore, the rest of this paper will also apply the Oaxaca decomposition procedure to separate the gender wage differences into an explained part and unexplained part. Moreover, some of the conclusions of these studies are highly consistent with each other. For example, Christie and Shannon (2001) and Dougherty (2005) both examine the impact of educational attainment on the wage gap. They draw the same conclusion that the return to schooling is higher for females than for males, and that higher education can reduce the gender wage gaps. Swidinsky and Swidinsky (2002) and Pendakur and Pendakur (1998) both suggest that the wage disadvantage for visible minority men is greater than that for women in comparison with white men and women respectively. The rest of the paper will evaluate the gender wage gap among visible minorities with respect to immigrant status with 2011 NHS data set.

3. Data

In this paper, I use the 2011 National Household Survey (NHS) as my data set. The NHS is designed to collect data information on demographic, social and economic characteristics of people living in Canada. It excludes foreign residents, full-time members of the Canadian Armed Forces and Canadian citizens living in other countries. The NHS uses the 'individual' as the unit of observation. The data is a cross-section and sets a weight to every specific record that is derived from a sample survey. I choose this data set because it gives a rich source of information about labour market and immigration characteristics.

In order to measure the economic performance of the individuals effectively in the sample, I impose some restrictions on the data set. Since my observations should be working-age employed individuals, I set a constraint on age. I only keep the respondents aged between 25 and 64. The reason is that individuals under 25 may still be students, while individuals over 64 are more likely to receive pension instead of wages. Then I choose people who are 'Employed, worked in reference week' or 'Employed, absence in reference week'. I also drop the individuals who were unpaid family workers, were self-employed or not in the labour force because they were more likely not to be working for a positive wage. Regarding the geographic restrictions, I exclude individuals living in the Atlantic Provinces, which are Newfoundland and Labrador, Prince Edward Island, Nova Scotia, and New Brunswick, and I also exclude Northern Canada. This is due to the fact that the population of immigrants in those regions is very small and the sample is limited for some variables. Moreover, I drop from the sample individuals without annual wages and those with less than $500 or more than $200,000 annual wages. Finally, I create two samples for my investigation: one sample is for full-time full-year workers; another sample is for all workers (full-time and part-time). In the first sample, there are 19,292 visible minority immigrants, 13,594 non-visible minority immigrants, 3,656 visible minority non-immigrants and 132,942 non-visible minority non-immigrants. In the second sample, there are 31,399 visible minority immigrants, 20,781 non-visible minority immigrants, 5,558 visible minority non-immigrants and 200,455 non-visible minority non-immigrants.

3.1. Dependent variable

The dependent variable is the natural logarithm of annual wages. The annual wages are reported for persons in private households. They represent the gross wages and salaries before deductions, such as income tax, pensions and Employment Insurance.

3.2. Independent variables

The independent variables can be classified into seven categories: visible minority, immigration, working status, demographic characteristics, human capital, geographic characteristics, and language.

The visible minority variables, which are the main emphasis of this paper, are grouped into five categories of individuals who have different ancestral, social or cultural heritage. They include the four important visible minorities groups of South Asian, Chinese, Black and Filipino, with the last category being the non-visible minority group. In order to focus on the above main visible minorities, I exclude from my sample the following other visible minorities: Latin American, Arab, Southeast Asian, West Asian, Korean, Japanese, Other visible minority and Multiple visible minorities. The proportions of those groups in the population are small.

The immigrant variables include immigrant status and years since migration. The immigrant status is equal to one if the individual is a landed immigrant and zero otherwise. The number of years since migration shows how long the immigrants have stayed and how much they have assimilated in Canada. It can be calculated as 2011 minus the year the individual immigrated to Canada.

The working status variable indicates whether the individual is full-time worker or part-time worker in labour market. In the first sample, I only keep full-time full-year workers, defined as those who worked at least 49 weeks and more than 30 hours per week in 2010. The second sample is conducted for all workers. Typically, I use part-time as dummy variable, which is equal to one if the individual worked part-time in 2010, and equal to zero otherwise. Besides, the working status variables also include weeks worked in 2010, which can measure the impact of number of weeks worked on wage.

The demographic variables include age, gender, marital status, and presence of children. For the age variable, since the age variable is presented in five-year range in the data set, I take the midpoint of each range[1]. I also use age and age square as the indicator of work experience since there are no direct work experience variables in 2011 NHS. Gender divides the sample into males and females. Marital status is divided into two groups: single (never legally married) and not single (married, living common law or previously married). The presence of children indicates the age range of kids in census families. I divide the variable into five categories: (1) without child; (2) at least one child aged under 5; (3) at least one child aged between 6 and 14; (4) at least one child aged between 15 and 24; (5) at least one child aged over 25.

One important indicator of human capital is education. Another indicator, work experience, is roughly represented by age in this paper. It makes sense that the older the more work experience. For the highest education variable, as shown in Table 1, I divide the 13 educational attainment levels that are reported in the data into five categories: (1) no diploma; (2) high school diploma (the base group); (3) college diploma; (4) bachelor's degree; (5) post-graduate degree.

For the geographic variable, I divide the provinces into four groups: (1) Quebec; (2) Ontario (the base group); (3) British Columbia; and (4) Manitoba, Saskatchewan and Alberta which are combined as one group. As mentioned earlier, I drop the individuals from Atlantic and Northern Canada.

Lastly, the language variable represents the mother tongue of individual. It is divided into (1) English (the base group); (2) French; and (3) non-official languages.

3.3. Summary statistics for full-time full-year workers

[1] For example, for age group 9: 25 to 29 years and age group 10: 30 to 34 years, I take 27 and 32 for age group 9 and age group 10 respectively. By using this methodology, the age variable can be made continuous.

As shown in Table 2, the mean annual wage for the males is $65,100 and it is $52,500 for the females within the Canadian-born group. For the immigrant group, the mean annual wage is $62,200 for the males and $50,000 for the females. On average, Canadian-born workers earn between 4% and 5% more than immigrant workers. Wage gaps also exist between males and females. Interestingly, the gender wage gap is larger within the Canadian-born group than within the immigrant group.

The education statistics show that immigrants do better in attaining a higher degree. There are 67% of the Canadian-born males and 63% of the Canadian-born females that have high school or college degrees. In contrast, only 50% of immigrant males and 53% of immigrant females have high school or college degrees. This is because 19% of immigrant males and 15% of immigrant females received a post-graduate degree, compared to only 7% of the Canadian-born males and 10% of Canadian-born females with such a degree.

Regarding the age variable, the average age of the females is slightly higher than that of the males and immigrants are older than the Canadian-born. With respect to immigrant group, the number of years since migration of females and males are about the same.

Looking at the presence of children, Canadian-born individuals are more likely to have no children (25% for males and 27% for females) than immigrant individuals (19% for males and 20% for females). However, the probability of having a child aged over 25 years old living at home is higher for the immigrant people than for the Canadian-born people.

The geographic variables indicate that more than half of the immigrants live in Ontario, with 58% of the males and 60% of the females living in that province, compared to 38% of the Canadian-born males and 40% of the Canadian-born females. Immigrants are less likely than the Canadian-born to live in Quebec, Manitoba, Saskatchewan and Alberta. As shown by the mother

tongue variables, English is still the mainstream in Canada. English is the mother tongue for most Canadian-born, while French is the mother tongue for around 30% of the Canadian-born. More than half of the immigrants do not have one of the two official languages as their mother tongue. However, the number of individuals who speak English is greater than the number of those who speak French.

When combining the immigrant status with visible minority status, the statistics imply that the non-visible minorities still account for the largest proportion among the immigrants. However, immigrants belonging to the South Asian and Chinese visible minorities account for the largest proportions among the visible minorities, with 22% of the males being of South Asian origin and 19% of the females being Chinese. For the immigrants originating from the Philippines, the proportion of females is 4 percentage points higher than that of males. This is because many Filipina females come as maids before becoming immigrants in Canada. Finally, among the individuals who were born Canada, visible minorities only account for very small percentage.

3.4. Summary statistics for all workers

The summary statistics are quite similar to those of the full-time full-year workers. Female workers earn less than male workers and immigrant workers earn less than Canadian-born workers. Specifically, the average annual wage for Canadian-born females is $44,100 and for Canadian-born males is $59,200. The gender wage gap within the Canadian-born group is $15,000. The average annual wage for immigrant females is $41,200 and for immigrant males it is $54,800. The gender wage gap within the immigrant group is $13,600. When including all the workers, the gender wage gap becomes larger than that of the first sample. For the Canadian-born males, the average annual wage is 8% larger than that of the immigrant males, and for the

Canadian-born females, the average annual wage is 7% larger than that of the immigrant females. The gap between immigrant and Canadian-born workers also becomes larger compared to the first sample.

We also see that 18% of the females work part-time compared to only 5% of the males within the Canadian-born group. For the immigrant group, 17% of the females work part-time, compared to only 6% of the males. Furthermore, Canadian-born females worked one week less than Canadian-born males and immigrant females worked one week less than immigrant males in 2010.

4. Econometric model

This section provides an overview of the econometric models estimated in the paper. The statistical framework is the ordinary least square regression (OLS). The econometric models, which are estimated for Canadian-born and immigrants and for males and females separately, take the following forms.

4.1. Full-time full-year workers

$$ln(wage)_i = \beta_0 + \beta_1 YSM_i + \beta_2 YSM2_i + \beta_3 age_i + \beta_4 age2_i + \beta_5 single_i + \beta_6 province_i + \beta_7 kids_i + \beta_8 education_i + \beta_9 mother\ tongue_i + \beta_{10} visible_i + \varepsilon_i \quad (1)$$

where '$ln(wage)_i$' is the natural logarithm of the annual wage of individual i; 'YSM_i' is included only for the immigrants and equals 2011 minus the year in which an immigrant first obtained his or her landed immigrant/permanent resident status; '$single_i$' is a binary variable for individual who are not married; '$province_i$' is a set of dummy variables for province of usual residence, with Ontario as the base group; '$kids_i$' is a set of dummy variables for the number of kids in different age ranges in census family, with individuals who have no kids being used as

base group; '$education_i$' measures the individual's highest educational attainment, with high school diploma as base group; '$mother\ tongue_i$' is the first language learned by the individual in childhood, it is divided into English, French and non-official languages, with English as base group; '$visible_i$' is a set of dummy variables for the immigrant and non-immigrant who belong to various ethnic groups respectively, with non-visible minority being taken as the base group.

4.2. Part-time and full-time workers

$$ln(wage)_i = \beta_0 + \beta_1 YSM_i + \beta_2 YSM2_i + \beta_3 age_i + \beta_4 age2_i + \beta_5 single_i + \beta_6 province_i + \beta_7 kids_i + \beta_8 education_i + \beta_9 mother\ tongue_i + \beta_{10} visible_i + \beta_{11} weeksworked_i + \beta_{12} parttime_i + \varepsilon_i \quad (2)$$

In the second model, the variables are the same as in the first model, with the addition of two other independent variables, 'weeks worked' and 'part-time'. '$weeksworked_i$' measures the number of weeks worked in 2010 and '$parttime_i$' is a dummy variable taking the value of one for individuals who worked mainly part-time in 2010 and the value of zero otherwise.

4.3. Oaxaca decomposition

In addition to the above analysis, the Oaxaca decomposition technique is employed to examine the gender wage gaps among visible minorities and non-visible minorities respectively. The wage gap is decomposed into an explained part and unexplained part. The regression for males and females are first estimated.

Regression for males: $ln(wage_i^m) = X_i^m \beta^m + \varepsilon_i^m$ (3)

Regression for females: $ln(wage_i^f) = X_i^f \beta^f + \varepsilon_i^f$ (4)

where $ln(wage_i^m)$ and $ln(wage_i^f)$ are the natural logarithms of the annual wage of individual i for males and females respectively, X_i^m and X_i^f are the corresponding characteristic vectors of

individual i, and ε_i^m and ε_i^f are the error terms. The Oaxaca decomposition of the average logarithmic annual wage gap between males and females takes the following form:

$$\overline{\ln(wage^m)} - \overline{\ln(wage^f)} = \left(\overline{X^m} - \overline{X^f}\right)\beta^m + \overline{X^f}(\beta^m - \beta^f) \quad (5)$$

where the bar signs over variables indicate the mean values. The first part of the right-hand-side represents the gender wage gap due to different productivity-related characteristics. The second part of the right-hand-side represents the gender wage gap due to different coefficients, which is conventionally called labour market discrimination.

5. Empirical results

5.1. Regression results for full-time full-year workers

5.1.1. Wage gaps among Canadian-born workers

As shown in Table 4, among Canadian-born workers, the annual wage for male workers who do not have a degree or diploma is 16% less than the wage of those who have a high school degree. Male workers with college degree, bachelor degree and post-graduate degree earn 14%, 37% and 44% more than male workers with high school degree respectively. For female workers, the wage differences among different educational attainments are similar to those of male workers. However, the return to higher education on wage is higher for female workers than for male workers. For example, female workers with bachelor degree and post-graduate degree earn 50% and 61% more than those with high school degree.

The impacts of marital status differ between males and females. On average, single males earn 15% less than those males who are in relationship or were in relationship. However, for females, the wage disadvantage for single females is only 2.3%, which means the marital status is not a major factor in the explanation of the wage differences within the female group.

In terms of age variables, older workers are more likely to have higher wages. Although age square is statistically significant, the negative coefficients are very small for both males and females, which implies that age has a decreasing positive effect on wage.

The presence of children in the census family shows different impacts on wage between males and females. Male workers who have children aged between 0 and 24 earn between 3% and 6% more than those who do not have a child. However, male workers with children at home over 25 years old earn 11.3% less than those without child. In contrast, the presence of children gives female workers at least a 2% negative effect on wages. Female workers tend to spend more time taking care of their new-born babies, which results in 9.9% wage gap in relative to those who do not have a child. However, there is no significant wage difference between female workers with children aged 6 to 14 and female workers without children.

For the geographic variables, both male and female workers in Quebec earn around 16% less than those living in Ontario. Female workers who live in British Columbia earn 4.9% less than those who live in Ontario. However, there is no significant wage difference for male workers in British Columbia compared to those in Ontario. In addition, male and female workers who live in Manitoba, Saskatchewan or Alberta have 7.8% and 3.2% higher wages respectively than the base group workers.

People who speak French as mother tongue do not have significant wage difference compared to those who speak English as mother tongue. People who speak neither French nor English have a small wage disadvantage.

With respect to the ethnicity variables which are the main focus of this study, for both males and females, the non-immigrant South Asian, Chinese and Filipino visible minorities show statistically insignificant wage gaps relative to the Canadian-born non-visible minority workers.

As it was noted earlier, those visible minorities are a very small proportion of the population. However, Canadian-born non-immigrant black males earn 10.2% less than non-immigrant non-visible minority males, while non-immigrant black females earn 4.4% less than non-visible minority Canadian-born counterparts (with a significant coefficient at the 10% level).

5.1.2. Wage gaps among immigrants

As the last two columns of Table 4 show, higher educational attainments result in higher wages for both male and female immigrants. This fact is consistent with what was found for the Canadian-born workers. The results also reveal that the return to schooling is greater for females than for males, but that the differences between females and males are smaller than in the Canadian-born sample. For instance, female workers with bachelor degree and post-graduate degree have 42% and 54% higher wages respectively than female workers with high school degree. For male workers, the similar numbers are 40% and 50%. For those with university education, the differences in return between the genders are smaller for the immigrants than for the non-immigrants.

The effect of age is similar to the one for the Canadian-born and the coefficients of age square are negative but small. The 'years since immigration' variable is meaningful for immigrants. The wages increase initially by 2% for males and females but the rate decreases with time as indicated by the coefficient of the square of that variable. Looking at the impacts of marital status on wages, single male workers earn 9% less than the non-single ones but the wage difference for females is not significant. This is similar to the result for the Canadian-born. The presence of children coefficients do not have a consistent pattern: some are significant for males, but insignificant for females, and vice versa. Males with children aged 0 to 5 have a 7% wage increase in comparison to those males without children. However, there is no significant wage

difference for males with children aged over 15 and for females with children aged 0 to 14 compared to the base group. Female workers who have children aged 15 to 24 earn 3% less than those without children.

In terms of the geographic variables, immigrant males and females who live in Quebec earn 21% and 17% less than Ontario male and female workers respectively. The labour market in British Columbia is also worse than the one in Ontario for female immigrants, which gives them 8% lower wages. Immigrants who live in Manitoba, Saskatchewan or Alberta have 11% and 4% higher wages than those who live in Ontario for males and females respectively. Regarding language, immigrants whose mother tongues are neither French nor English receive 9% lower wages than whose mother language is English.

Finally, with respect to ethnicity status, all the coefficients are significant at the 10% confidence level or less. This result is quite different from the one for Canadian-born visible minorities. Immigrant visible minorities earn a lot less than immigrants who do not belong to a visible minority. Specifically, the wage disparity for Chinese immigrants is lower than that of the other visible minorities. Chinese male workers earn 12% less than male non-visible minority and Chinese female workers earn only 3% less than their non-visible minority counterparts. The largest visible minority wage gap is for the Filipino males, with a wage disadvantage of 24%. The largest female wage gap is for the South Asian, with a wage disadvantage of 12%. Overall, female visible minorities show better relative labour market performance than male visible minorities. This is reflected by larger wage coefficients for males than for females.

To sum up, the education variable and age variables have positive effect on wages. In other word, the return to work experience is higher for females than for males (As is described in data section before, educational attainment and age can be the good indicator of work experience).

Generally, having children has negative effect on wages for females. Individuals who live in Quebec earn less than individuals who live in Ontario. However, there are higher wages in Manitoba, Saskatchewan and Alberta than in Ontario. Moreover, non-official language mother tongues decrease wages. Finally, although visible minorities do not play important roles in explaining the wage difference within the Canadian-born group, they show much greater wage disadvantages compared to non-visible minority workers within the immigrants.

5.2. Regression results for all workers (full-time and part-time workers)

5.2.1. Wage gaps among Canadian-born workers

As is shown in Table 5, the regression results for all workers are very close to those for full-time full-year workers with respect to the signs of the coefficients. Male workers with college degree, bachelor degree and post-graduate degree earn respectively 14%, 36% and 42% more than those with a high school degree. Although female workers without degree earn much less compared to female workers with high school degree than male workers without degree compared to male workers with high school degree, female workers with college degree, bachelor degree and post-graduate degree earn respectively 17%, 50% and 62% more than those with high school degree. The return to education on wages is still higher for females than for males.

In terms of the demographic variables, single male workers earn 16% less than non-single male workers. For female workers, there is only a 3% wage difference. Similarly to the first sample, wages increase by 6% and 7% with additional one year of age for males and females respectively. Male workers who have children aged 0 to 24, earn between 3% and 7% more than those who do not have children. In contrast, the presence of children decreases the wages of female workers.

The results suggest that males who work part-time earn 97% less than those who work full-time. Females who work part-time earn 76% less than those who work full-time. An additional week of work increases the wage by 2.5% for males and by 2.8% for females.

Considering geographic variables, workers in Quebec and British Columbia still show lower wages than those in Ontario for both males and females. As for male workers in Manitoba, Saskatchewan and Alberta, they earn 11% more than those in Ontario. Besides, female workers also have 5% wage advantage in these three provinces relative to Ontario.

The French mother tongue variable is statistically significant under all workers' situation. It provides 2% and 3% wage advantages for males and female workers respectively. Male workers who do not have an official Canadian language as mother tongue earn 3% less than Anglophones. However, there is no significant difference between female workers who take English as mother tongue and female workers who take neither French nor English as mother tongue.

As was the case for the first sample, many visible minority coefficients are not significant, indicating that ethnicity is not a major factor of the wage gap. Specifically, Canadian-born Chinese earn 4% more than Canadian-born non-visible minority, a result significant at the 10% level. However, there is an exception for the Canadian-born black males who earn 5% less than Canadian-born non-visible minority (a result significant at the 5% level). This result for Blacks is similar to the one found in the full-time full-year sample.

5.2.2. Wage gaps among immigrant workers

As shown in last two columns in Table 5, the patterns of returns to education are similar to those of the previous sample. Higher educational attainment leads to higher wages for both males and females. The higher return to education for females than for males among immigrants is not

as significant as it was among Canadian-born. Male workers with bachelor degree and post-graduate degree earn 34% and 45% more than those with a high school degree while female workers with bachelor degree and post-graduate degree earn respectively 40% and 50% more than those with high school degree.

In terms of the demographic variables, single male workers earn 12% less than non-single male workers. For the female workers, the marital status has almost no impact on the wage difference. With one additional year of age, the wages increase by around 4% for both male and female workers. Despite the coefficients of age square being negative, the magnitudes are close to zero. The age has a decreasing positive effect on wage. Male workers who have children aged 0 to 5 earn 6% more than those without children. However, the results of having children aged over 5 are not statistically significant for males any more. Having children aged between 0 and 24 decreases female workers' wage by 3% to 4%. For the immigration variable 'years since migration, with one additional year of immigration, the wages increase by 2% for male workers and by 3% for female workers. Although the coefficients of years since immigration square are negative, the magnitudes are close to zero. Similarly to the age variable, the years since immigration have decreasing positive effect on wages.

For the geographic variables, workers in Quebec earn 20% and 16% less than workers in Ontario for males and females respectively. The wage difference among immigrants is larger than the wage difference among the Canadian-born with respect to Quebec. Similarly to the previous results, workers in Manitoba, Saskatchewan and Alberta earn more than those in Ontario. Immigrants who have neither French nor English as mother tongue earn 9% and 5% less than Anglophones for male and female workers respectively.

For working status variables, part-time workers earn 89% and 72% less than full-time workers for males and females respectively. This kind of wage gap is larger within the Canadian-born group than within the immigrant group. With one additional week worked, the wages increase by 2.8% for both males and females.

Finally, in terms of my main focus on ethnicity, the coefficients of the visible minority variables reveal substantial wage disadvantages for the visible minorities, especially for Filipino males, who have 20% lower wages than immigrant non-visible minority. On average, South Asian, Chinese and Black males earn 14% to 16% less than immigrant non-visible minority. For females, the wage difference shrinks a lot, since the wage disadvantages are 11%, 6% and 3% respectively for those who are South Asian, Chinese and Filipino. Besides, the statistic for black females is not significant, which means there is no obvious wage difference between immigrant black females and immigrant non-visible minority females.

To sum up, most results shows the same signs as in previous results for full-time full-year workers. Both education and age have positive effects on wages. In addition, adding a part-time dummy variable leads to substantial negative effects on wages for both Canadian-born and immigrant male and female workers. Specifically, the wage gap between part-time and full-time working status for males and females is larger among the Canadian-born group than among the immigrant group. Moreover, the return to weeks worked is almost the same for both Canadian-born and immigrants. Again, ethnicity is not a major factor in explaining the wage gap within the Canadian-born group. For instance, the Canadian-born Chinese males show little wage disadvantage. However, there is greater wage disparity among immigrants. Chinese males perform even worse than South Asian males and black males within the immigrant group. Ethnic wage gaps are much smaller among female immigrants than among male immigrants. For

instance, visible minorities earn 3% to 11% less than non-visible minority for female immigrants while visible minorities earn 14% to 20% less than non-visible minority for male immigrants.

5.3. Regression results for some specific visible minorities

I now focus on the two most important visible minority groups, the Chinese and the South Asians.

5.3.1. Wage gap among full-time full-year Chinese and South Asian workers

As shown in Table 6, Chinese workers without degree earn 14% and 27% less than those with high school degree for males and females respectively. The college degree, the bachelor degree and the post-graduate degree increase wages respectively by 23%, 47% and 62% for male workers. For the female workers, the higher education gives larger wages increases than for male workers. Table 7 shows the regression results of South Asian workers. For South Asian males, the returns to bachelor degree and post-graduate degree are 41% and 43% more than those of high school degree. Although this fact also suggests that higher educational attainment will increase wages, the increase is not as important as the one for the Chinese workers. Besides, for South Asian females, the bachelor degree increases wages by 40% compared to high school degree and this return to education is very close to the return to bachelor degree for South Asian males. Furthermore, there is no big wage difference between bachelor degree and post-graduate degree with respect to South Asian workers.

In terms of immigration status, Chinese immigrant males and females earn about 56% to 60% less than Canadian-born Chinese at the time they enter Canada. South Asian immigrants also show a wage disadvantage compared to Canadian-born South Asian, of 38% and 53% for males and females respectively. The number of years since immigration still has a decreasing positive effect on wages.

Considering the demographic variables, marital status has greater negative impact on males' wages than on females' wages for both Chinese and South Asians. The return to age is a little bit higher among South Asian workers than among the Chinese workers. The presence of children results in different wage patterns among the Chinese and South Asians. Within the Chinese group, male workers who have children under 15 have a wage advantage between 5% and 9% in comparison to those who do not have children. However, having children over 15 decreases their wages. For the females, the presence of children has a negative effect on wages except for females with children aged 6 to 14 where the coefficient is not significant. Within the South Asian group, male workers with children aged 0 to 5 will have 8% higher wages. However, having children aged 6 to 14 decreases wage by 4% for males. For South Asian females, only the coefficient for having children aged 15 to 24 is significant.

With respect to geographic variables, both Chinese workers and South Asian workers in Quebec earn 20% to 24% less than those in Ontario. In contrast, Manitoba, Saskatchewan and Alberta still have higher wage level for both Chinese and South Asian. Moreover, males in these three provinces have higher increases on wages than females. The coefficient estimates of British Columbia for Chinese and South Asian males are not significant. Besides, the wage difference for Chinese females who work in British Columbia is larger for South Asian females who work in British Columbia.

To sum up, most results of education and age variables are consistent with previous two samples except for South Asian females with a bachelor degree. Generally, the return to education is higher for female workers than for male workers. Moreover, the largest wage inequality is between immigrants and non-immigrants who belong to the Chinese and South Asian visible minorities. In other word, the immigration status is the main factor that contributes

to the wage gap within visible minority group. Additionally, the presence of children decreases wages for female workers. However, the effects of children on male workers' wages depend on age ranges. Visible minority males with new-born babies still have wage advantages. This is consistent with previous two sample results: full-time full-year workers and all workers.

5.3.2. Wage gap among all Chinese and South Asian workers (full-time and part-time)

Table 7 illustrates the regression results for Chinese and South Asian workers respectively. The majority of the signs of the coefficients are the same as those of the full-time full-year workers. However, the magnitudes change. In particular, the returns to education for both male and female workers decrease when adding part-time workers into the sample. For Chinese workers, the returns to higher educational attainments are still greater than for South Asian workers. The wage gaps between immigrants and non-immigrants become larger for both Chinese workers and South Asian workers.

The regression results of the working status variables show that Chinese males who work part-time earn much less than full-time workers. The wage gap between part-time and full-time for Chinese female workers is 78%. Looking at the results for South Asian workers, working part-time decreases wage by 83% and 70% for males and females respectively.

To sum up, adding part-time workers into the sample, the higher return to education for females than for males is more significant than in the full-time full-year sample among South Asian workers. The wage gap in terms of immigration status becomes larger when adding part-time workers. There is substantial wage disadvantage for working in part-time. As a whole, most of the empirical results are reasonable and consistent with previous researches.

6. Oaxaca decompositions of gender wage gap

In order to investigate the effects of the chosen variables on wage variation, the Oaxaca decomposition technique described above is carried out to separate the gender wage gap for full-time full-year workers and all workers into an explained part and an unexplained part. Table 8 illustrates the decomposition results of the gender wage gap for Canadian-born and immigrants separately. The effects of the variables in the regression are grouped into categories. Specifically, immigrant status, ethnic status and years since immigration are combined as 'immvis'. Age and marital status are combined as 'demographic'. Educational attainments are combined as 'education'. The presence of children is defined as 'kids'. Provinces are combined as 'geographic'. Three kinds of mother tongues are combined as 'language'. In particular, for all workers, part-time work and weeks worked variables are combined as 'work'. A positive sign of the result indicates that the variable is to the advantage of males, and a negative sign indicates an advantage for females. Additionally, as mentioned before, the explained part indicates that the gender wage gap in the mean values of the productivity-related characteristics, while the unexplained part indicates the differences with respect to coefficients, which is sometimes interpreted as discrimination.

6.1. Decomposition of gender wage gap- full-time full-year workers

The first sample only includes full-time full-year workers. Starting with Canadian-born group, the gender log wage difference is 22.2% in favour of male workers. The explained parts account for -2.3% of the total difference and the unexplained parts accounts for 24.3% of the total difference. Since the proportions of visible minorities within Canadian-born group are small, the immigration and visible minority variables cannot explain the wage gaps among males and females. The demographic variables, such as age and marital status, only explain -0.4% of the wage difference, the minus sign indicating an advantage to female workers. The presence of

children can explain 0.2% of the difference. The positive sign means that male workers have an advantage with respect to the presence of children. The difference in educational attainments explains -2.4% of the gap, meaning that education is favorable for female workers. The geographic variables can explain 0.3% of the wage gap while the language variables do not have important effect on explaining the wage difference.

Differences in regression coefficients explain more than the entire wage gap. First, the differences in the coefficient of immigration and visible minority can explain -0.1%, which still has insignificant effect on wage gap. The demographic variables can explain -24.1% of the wage gap, with the negative sign indicating an advantage for females. The presence of children and the geographic variables in the unexplained parts have larger advantage to male workers than in the explained parts while the education variables in the unexplained part have larger advantage to female workers than in the explained parts. Although some variables are in favour of females, the possible advantage to females are offset by the larger constant term, which represents some unknown effect.

For the immigrants, the explained parts and unexplained parts are almost the same as those of the Canadian-born. For the differences in productivity-related characteristics, the differences in the visible minority composition within the immigrant group can explain 0.1% of the wage gap while -0.8% of the wage difference is due to differences in coefficients. The negative numbers for education in both the explained parts and the unexplained parts reveal that female workers have an advantage with regard to the return to schooling. However, the advantage is again cleared by the large effect of the constant term.

6.2. Decomposition of gender wage gap- all workers

When adding part-time workers, there are some changes in both explained part and unexplained part. Particularly, the working status shows positive sign in the explained part for Canadian-born and immigrant, indicating that males work longer hours than females. However, it shows a negative sign in the unexplained parts for the Canadian-born and the immigrants. There is a 14.8% wage gap that can be explained by productivity-related characteristics while -11.4% of the wage gap is unexplained with respect to working status. The education variables have similar effects as in the full-time full-year sample in both the explained parts and the unexplained parts. The differences in the constant terms again play an important role and are greater than they were in full-time full-year sample, which results in larger gender wage gap than first sample.

6.3. Decomposition of gender wage gap- Chinese workers and South Asian workers

As shown in Table 9, the statistics among Chinese and South Asians are quite similar. The total gender wage gap for the Chinese group is 22.2% for full-time full-year workers and it is 33.3% for all workers. The total gender wage gap for South Asian group is 22.1% for full-time full-year workers and it is 33.3% for all workers. The unexplained parts account for larger wage gaps, which are in favour of male workers. The immigration variables, such as immigration status and years since immigration, explain -0.2% wage gap within both the Chinese and South Asian groups. However, with regard to difference in coefficients, the immigration variables are more to the advantage of female workers than in the explained parts. There is also a greater increase in the absolute value of the demographic variables from the explained parts than from the unexplained parts. Since the sign is negative, the labour market discrimination with respect to demographic variables is unfavorable for male workers. There is a slight difference between the coefficients of the Chinese and South Asian workers in the full-time full-year sample in terms of

educational attainment. The education variables can explain -2.6% wage gap for Chinese workers and -2.5% wage gap for South Asian workers. Moreover, the difference in the coefficients of educational attainment contributes to the unexplained gap in both samples. Interestingly, the presence of children provides an advantage to males but it shows a slight advantage to females for both Chinese and South Asians in the all workers sample.

For the all workers sample, work status explains 14.7% of the wage gap while there is -12.2% wage difference with respect to work status that is due to labour market discrimination. Again, the constant term is larger in the all workers sample than in the full-time full-year sample.

7. Conclusion

This paper has examined the gender wage gap between Canadian-born and immigrant workers in relation to their visible minority status. The data set was drawn from the 2011 NHS. This analysis was restricted to employed working-age individuals. I used two samples. The first one includes only for full-time full-year worker, while the second one includes both full-time and part-time workers. To further investigate the gender wage gaps, I applied the Oaxaca decomposition methodology. The main empirical results can be summarized as follows.

First, the wage gap with respect to education is largely due to labour market discrimination. The return to education is greater for females than for males. However, the higher return for female workers among immigrants is not as large as it is among the Canadian-born.

Second, having children does have a negative effect on female workers' wages, especially for those with pre-school children. However, male workers with younger children tend to earn more than those with older children. The gender wage gap is more convincingly explained by difference in coefficients. Besides, the demographic factors, such as age and marital status, also

influence the wage gap. Age is supposed to have decreasing positive effect on wages. In terms of the two visible minority groups studied specifically, the return to age is higher for the South Asians than for the Chinese. The marital status of male workers has greater impact on wages than that of females. On average, the wage gap among Canadian-born males is bigger than the wage gap among immigrants with respect to marital status. The demographic impacts on the wage gap are more likely caused by market discrimination.

Third, for both Canadian-born and immigrants, workers who live in Quebec earn less than workers who live in Ontario. On the contrary, workers in Manitoba, Saskatchewan and Alberta earn more than those in Ontario. Furthermore, the wage advantage is greater for the immigrants than for the Canadian-born in these three provinces. Although there is no important wage gap between the workers who have French as mother tongue and those who have English as mother tongue, male workers who have neither French nor English usually earn less.

Fourth, for the all workers sample, working part-time provides a higher wage disadvantage for male workers than for female workers. The wage gap for working part-time among immigrants is smaller than the wage gap among Canadian-born.

Specifically for the visible minority groups, the main findings are as follows. First, visible minority status is not a major issue that has impact on wages within the Canadian-born group. Within the immigrant group, there exists wage disparity. Filipino males and South Asian females suffer the greatest wage inequality. For the two specific visible minority groups, the Chinese and the South Asians, the gender wage gap is also largely due to potential market discrimination with respect to demographic factors.

Second, the higher return to education for female workers than for male workers among the South Asian is not as significant as it is among the Chinese. In terms of the demographic factors,

South Asian workers have higher return to age than Chinese workers and the male-female wage gap among the South Asian workers is larger than it is among the Chinese workers with respect to the age variable. Similarly to the previous two samples, the presence of children within the Chinese and South Asian groups still provides negative effects on female wages. Furthermore, this wage disparity is largely due to labour market discrimination. For the all workers sample, the working status factor shows a greater advantage to male than to female workers since males work longer hours. Moreover, working part-time has greater negative effect on the Chinese visible minority than on the South Asian visible minority. The immigrant status provides large wage inequality both within the Chinese and the South Asian groups.

Finally, from the Oaxaca decomposition results, the unexplained parts play the major roles in the gender wage gaps. Additionally, the unexplained parts are largely due to the large constant term, which represents some unknown or omitted factors.

To sum up, immigrants and members of visible minority encounter barriers in attaining high wages. Given today's ethnic composition of Canada, wage inequality is an increasingly important issue that needs to be explored. Generally speaking, how immigrants or members of visible minorities acculturate and assimilate into Canadian society has a central impact on their living standards. The more years they stay in Canada, the higher the wage they can attain because they can obtain more language skills and experience in the labour market. The results of this study are generally consistent with those in the literature.

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Table 1 Educational attainment groups	
Variables	**Highest certificate, diploma or degree as reported in the codebook**
No degree	No certificate, diploma or degree
High school diploma (base group)	High school diploma or equivalent
College diploma	Trades certificate or diploma (or other than apprenticeship)
	College, CEGEP or other non-university certificate or diploma from a program of 3 months to less than 1 year
	College, CEGEP or other non-university certificate or diploma from a program of 1 year to 2 years
	College, CEGEP or other non-university certificate or diploma from a program of more than 2 years
	University certificate or diploma below bachelor level
Bachelor's degree	Bachelor's degree
Post-graduate degree	University certificate or diploma above bachelor level
	Degree in medicine, dentistry, veterinary medicine or optometry
	Master's degree
	Earned doctorate degree

Table 2: Comparison of some common characteristics between Canadian-born and immigrant (full-time full-year sample)

Variables	Canadian-born		Immigrant	
	Male	Female	Male	Female
Annual wages	65,099	52,490	62,211	49,992
Ln annual wages	10.938	10.715	10.865	10.649
No degree	0.094	0.057	0.082	0.070
High school degree	0.232	0.222	0.178	0.184
College degree	0.437	0.409	0.323	0.343
Bachelor degree	0.163	0.213	0.222	0.249
Post-graduate degree	0.072	0.095	0.190	0.148
Single	0.195	0.191	0.117	0.136
Age	42.902	43.290	45.227	45.239
Years since immigration	---	---	21.436	22.212
No kid	0.253	0.272	0.186	0.196
Kids 0-5	0.176	0.116	0.195	0.116
Kids 6-14	0.221	0.214	0.279	0.256
Kids 15-24	0.215	0.253	0.295	0.332
Kids over 25	0.085	0.081	0.141	0.161
Quebec	0.290	0.304	0.118	0.107
Ontario	0.379	0.389	0.580	0.603
British Columbia	0.119	0.110	0.163	0.164
Mother tongue-English	0.665	0.646	0.276	0.291
Mother tongue-French	0.292	0.306	0.040	0.034
Mother tongue-nonofficial	0.044	0.049	0.685	0.676
South Asian	0.007	0.009	0.224	0.182
Chinese	0.010	0.009	0.180	0.191
Black	0.006	0.007	0.090	0.099
Filipino	0.002	0.002	0.083	0.125
Non-visible minority	0.974	0.973	0.423	0.403
Observations	73,286	63,321	17,847	15,334

Notes: all these observations are restricted to paid employees 25 to 64 years old in 2010. The statistics show the weighted mean.

Table 3: Comparison of some common characteristics between Canadian-born and immigrant (all workers sample)

Variables	Canadian-born		Immigrant	
	Male	Female	Male	Female
Annual wages	59,201	44,124	54,775	41,219
Ln annual wages	10.769	10.430	10.651	10.337
No degree	0.104	0.263	0.091	0.078
High school degree	0.233	0.144	0.183	0.188
College degree	0.439	0.223	0.322	0.347
Bachelor degree	0.152	0.244	0.214	0.234
Post-graduate degree	0.069	0.083	0.183	0.146
Single	0.218	0.185	0.129	0.131
Age	42.707	43.161	44.947	44.766
Years since immigration	---	---	20.557	21.209
Part-time	0.053	0.182	0.060	0.171
Weeks worked	46.379	45.393	45.689	44.434
No kid	0.255	0.263	0.189	0.191
Kids 0-5	0.168	0.144	0.191	0.140
Kids 6-14	0.207	0.223	0.273	0.262
Kids 15-24	0.204	0.244	0.285	0.319
Kids over 25	0.096	0.083	0.144	0.156
Quebec	0.307	0.307	0.125	0.115
Ontario	0.362	0.372	0.559	0.568
British Columbia	0.123	0.122	0.172	0.184
Manitoba&Saskatchewan&Alberta	0.208	0.199	0.144	0.134
Mother tongue-English	0.651	0.645	0.264	0.278
Mother tongue-French	0.308	0.309	0.042	0.037
Mother tongue-nonofficial	0.042	0.048	0.461	0.686
South Asian	0.007	0.008	0.229	0.190
Chinese	0.010	0.009	0.181	0.188
Black	0.007	0.008	0.094	0.100
Filipino	0.003	0.002	0.092	0.128
Non-visible minority	0.973	0.973	0.404	0.393
Observations	102,215	103,810	26,259	26,417

Notes: all these observations are restricted to paid employees 25 to 64 years old in 2010. The statistics show the weighted mean.

Table 4: OLS regression results-Full-time full-year workers

Variables	Canadian-born		Immigrant	
	Male	Female	Male	Female
A. Education (Base group: high school degree)				
No degree	-0.164(0.008)***	-0.244(0.010)***	-0.118(0.019)***	-0.252(0.021)***
College degree	0.136(0.005)***	0.143(0.006)***	0.166(0.013)***	0.168(0.014)***
Bachelor degree	0.374(0.007)***	0.498(0.007)***	0.395(0.014)***	0.418(0.015)***
Post-graduate degree	0.438(0.009)***	0.613(0.008)***	0.496(0.015)***	0.537(0.017)***
B. Marital status (Base group: married or was married before or in relationship)				
Single	-0.152(0.006)***	-0.023(0.009)***	-0.091(0.017)***	0.015(0.016)
C. Age				
Age	0.064(0.002)***	0.072(0.002)***	0.045(0.004)***	0.049(0.005)***
Age square×1000	-0.648(0.022)***	-0.701(0.024)***	-0.469(0.049)***	-0.515(0.054)***
D. Immigration				
Years since immigration	---	---	0.018(0.001)***	0.021(0.001)***
Years since immigration square×1000	---	---	-0.183(0.022)***	-0.247(0.024)***
E. Presence of children (Base group: no_kid)				
Kids 0-5	0.051(0.006)***	-0.099(0.007)***	0.067(0.013)***	-0.024(0.017)
Kids 6-14	0.030(0.005)***	-0.001(0.006)	0.019(0.011)*	-0.010(0.012)
Kids 15-24	0.058(0.005)***	-0.017(0.005)***	0.006(0.010)	-0.034(0.011)***
Kids over 25	-0.113(0.008)***	-0.062(0.008)***	-0.016(0.014)	-0.024(0.014)*
F. Province (Base group: Ontario)				
Quebec	-0.160(0.009)***	-0.162(0.009)***	-0.208(0.016)***	-0.173(0.017)***
British Columbia	0.007(0.007)	-0.049(0.007)***	-0.011(0.013)	-0.076(0.014)***
Manitoba&Saskatchewan&Alberta	0.078(0.006)***	0.032(0.006)***	0.109(0.014)***	0.035(0.015)**
G. Language (Base group: English)				
Mother tongue-French	0.008(0.009)	0.001(0.009)	0.021(0.027)	0.013(0.030)
Mother tongue-nonofficial	-0.028(0.010)***	-0.007(0.043)***	-0.092(0.011)***	-0.088(0.012)***
H. Visible minority (Base group: non-visible minority)				
South Asian	-0.002(0.025)	0.003(0.024)	-0.135(0.013)***	-0.119(0.014)***
Chinese	0.015(0.020)	0.026(0.023)	-0.118(0.014)***	-0.027(0.015)*
Black	-0.102(0.026)***	-0.044(0.026)*	-0.172(0.017)***	-0.072(0.018)***
Filipino	-0.045(0.041)	-0.013(0.046)	-0.237(0.018)***	-0.111(0.017)***
Constant	9.360(0.039)***	8.882(0.043)***	9.532(0.097)***	9.159(0.104)***
R-squared	0.169	0.195	0.168	0.172
Observations	73,286	63,321	17,847	15,334

Notes: All these observations are restricted to paid employees 25 to 64 years of age. Standard errors are in brackets. *significant at 10% level; **significant at 5% level; ***significant at 1% level.

Table 5: OLS regression results-All workers (full-time and part-time workers)

Variables	Canadian-born		Immigrant	
	Male	Female	Male	Female
A. Education (Base group: high school degree)				
No degree	-0.143(0.007)***	-0.226(0.009)***	-0.102(0.017)***	-0.197(0.018)***
College degree	0.144(0.005)***	0.165(0.005)***	0.151(0.012)***	0.170(0.012)***
Bachelor degree	0.356(0.006)***	0.503(0.006)***	0.343(0.013)***	0.395(0.013)***
Post-graduate degree	0.420(0.008)***	0.618(0.008)***	0.447(0.014)***	0.497(0.015)***
B. Marital status (Base group: married or was married before or in relationship)				
Single	-0.158(0.006)***	-0.030(0.006)***	-0.118(0.015)***	-0.005(0.014)
C. Age				
Age	0.063(0.002)***	0.072(0.002)***	0.039(0.004)***	0.044(0.004)***
Age square×1000	-0.640(0.020)***	-0.713(0.021)***	-0.421(0.044)***	-0.462(0.046)***
D. Immigration				
Years since immigration	---	---	0.023(0.001)***	0.026(0.001)***
Years since immigration square×1000	---	---	-0.281(0.020)***	-0.322(0.021)***
E. Working status (Base group: full-time)				
Part-time	-0.973(0.009)***	-0.756(0.005)***	-0.890(0.018)***	-0.718(0.011)***
Weeks worked	0.025(0.000)***	0.028(0.000)***	0.028(0.000)***	0.028(0.000)***
F. Presence of children (Base group: no_kid)				
Kids 0-5	0.057(0.006)***	-0.062(0.007)***	0.062(0.012)***	-0.027(0.014)*
Kids 6-14	0.034(0.005)***	-0.013(0.005)**	0.016(0.010)	-0.035(0.011)***
Kids 15-24	0.066(0.005)***	-0.016(0.005)**	0.009(0.010)	-0.024(0.010)**
Kids over 25	-0.113(0.007)***	-0.063(0.008)***	-0.005(0.013)	-0.017(0.013)
G. Province (Base group: Ontario)				
Quebec	-0.142(0.009)***	-0.145(0.009)***	-0.201(0.014)***	-0.160(0.015)***
British Columbia	-0.142(0.006)***	-0.024(0.007)***	0.002(0.012)	-0.041(0.012)***
Manitoba&Saskatchewan&Alberta	0.111(0.005)***	0.048(0.006)***	0.115(0.012)***	0.051(0.013)***
H. Language (Base group: English)				
Mother tongue-French	0.019(0.009)**	0.032(0.009)***	0.026(0,024)	0.066(0.026)**
Mother tongue-nonofficial	-0.028(0.010)***	0.002(0.010)	-0.091(0.010)***	-0.051(0.010)***
I. Visible minority (Base group: non-visible minority)				
South Asian	-0.000(0.023)	-0.004(0.023)	-0.144(0.012)***	-0.109(0.013)***
Chinese	0.035(0.020)*	0.024(0.022)	-0.155(0.013)***	-0.055(0.013)***
Black	-0.048(0.023)**	-0.037(0.023)	-0.148(0.156)***	-0.025(0.016)
Filipino	-0.048(0.038)	0.052(0.042)	-0.204(0.016)***	-0.046(0.015)***
Constant	8.099(0.038)***	7.445(0.039)***	8.198(0.089)***	7.803(0.089)***
R-squared	0.351	0.417	0.365	0.400
Observations	102,215	103,810	26,259	26,417

Notes: All these observations are restricted to paid employees 25 to 64 years of age. Standard errors are in brackets. *significant at 10% level; **significant at 5% level; ***significant at 1% level.

Table 6: OLS regression results-full-time full-year Chinese and South Asian workers

Variables	Chinese		South Asian	
	Male	Female	Male	Female
A. Education (Base group: high school degree)				
No degree	-0.141(0.043)***	-0.267(0.045)***	-0.175(0.041)***	-0.210(0.049)***
College degree	0.227(0.031)***	0.261(0.033)***	0.205(0.028)***	0.211(0.032)***
Bachelor degree	0.473(0.029)***	0.513(0.033)***	0.414(0.030)***	0.401(0.034)***
Post-graduate degree	0.620(0.032)***	0.659(0.038)***	0.428(0.031)***	0.455(0.037)***
B. Marital status (Base group: married or was married before or in relationship)				
Single	-0.058(0.032)*	-0.004(0.032)	-0.070(0.038)*	-0.001(0.041)
C. Age				
Age	0.036(0.009)***	0.040(0.010)***	0.059(0.010)***	0.075(0.011)***
Age square×1000	-0.361(0.105)***	-0.402(0.118)***	-0.612(0.111)***	-0.780(0.128)***
D. Immigration				
Immigration	-0.495(0.042)***	-0.510(0.048)***	-0.378(0.043)***	-0.527(0.049)***
Years since immigration	0.022(0.004)***	0.030(0.004)***	0.016(0.004)***	0.023(0.004)***
Years since immigration square×1000	-0.212(0.076)***	-0.396(0.094)***	-0.107(0.084)	-0.245(0.096)**
E. Presence of children (Base group: no_kid)				
Kids 0_5	0.089(0.027)***	-0.078(0.035)**	0.080(0.025)***	-0.038(0.033)
Kids 6-14	0.046(0.024)*	0.004(0.028)	-0.040(0.023)*	-0.039(0.027)
Kids 15-24	-0.043(0.023)*	-0.080(0.025)***	0.000(0.024)	-0.058(0.026)**
Kids over 25	-0.131(0.028)***	-0.109(0.030)***	-0.043(0.031)	-0.039(0.031)
H. Province (Base group: Ontario)				
Quebec	-0.243(0.041)***	-0.206(0.046)***	-0.237(0.047)***	-0.218(0.059)***
British Columbia	-0.033(0.021)	-0.131(0.024)***	0.019(0.026)	-0.060(0.028)**
Manitoba&Saskachewan&Alberta	0.086(0.029)***	0.072(0.032)**	0.131(0.030)***	0.023(0.036)
Constant	9.858(0.195)***	9.627(0.211)***	9.394(0.207)***	8.887(0.233)***
R-squared	0.204	0.211	0.135	0.154
Observations	3,980	3,519	4,513	3,327

Notes: All these observations are restricted to paid employees 25 to 64 years of age. Standard errors are in brackets. *significant at 10% level; **significant at 5% level; ***significant at 1% level.

Table 7: OLS regression results-all Chinese and South Asian workers

Variable	Chinese		South Asian	
	Male	Female	Male	Female
A. Education (Base group: high school degree)				
No degree	-0.143(0.038)***	-0.240(0.037)***	-0.128(0.035)***	-0.104(0.039)***
College degree	0.197(0.028)***	0.223(0.028)***	0.177(0.025)***	0.193(0.027)***
Bachelor degree	0.432(0.027)***	0.469(0.028)***	0.348(0.027)***	0.361(0.029)***
Post-graduate degree	0.558(0.030)***	0.603(0.033)***	0.387(0.027)***	0.407(0.031)***
B. Marital status (Base group: married or was married before or in relationship)				
Single	-0.074(0.030)**	-0.062(0.029)**	-0.098(0.033)***	0.006(0.036)
C. Age				
Age	0.034(0.009)***	0.030(0.009)***	0.044(0.009)***	0.061(0.009)***
Age square×1000	-0.331(0.097)***	-0.300(0.103)***	-0.477(0.098)***	-0.646(0.110)***
D. Immigration				
Immigration	-0.599(0.039)***	-0.559(0.040)***	-0.438(0.038)***	-0.559(0.041)***
Years since immigration	0.028(0.003)***	0.034(0.003)***	0.024(0.003)***	0.032(0.004)***
Years since immigration square×1000	-0.321(0.072)***	-0.475(0.078)***	-0.236(0.073)***	-0.401(0.081)***
E. Working status (Base group: full-time)				
Part-time	-0.926(0.036)***	-0.784(0.026)***	-0.831(0.037)***	-0.698(0.026)***
Weeks worked	0.029(0.001)***	0.028(0.001)***	0.029(0.001)***	0.028(0.001)***
F. Presence of children (Base group: no_kid)				
Kids 0_5	0.096(0.026)***	-0.069(0.030)**	0.056(0.023)**	-0.017(0.027)
Kids 6-14	0.034(0.023)	-0.035(0.024)	-0.036(0.021)*	-0.076(0.023)***
Kids 15-24	-0.041(0.021)*	-0.064(0.022)***	0.005(0.021)	-0.066(0.022)***
Kids over 25	-0.134(0.026)***	-0.076(0.026)***	-0.041(0.027)	-0.041(0.028)
G. Province (Base group: Ontario)				
Quebec	-0.287(0.039)***	-0.184(0.041)***	-0.225(0.039)***	-0.310(0.049)***
British Columbia	-0.028(0.020)	-0.116(0.021)***	0.020(0.023)	-0.004(0.024)
Manitoba&Saskachewan&Alberta	0.095(0.028)***	0.072(0.028)**	0.135(0.027)***	0.076(0.030)**
Constant	8.518(0.184)***	8.462(0.186)***	8.306(0.186)***	7.765(0.198)***
R-squared	0.409	0.423	0.336	0.398
Observations	5,768	5,895	6,762	5,861

Notes: All these observations are restricted to paid employees 25 to 64 years of age. Standard errors are in brackets. *significant at 10% level; **significant at 5% level; ***significant at 1% level.

Table 8: Decomposition results of the gender wage gaps

	Full-time full-year		All workers	
	Canadian born	Immigrant	Canadian-born	Immigrant
Differences	0.222	0.222	0.333	0.333
Total explained	-0.023	-0.022	0.119	0.118
Total unexplained	0.243	0.243	0.214	0.215
Explained due to:				
Immvis	0.000	0.001	0.000	0.001
demographic	-0.004	-0.004	-0.008	-0.008
Kids	0.002	0.002	-0.001	-0.001
Work	---	---	0.148	0.148
Education	-0.024	-0.024	-0.021	-0.022
Province	0.003	0.003	0.001	0.001
language	0.000	0.000	0.000	0.000
Unexplained due to:				
Immvis	-0.001	-0.008	-0.000	-0.009
demographic	-0.241	-0.227	-0.268	-0.250
Kids	0.036	0.036	0.040	0.041
Work	---	---	-0.114	-0.122
Education	-0.035	-0.036	-0.047	-0.047
Province	0.014	0.014	0.015	0.014
language	-0.002	0.003	-0.012	-0.006
Constant	0.472	0.460	0.602	0.594
Observations	136,607	33,181	206,025	52,676

Notes: A positive (negative) entry means that the difference is to the advantage of males (females);
Immigration and visible minority: for Canadian-born: nonimm_SA nonimm_Chinese nonimm_Black nonimm_Filipino; for immigrats: imm_SA imm_Chinese imm_Black imm_Filipino YSM YSM2;
Demographic: age age2 single;
Kids: kid0_5 kid6_14 kid15_24 kid25;
Work: parttime ww
Education: edu_no edu_coll edu_bach edu_post
Province: pr_quebec pr_prmsa pr_bc
Language: french non_official
The variables' names are those in the previous regressions.

Table 9: Decomposition results of the gender wage gaps-Chinese and South Asian workers

	Chinese		South Asian	
	Full-time full-year	All workers	Full-time full-year	All workers
Difference	0.222	0.333	0.221	0.333
Total explained	-0.025	0.114	-0.026	0.114
Total unexplained	0.247	0.219	0.247	0.219
Explained due to:				
Immigration	-0.002	-0.002	-0.002	-0.002
Demographic	-0.004	-0.008	-0.004	-0.008
Kids	0.002	-0.001	0.002	-0.001
Work	---	0.147	---	0.147
Education	-0.026	-0.023	-0.025	-0.023
Geographic	0.003	0.001	0.003	0.001
Unexplained due to:				
Immigration	-0.006	-0.011	-0.006	-0.011
Demographic	-0.220	-0.235	-0.220	-0.235
Kids	0.036	0.040	0.036	0.040
Work	---	-0.122	---	-0.122
Education	-0.032	-0.043	-0.032	-0.043
Geographic	0.018	0.014	0.018	0.014
Constant	0.451	0.576	0.451	0.576
Observations	7,499	11,663	7,840	12,623

Notes: A positive (negative) entry means that the difference is to the advantage of males (females);
Immigration: imm YSM YSM2
Demographic: age age2 single;
Kids: kid0_5 kid6_14 kid15_24 kid25;
Work: parttime ww
Education: edu_no edu_coll edu_bach edu_post
Province: pr_quebec pr_prmsa pr_bc
The variables' names are those in the previous regressions.