EFFECTS OF ONTARIO'S IMMIGRATION POLICY ON YOUNG NON-
PERMANENT RESIDENTS BETWEEN 2001 AND 2006

by

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Dedicated to Guilan & Hui who stood by me all the time

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ABSTRACT

The object of this research is to assess the effects of Ontario's new immigration policy on young non-permanent residents. In particular, it is to evaluate how the wage gap between young non-permanent residents and young Canadian citizens has changed in the labor market of Ontario from 2001 to 2006 to demonstrate influences of new policy. On November 21, 2005, the governments of Ontario and Canada signed the first Canada-Ontario immigration agreement that relaxed several requirements for temporary workers to apply for permanent residency. This paper selected data from the 2001 and 2006 population census to conduct a linear regression to analyze the wage gap and the effects of immigration policy. By using the difference-in-difference approach, this paper found that there was no significant positive effect of the new policy on the entry earnings of non-permanent residents in Ontario.

Keywords: Policy effects, non-permanent residents, wage gap, entry earnings.

LIST OF ABBREVIATIONS AND SYMBOLS USED

PNP	Provincial Nominee Program
PUMF	Public use sample micro data files.
OLS	Linear least squares
β	Coefficients
$\mathcal{W}_i$	Weekly wage received by an individual i
$\mathcal{T}_i$	Time dummy
$\mathcal{O}_i$	Ontario dummy
$\mathcal{P}_i$	Non-permanent resident status dummy
$\mathcal{T}_i\mathcal{O}_i$	Workers in Ontario in 2006
$\mathcal{T}_i\mathcal{P}_i$	Non-permanent residents in 2006
$\mathcal{O}_i\mathcal{P}_i$	Non-permanent residents in Ontario
$\mathcal{T}_i\mathcal{O}_i\mathcal{P}_i$	Non-permanent residents in Ontario in 2006
$\mathcal{X}_i$	Personal characteristics of individual i
$\mathcal{J}_i$	Characteristics related to labor market activities.
$\mathcal{I}nd_i$	Industry to which individual i belongs
$\mathcal{O}cp_i$	Occupation of individual i
ε_i	Residuals
$\mathcal{WD}$	Receives wages and salaries or not
$\mathcal{A}_i$	Attending school during the reference year or not
$\mathcal{C}_i$	A child of a family during the reference year

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CHAPTER 1   INTRODUCTION

On November 21 2005, the Canadian federal government and the Ontario provincial government signed the Canada-Ontario Immigration Agreement, which mandates Ontario to develop a pilot provincial nominee program (PNP). Similar to programs already in operation in other provinces, the PNP affords Ontario the opportunity and right to nominate immigrants who will help satisfy its economic priorities and specific labor market needs (Immigration and Settlement in Ontario, Government of Canada[1]). The Ontario government also provides several immigration services aimed to attract new immigrants and facilitate their integration into Ontario's communities. These services include consultation, information sharing and research, pre-arrival information and orientation, settlement, and language training services.

The main differences between the PNP of Ontario and those of other provinces are the new eligibility requirements for permanent residency for students or temporary workers. Ontario's PNP enables international students to apply to Opportunities Ontario for nomination as permanent residents, provided that they are graduates or will soon be graduating with a master's or PhD degree from any of Ontario's publicly funded universities. International students are no longer required to have a permanent job offer and relevant work experience, as is required by the nominee programs implemented in the rest of Canada. Undergraduate applicants who have completed at least half of their university studies on a full-time basis in Canada or who will soon be graduating from a publicly funded Canadian college or university are similarly eligible to apply, as long as they have received full-time job offers. In contrast to the Ontario PNP, those of other provinces and that of the federal government require international students to secure a

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[1] http://www.cic.gc.ca/english/department/laws-policy/agreements/ontario/can-ont-index.asp

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full-time job and accumulate 3 months to 2 years work experience before application[2]. Students and temporary workers have difficulty finding employment that satisfies application prerequisites, thereby leaving such applicants few choices for immigrating to Canada. They are desperate to obtain a job and acquire the required work experience, regardless of salary or benefits. Applying through the skilled worker or international student stream is not the only route for international students and foreign workers to gain residency in Canada, but it is the fastest way to complete the application process.

 If immigrants and permanent residents are expected to belong to the relatively less-advantaged group in the labor market relative to Canadian-born workers, non-permanent residents may be even more disadvantaged than the aforementioned groups. Non-permanent residents may have to endure low wages with no welfare benefits. This situation motivates the current research, focusing on temporary residents rather than on immigrants. The Ontario PNP provides an excellent opportunity to explore the problem discussed above. I expect that the relaxed immigration limitations imposed by Ontario will decrease the demand of temporary residents for jobs (expand the choices available to temporary residents who plan to stay in Canada for the long-term). Such an expansion would translate to improved economic outcomes for non-permanent Ontario residents given that they will be afforded more bargaining power. Moreover, the wage gap between the Canadian citizens and non-permanent residents in Ontario would be reduced more or widen less than that observed in the rest of Canada.

Before carrying out empirical analysis, I examine how the economic outcomes and the personal characteristics that contribute to these outcomes have changed among permanent and non-permanent residents and Canadian citizens from 2001 to 2006.

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[2] For a complete description of immigrant requirements in Nova Scotia and Alberta, see http://novascotiaimmigration.ca/immigrants/immigrating-to-ns and http://www.albertacanada.com/immigration/immigrating.aspx

Section 3 summarizes the findings of previous research. Section 4 outlines the method used to estimate the effects of the immigration policy of Ontario on non-permanent residents. Section 5 presents the data, as well as the descriptive and frequency statistics of all dependent and independent variables used in regression analysis. The results of OLS and Heckman selection models are presented in Section 6. The paper ends with a brief summary and conclusion.

CHAPTER 2   BACKGROUND

In this paper, individuals are classified into three groups: Canadian citizens by birth or naturalization, permanent residents, and non-permanent residents. More specifically, young citizens are divided into two groups in Figures 1 and 2, those who are living with parents and those who are not. The reason why I pay attention to these four groups is that they differ in various ways (for instance, age distribution, educational attainment, language skill, wage, government transfer, low-income status and so on). A large part of non-permanent residents aged 20 to 29 may be international students who are working part-time after school or full-time (recently graduated from a Canadian university or college and in application status). The rest of them may be young foreign labour force who came to Canada as temporary workers. On the other hand, Canadian young citizens are more likely to be a full cross-section of the population, including those who finished school and left home to work and those who are still completing their undergraduate degrees. And as a current undergraduate student living with parents, he or she won't look "poor" even if they have low wages, while those living away from home may well be "poor".

As Figures 1 and 2 show, non-permanent residents aged 20 to 29 are more educated than Canadian citizens and permanent residents aged 20 to 29 in 2001 and 2006. Young Canadian citizens living with parents are the least educated group. Because modern society gives precedence to knowledge, educational level is generally positively related to wage. The educational attainment contributes to a higher level of income, faster promotions and the achievement of better jobs (Blanchflower and Oswald (1995)). Figure 1 reflects a trend, in which all groups achieve higher education in 2001 than in 2006. This pattern is consistent among young workers with more than one university degree (Figure 2). Specifically, in 2006, the percentage of non-permanent residents with

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university degrees is approximately twice as high as that of Canadian citizens with similar qualifications. Additionally, the percentage of non-permanent residents with a higher degree is approximately seven times as high as that of Canadian citizens who are not living with parents and approximately twelve to fifteen times as high as that of Canadian citizens who are living with parents. The percentage of young permanent residents with a higher degree is 3.57% in 2001 and 4.57% in 2006, which is slightly higher than young citizens, but still substantially lower than non-permanent residents.

Figure 3 illustrates the percentage of young individuals who report either English or French as their most frequently used language at home in 2001 and 2006. Those who exhibit the highest language proficiency are young Canadian workers, followed by non-permanent residents and permanent residents. From 2001 to 2006, the largest improvement in language skills is shown by permanent residents, followed by non-permanent residents. During the same period, I find little changes in the percentage of Canadian citizens who most frequently use either English or French at home. In sum, non-permanent residents are more educated but have lower language skills than do Canadian citizens over the studied period.

Figure 4 illustrates the percentage of young workers who are attending school full-time or part-time during the censuses years. Approximately half of the non-permanent residents are current students, the rest of them might belong to temporary foreign workers or new international graduates who just leave school, going through the application process to become a permanent resident of Canada. Young citizens account for the lowest percentage among all groups, followed by permanent residents.

Figure 5 illustrates the percentage of individuals belonging to two age groups, age 25-29 versus age 20-24. As the numbers indicate, young Canadian citizens living with parents

contain the highest percentage of younger workers aged 20 to 24 (74.89%), which is approximately twice as high as that of non-permanent residents (37.94%). That is to say, Canadian citizens living with parents are generally younger than other groups. Figure 5 also shows that the age distributions of non-permanent residents and citizens not living with parents are roughly similar. Canadian citizens not living with parents have the largest proportion of older age (63.75%), followed by non-permanent residents (62.06%).

Figure 1 Percentage of individuals with university degree (Age 20-29)
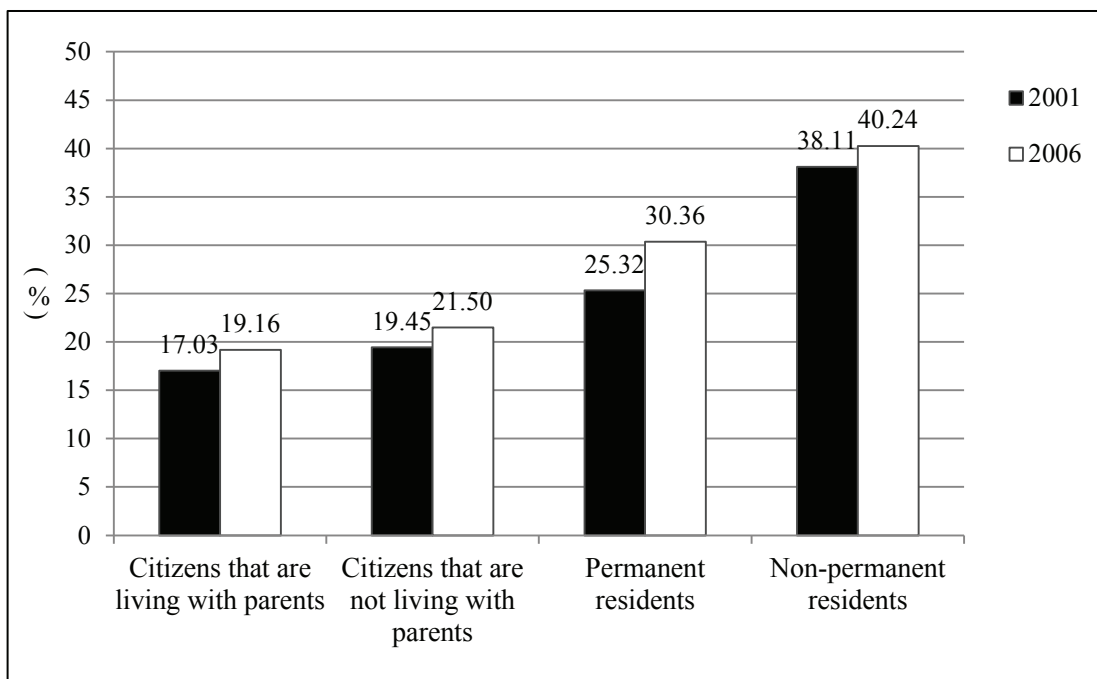
Source: Statistics Canada, 2006, 2001 censuses

Figure 2 Percentage of individuals having more than one university degree (Age 20-29)
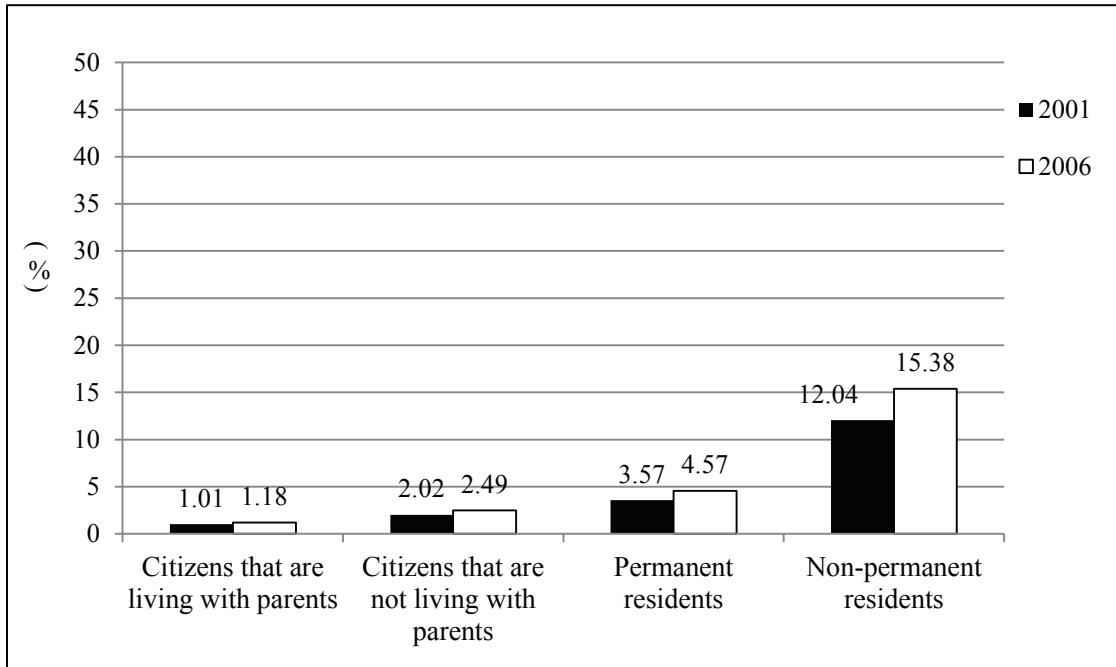
Source: Statistics Canada, 2006, 2001 censuses

Figure 3 Percentage of individuals that speak either English or French as the most
frequently used language at home (Age 20-29)
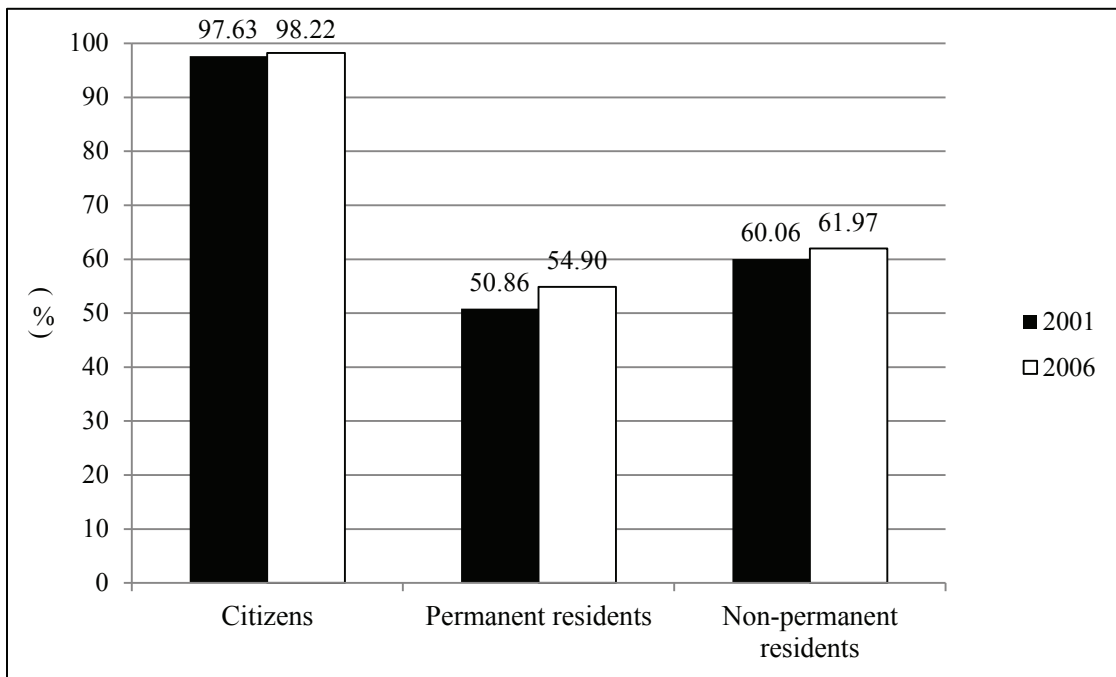
Source: Statistics Canada, 2006, 2001 censuses

Figure 4 Percentage of individuals attending school (Age 20-29)
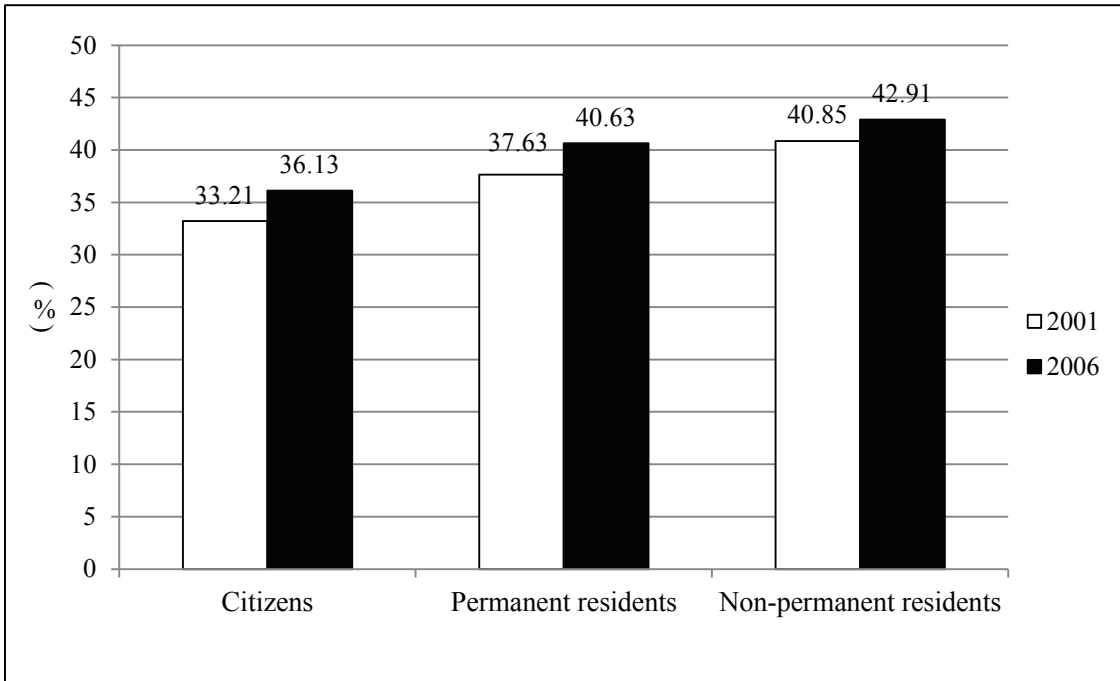
Source: Statistics Canada, 2006, 2001 censuses

Figure 5   Age distribution

Source: Statistics Canada, 2006, 2001 censuses

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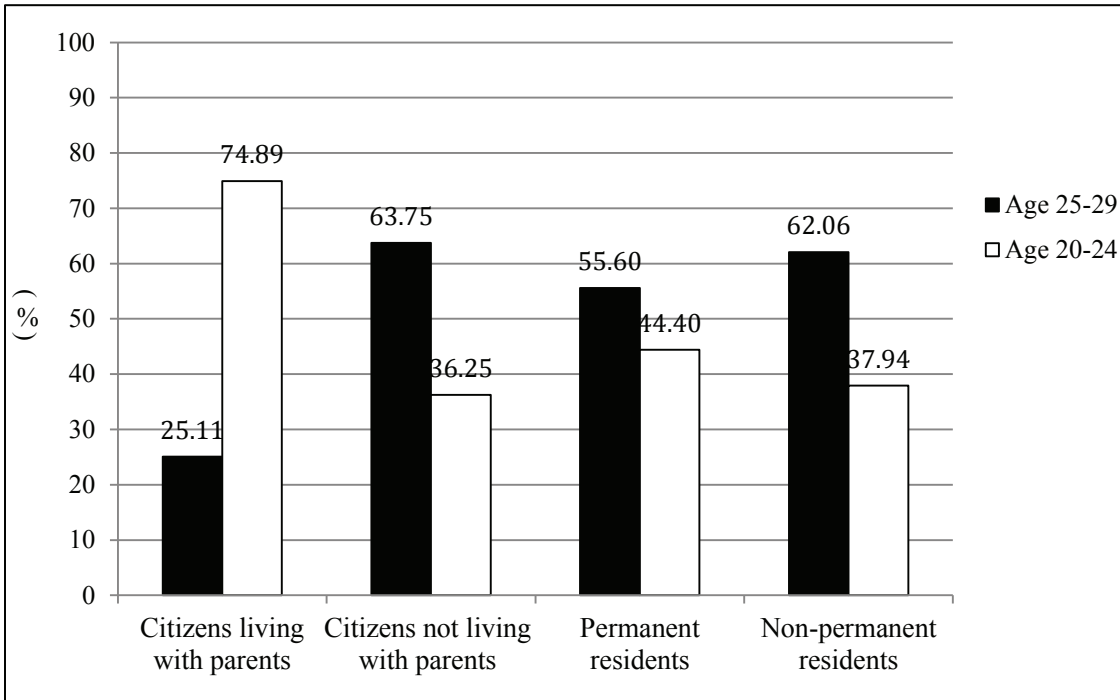
Figure 6 illustrates the percentage of individuals aged 20 to 29 who are below the low-income level. It is defined as the position of each member of an economic family and each person not in an economic family in relation to the "Statistics Canada's low income before tax cut-offs"[3]. In particular, the prevalence of low income before tax is the proportion or percentage of economic families or persons not in economic families in a given classification below the before tax low income cut-offs. These prevalence rates are calculated from unrounded estimates of economic families and persons not in economic families15 years of age and over (Individuals File Documentation and User guide; 2006 Census Public Use Micro-data File). The results are classified into national and Ontario levels. Canadian citizens who are living with parents during the census year account for the lowest percentage of young workers who are below the low-income level.

A remarkable difference in the proportion of low income is also found between young non-permanent residents and Canadian citizens. More than half of non-permanent residents have income below the low-income level. Approximately 20% of Canadian citizens (not living with parents) are below the low-income level, which is similar to permanent residents. Ontario generally has a smaller proportion of low-income individuals than does the rest of Canada. From 2001 to 2006, the percentage of non-permanent residents in Ontario with incomes below the low-income level keeps relatively constant. In both years, a smaller proportion of non-permanent residents in Ontario have income below the low-income level than do the non-permanent residents in the rest of Canada. When narrowing the group down to "current students"[4], the pattern is also found in Figure 7. The main differential appears as the higher proportion of "poor"

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[3] These cut-offs are based on national family expenditure data and are updated yearly by changes in the consumer price index. (2001&2006 Census Public Use Micro data Files)

[4] Refers to attendance during the nine-month period between September 2005 and May 16, 2006 (between September 2000 and May 15, 2001). An individual's attendance could be either full time or part time (day or evening), Attendance is counted only for courses which could be used as credits towards a certificate, diploma or degree.(2001&2006 Census Public Use Micro data Files)

international students and Canadian students not living with parents. On the other hand, Canadian students (living with parents) have lower proportions of poverty in relation to all young Canadian citizens living with parents.

Compared to what has been discussed in Figure 6, lower percentages of workers (all age) below the low-income level are observed in Figure 8 (except for young Canadian citizens who are living with parents). A remarkable difference in the proportion of low income is also found between non-permanent residents and Canadian citizens. Approximate half of non-permanent residents and 12% of Canadian citizens have income below the low-income level. Ontario generally has a smaller proportion of low-income individuals than does the rest of Canada. From 2001 to 2006, the percentage of non-permanent residents in Ontario with incomes below the low-income level declines. In 2006, a smaller proportion of non-permanent residents of workers have income less than the low-income level than do the non-permanent residents in the rest of Canada. Although small decreases are observed in the percentage of workers that are below the low-income level in Ontario and the rest of Canada from 2001 to 2006, such changes are not substantial.

 Figure 9 illustrates the 2001 to 2006 reduction in the incidence of low income, calculated as the percentage decrease in the incidence of low income during the studied period; that is, it reflects the ratio of the difference between the incidence of low income in 2001 and that in 2006 to the incidence of low income in 2001. This percentage decrease reflects how the groups are better off to a certain degree as they rise above the poverty line from 2001 to 2006. As shown in Figure 8, the incidence of low income among non-permanent residents is dramatically higher than that among Canadian citizens in 2001 and 2006. Nearly half of the non-permanent residents in Canada live in poverty. Figure 9 suggests that Canadian citizens exhibit the highest percentage decrease in the incidence of low income both in Ontario and in the rest of Canada. The non-permanent

residents in Ontario also show a remarkable reduction in the incidence of low income; a reduction of slightly more than that achieved by permanent residents.

Figure 6   Percentage of workers that are below the low-income level in 2001 and 2006 (Age 20-29)
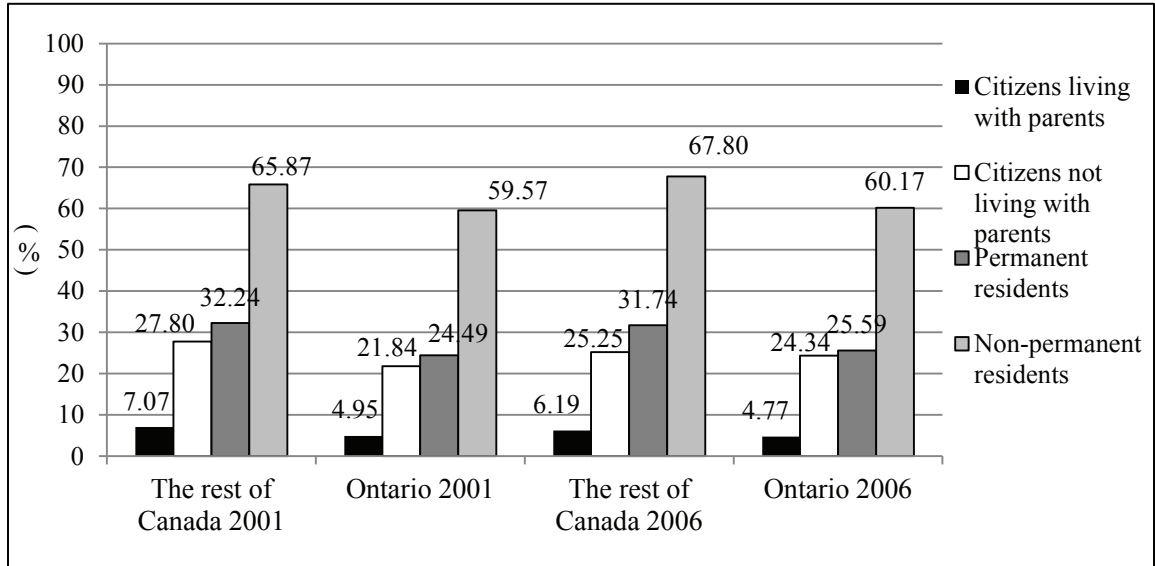
Source: Statistics Canada, 2006, 2001 censuses

Figure 7   Percentage of current students that are below the low-income level in 2001 and 2006 (Age 20-29)

Source: Statistics Canada, 2006, 2001 censuses

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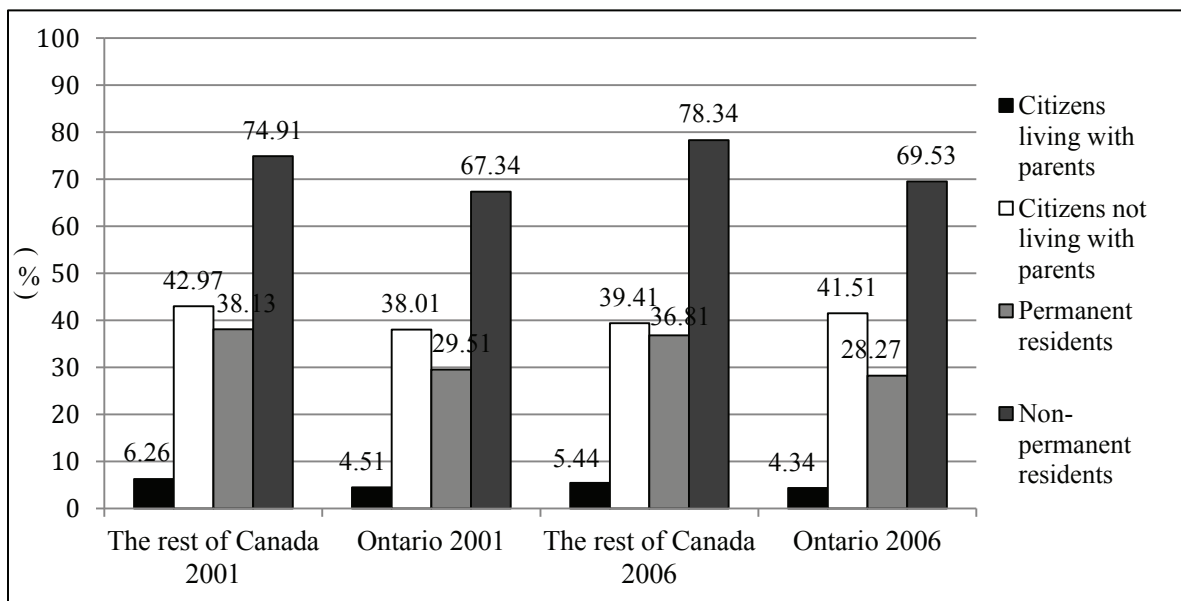
Figure 8 Percentage of workers below the low-income level in 2001 and 2006 (All ages)
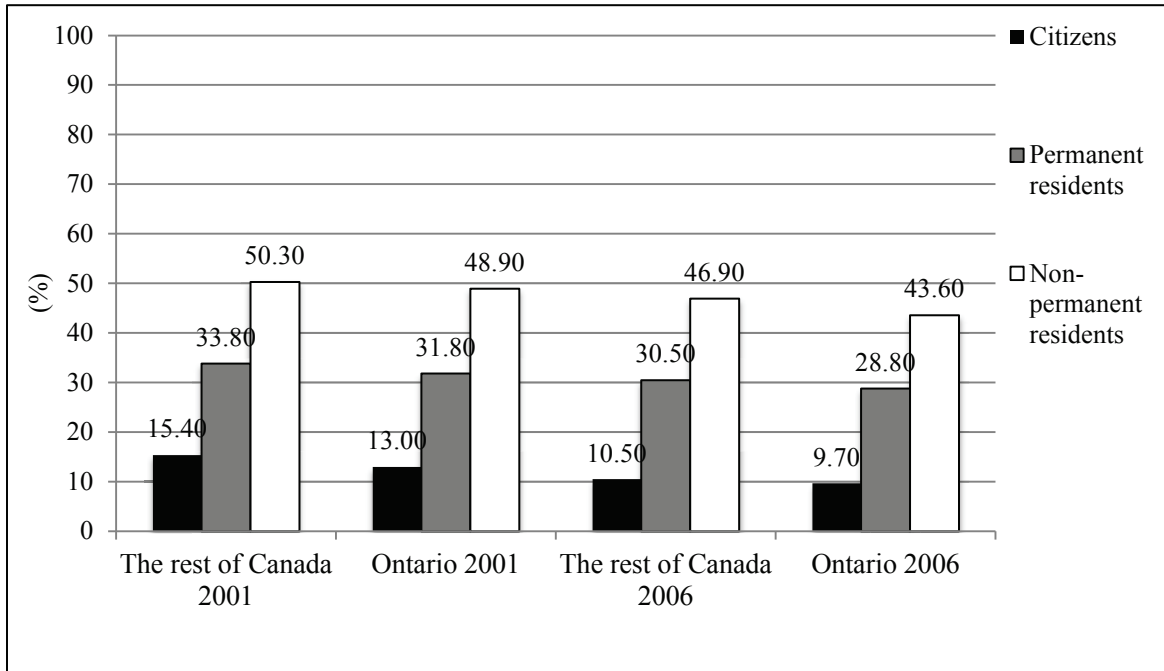
Source: Statistics Canada, 2006, 2001 censuses

Figure 9 Percentage decrease of low-income rate from 2001 to 2006 (All ages)
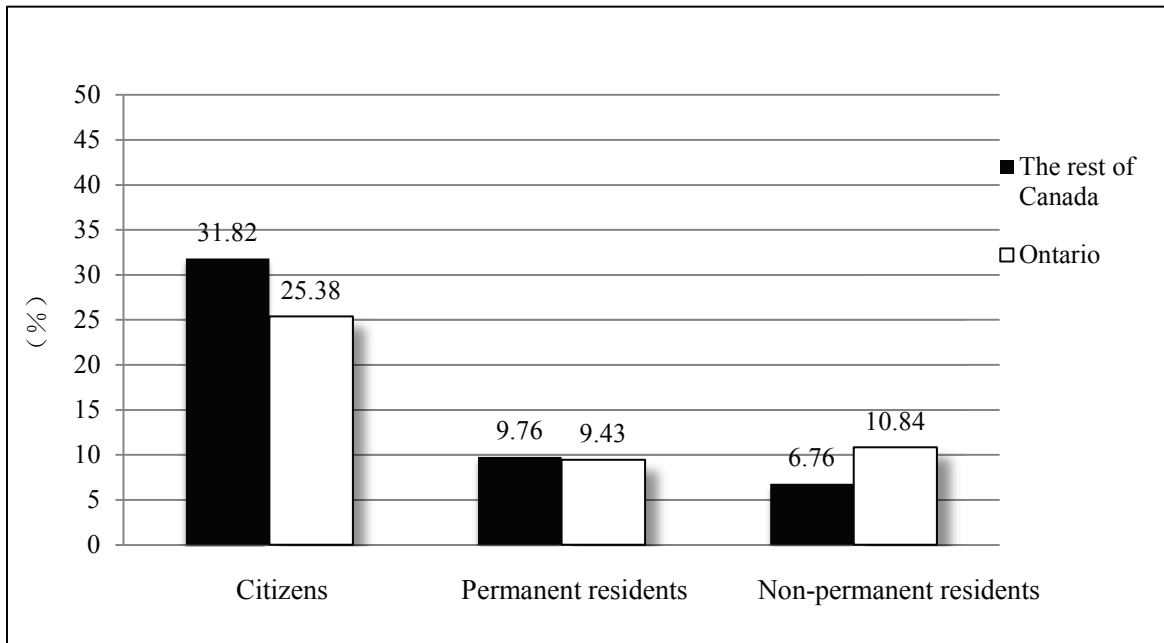
Source: Statistics Canada, 2006, 2001 censuses

Figures 10 and 11 illustrate the mean values of the total government transfers[5] received

by young individuals classified as citizens living with parents, citizens not living with

parents, permanent residents, and non-permanent residents in Ontario and the rest of

Canada. In the rest of Canada, the total government transfer received by non-permanent

residents is lower than that provided to Canadian citizens (either living with parents or

not); that is, approximately half of the general level of Canadian citizens not living with

parents in the rest of Canada. Despite this huge gap, the total government transfers

received by Canadian citizens not living with parents and permanent residents increases

from 2001 to 2006, whereas those received by non-permanent residents and citizens

living with parents remain relatively constant (Figure 6). This huge gap between citizens

not living with parents and non-permanent residents is also observed in Ontario, which is

smaller than the one for the rest of Canada. Moreover, there's an increase of this

differential from 2001 to 2006 in Ontario. Another distinction is that the total

government transfers received by the Canadian citizens (either living with parents or not)

and permanent residents in Ontario are less than the national level, whereas those

received by the non-permanent residents in Ontario are higher than the national level by

approximately CAD250 per person per year.

Figure 10 Total government transfers in the rest of Canada (Received by workers aged 20 to 29)
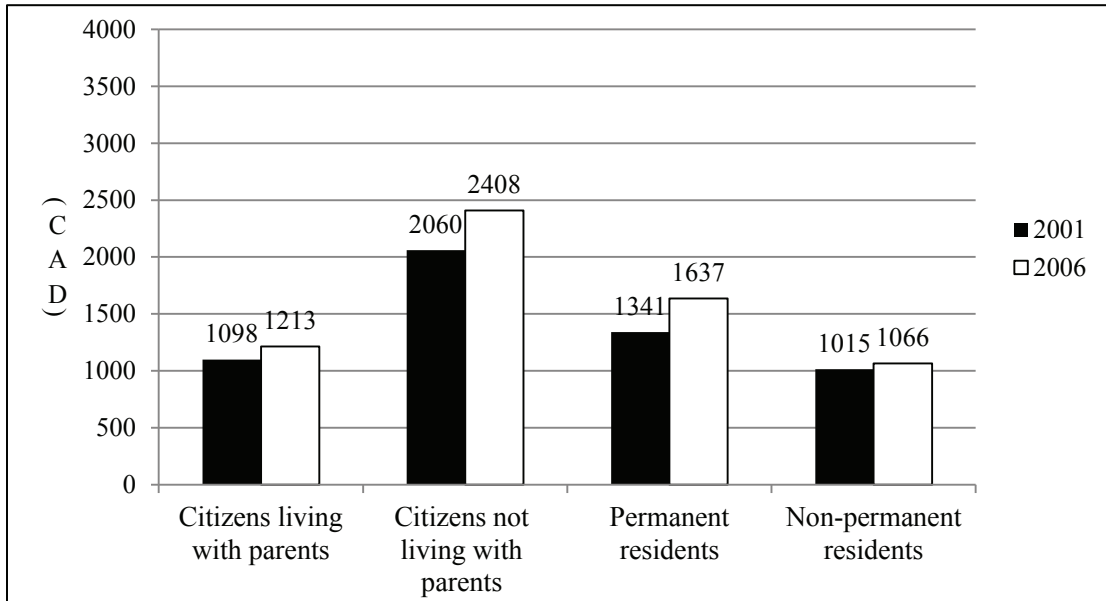
Source: Statistics Canada, 2006, 2001 censuses
Weighted by individual weighting factor (non-constant in 2001)

Figure 11 Total government transfers in Ontario (Received by workers aged 20 to 29)
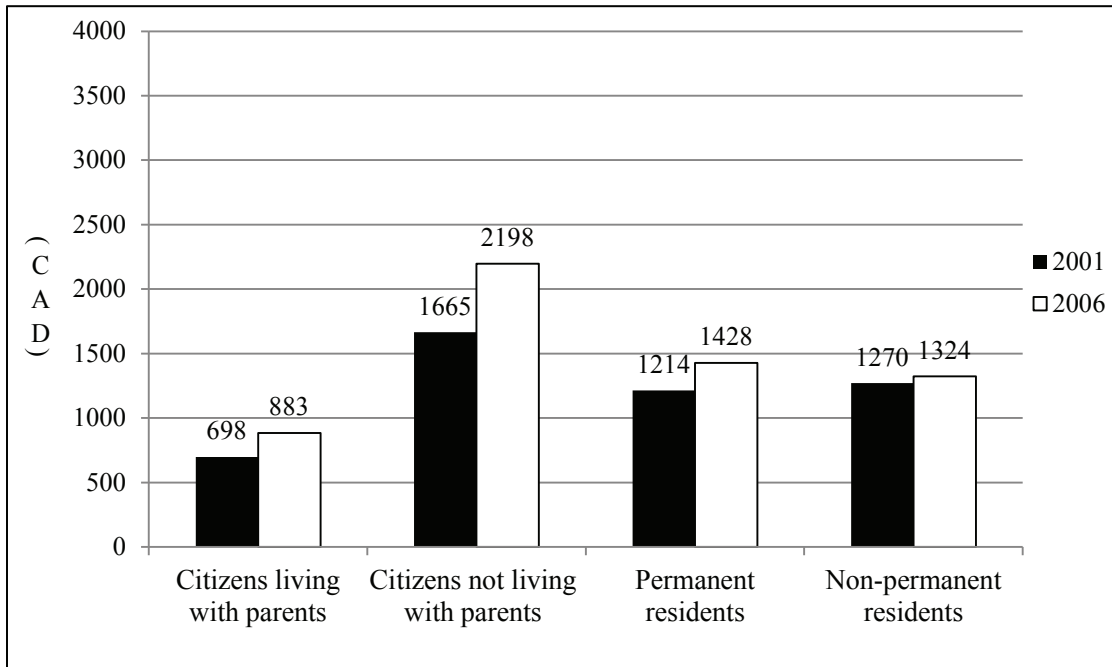
Source: Statistics Canada, 2006, 2001 censuses
Weighted by individual weighting factor (non-constant in 2001)

The discussion in the preceding paragraphs reflects a general picture of the economic situations of the three groups, and provides a general understanding of the disparity among citizens, permanent residents, and non-permanent residents. This paper concentrates on the economic outcomes of young workers aged 20–29. Figure 12 displays the weekly wage ratio of non-permanent residents compared with that of Canadian citizens aged 20–29; these workers are designated as "Ontario" and "the rest of Canada." In 2001, young non-permanent resident workers in the rest of Canada receive a weekly wage of 92¢ for every dollar earned by Canadian citizens. In 2006, this number drops to 85¢. When the sample is narrowed down to Ontario the wage ratios between these two are 95¢ in 2001 and 89¢ in 2006. Thus the wage ratio declined slightly less in Ontario than the rest of Canada and is 4¢ higher than the national level in 2006. These figures suggest that the PNP may have helped the non-permanent residents in Ontario relative to the non-permanent residents in the rest of Canada.

Figure 13 illustrates the mean values of weeks each group works per year (2001 and 2006). It shows that, in general, citizens work for a longer time in comparison to non-permanent residents in both Ontario and the rest of Canada. The differences in the numbers of days worked between citizens and non-permanent residents in 2001 are approximately 5 weeks (Ontario and the rest of Canada). In 2006 this number drops to 2 weeks in Ontario, while keeps relatively constant in the rest of Canada. That is to say, the reason why non-permanent residents are much worse off (as shown in Figure 12) is not only because of large differences in wages but also because of differences in the number of days worked.

Figure 12 Wage ratios of non-permanent residents over Canadian cohorts among age 20-29.
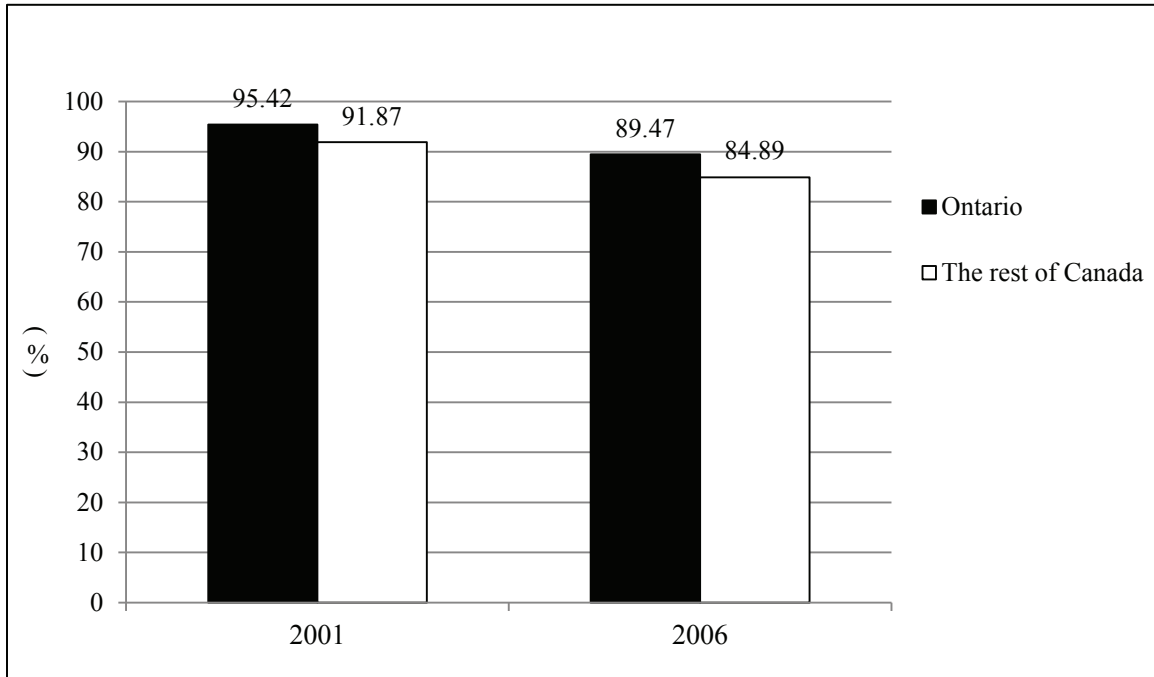
Source: Statistics Canada, 2006, 2001 censuses

Figure 13 Mean values of weeks worked per year in 2001 and 2006 (age 20-29)
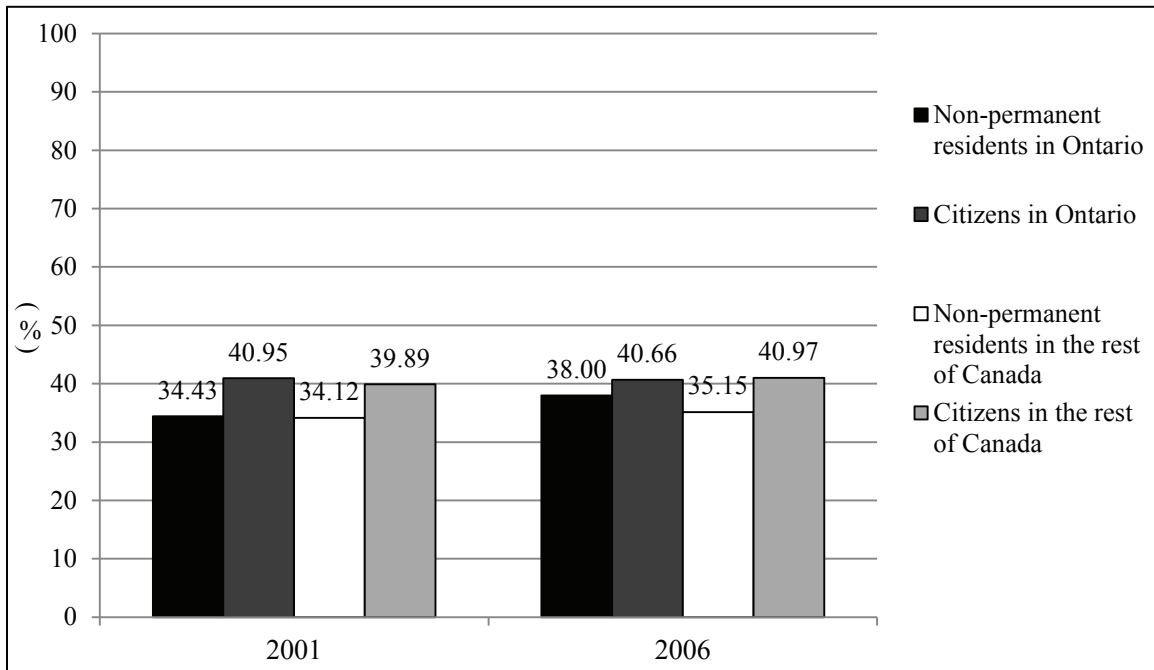
Source: Statistics Canada, 2006, 2001 censuses

CHAPTER 3   LITERATURE REVIEW

Early research indicates that a substantial gap exists between the entry earnings of newly arrived immigrants and comparable non-immigrant workers; this gap significantly narrows as the immigrants adjust and integrate into the Canadian labor market (Chiswick, 1978; Meng, 1987). However, more recent studies have revealed that the initial earnings gap has not diminished as rapidly as earlier thought (Hum and Simpson, 2004). Green and Worswick (2009) compare the experiences of male immigrant workers to those of male Canadian-born laborers. The authors find that the decline in the entry earnings is not unique to immigrants. It's more related to the changes in economic trends and general macro conditions (recession, turbulent macroeconomic conditions), which also reduce the entry earnings of Canadian-born workers. After removing the general effects of economic conditions, the decline in the entry earnings of immigrants could be explained by the substantial declines in returns to foreign experience.

During the 1980s and 1990s, an increase in wage gap in the years after entry is observed (Bloom and Gunderson, 1991; Abbott and Beach, 1993). Baker and Benjamin (1994) find that because the decline is associated primarily with recessions and the immigrants' countries of origin, the return to work experience of the immigrants educated outside Canada exhibits a relative decrease. This reduction explains why the earnings gap of immigrants and Canadian-born workers expands as the changes in the composition of the immigrants' countries of origin are factored in. McDonald and Worswick (1998) reveal that macroeconomic conditions are important factors that affect the earnings gap. When job tenure and current macroeconomic conditions are controlled for, immigrants show a smaller disadvantage in entry earnings than do Canadians, in contrast to the results for earlier cohorts. Furthermore, given the severe recession and restructuring of the early 1980s, new immigrants who had entered the new labor market just before the

adverse macroeconomic conditions occurred have relatively short employment tenures. This observation partly explains the initial earnings gap among immigrants.

More recent studies conclude that the decline in the entry-level earnings of immigrants continue through the early 1990s (Reitz, 2001). These studies focus on the reasons for the rise in the earnings gap between recent immigrant and Canadian-born cohorts. Aydemir and Skuterud (2005), Ferrer, Green, and Riddell (2004), Schaafsma and Sweetman (2001), Picot and Sweetman (2005) observe relatively little improvement during the late 1990s. These studies point to issues such as the different immigrant countries of origin, declining returns to foreign labor market experience, and general deterioration in the outcomes of new labor market entrants. These three factors can account for virtually the entire increase in the entry wage gap during the 1980s and early 1990s (Aydemir and Skuterud, 2005). Specifically, Schaafsma and Sweetman (2001) find a correlation between age at immigration and earnings by using Canadian census data. They further point out that the reasonable sources of this correlation are the practically non-existent returns to work experience obtained outside Canada. Moreover, cultural adaptation causes the returns to education of immigrants to vary with age at immigration. This variation of returns to education of immigrants is systematically observed across those who arrived in Canada around the ages of 15 to 18 and have only completed a few years of education in Canada. To explain this decline in the economic outcomes of male Canadian immigrants, Green and Worswick (2002) indicate there is a general pattern of change in the entry earnings of male Canadian immigrant workers. These patterns are identical to those observed by Li (2003). A progressive decline in entry earnings occurs from the 1980s until the early 1990s possibly because both the entry earnings of native workers and immigrants decrease. Green and Worswick (2002) also find that the substantial declines in the returns to foreign experience determine the decreases in entry earnings across immigrant cohorts.

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Aydemir (2003) investigates the role of the business cycle in the declining participation and employment rates of the immigrant labor force. His findings reflect the more severe labor market conditions faced by immigrant men in the early 1980s and early 1990s; such conditions appear to have a permanent scarring effect on reducing the future labor force participation rates of these cohorts, some of whom drop out of the labour force. Finally, Ferrer, Green and Riddell (2004) argue that foreign education cannot explain the deteriorating entry earnings of immigrant workers because foreign certificates and diplomas continue to figure importantly in significant returns to earnings, although not at the same rate as Canadian education. Conversely, Picot and Hou (2003) focus on poverty rates rather than earnings. They conclude that the immigrant low-income rates continuously increase from 1980 to 2000, as abstracted from business cycle effects. This upward trend occurs among all immigrant age groups in all family types. The poverty rate gap is highest among immigrants who hold a university degree, especially among engineering or applied science majors.

There is a substantial body of literature on the earning of immigrants, while the amount of research focused specifically on the evaluation of Ontario new provincial immigration programs is limited. Pavlova (2008) argues that PNPs have been able to surmount a few of the shortcomings of federal policy by linking employers and newcomers together, involving communities in the integration process, relatively shorter processing time and balancing the geographic distribution of immigrants,

Discussions on the economic outcomes of immigrants in the labor market are complex and may cover several aspects. Previous research provides only a part of the picture and excludes non-permanent residents in analyses. All these studies concentrate more on how economic conditions and the changing characteristics of the labor force influence

earnings. The effects of the immigration policy on non–permanent residents and immigrants cannot be disregarded.

CHAPTER 4   METHODOLOGY

In this study, the dependent variable is weekly wage and salary. I use the natural logarithm of weekly wage and salary to consider the non-linear relationship between wage and all explanatory variables, an approach that allows for greater flexibility.

The core aim of this paper is to evaluate the effects of the pilot provincial nominee program on the weekly wages of non-permanent residents aged 20–29. This paper seeks to evaluate the effects through several steps of setting dummy variables that represent different periods, regions, and citizenship statuses, and then incorporating these into multiple regression analysis as explanatory variables for the variable "weekly wage and salary." The results are analyzed by the difference-in-difference approach; that is, by examing changes in the relative wages of Ontario non-permanent residents and citizens in comparison to the changes in relative wage in the rest of the country. The time dummy variable "2006" is chosen to examine the general changes in the earnings of the young workers in Canada that occurred over time. The "Ontario" dummy can capture the specific effects of being employed in Ontario over two periods relative to the wages and salaries of all the young workers in the rest of Canada. Being employed in Ontario is expected to have a positive effect on wages and salaries because the labor force in Ontario earns a relatively higher weekly wage than do the workers in the rest of the country (Table 2). The dummy "non-permanent residents" is expected to have a generally negative effect on wages and salaries. I include the dummy variable "Ontario 2006" to capture the additional effects of being employed in Ontario in 2006 on the wages and salaries of young workers other than captured by "Ontario" and "2006" i.e. what happened to the relative standing of Ontario in 2006. Similarly, the additional effects of being non-permanent residents in Ontario on the wages and salaries are captured by the dummy variable "non-permanent residents in Ontario" other than "Non-

permanent residents" and "Ontario". Whether these non-permanent Ontario residents are relatively better off than those in the rest of the country during the studied period can be determined by comparing the effects of being non-permanent residents in Ontario relative to citizens residents in Ontario to those of being non-permanent residents in the rest of Canada relative to citizens residents in the rest of Canada, i.e. is the relative disadvantage of being a non-permanent resident better or worse than in the rest of Canada in 2001. The dummy variable "Non-permanent residents in 2006" is then established to illustrate the additional changes in the wages and salaries of all the young non-permanent residents in Canada from 2001 to 2006 relative to the changes in wages and salaries of permanent residents. The positive sum of coefficients of dummy "2006" and "Non-permanent residents in 2006" suggest an increase in the wages and salaries of all the non-permanent residents in Canada from 2001 to 2006. Finally, the dummy variable "non-permanent residents of Ontario in 2006" is included to directly examine the change in relative standing of young non-permanent residents in Ontario relative to the change in relative standing in the rest of Canada. A different change in relative standing will be attributed to the Ontario policy. The positive sum of coefficients of this dummy and all dummies presenting immigration status and all combinations of time dummy and Ontario dummy suggests the positive effect of being a non-permanent resident in Ontario on wages in 2006 compared to the base (citizens in the rest of Canada in 2001). The policy is expected to positively influence the wages and salaries of the young non-permanent residents in Ontario. The individual estimation equation takes the form

$$\ell n \mathcal{W}_i = \beta_0 + \beta_1 \mathcal{T}_i + \beta_2 \mathcal{O}_i + \beta_3 \mathcal{P}_i + \beta_4 \mathcal{T}_i \mathcal{O}_i + \beta_5 \mathcal{T}_i \mathcal{P}_i + \beta_6 \mathcal{O}_i \mathcal{P}_i +$$

$$\beta_7 \mathcal{T}_i \mathcal{O}_i \mathcal{P}_i + \beta_8 \mathcal{X}_i + \beta_9 \mathcal{J}_i + \beta_{10} \mathcal{I}nd_i + \beta_{11} \mathcal{O}cp_i + \varepsilon_i \ ①$$

Where $\mathcal{W}_i$ is the weekly wage received by an individual i, $\mathcal{T}_i$ denotes the time dummy "2006," $\mathcal{O}_i$ represents the "Ontario" dummy, and $\mathcal{P}_i$ represents the non-permanent

resident status dummy and $\mathcal{T}_i\mathcal{O}_i$ consists of the dummy variables set to define workers in Ontario in 2006, $\mathcal{T}_i\mathcal{P}_i$ consists of non-permanent residents in 2006 and $\mathcal{O}_i\mathcal{P}_i$ consists of non-permanent residents in Ontario. $\mathcal{T}_i\mathcal{O}_i\mathcal{P}_i$ is set to define non-permanent residents in Ontario in 2006. This paper captures the changes in the economic outcomes (i.e., wages and salaries) of the two groups (i.e., Canadian citizens vs. non-permanent residents) from 2001 to 2006 to verify the policy effects on non-permanent residents. $\mathcal{X}_i$ represents the other personal characteristics that influence the wages and salaries of individual i, these characteristics include age group, gender, education, and language skills. $\mathcal{J}_i$ consists of the characteristics related to labor market activities, such as "Mainly worked part-time in the reference year" and "last worked before the reference year". $\mathcal{I}nd_i$ is information on the industry to which individual i belongs, and $\mathcal{O}cp_i$ is information on the occupation of individual i. ε_i represents the residuals.

In order to correct the selection bias, Heckman's two-step selection model (regression model with sample selection) is also applied to this paper to analyze the correlation between wages and explanatory variables. Because only workers who receive wages and salaries are selected as the dependent variable in the regression model, the estimation of the determinants of wages may lead to bias (when observations are selected non-randomly). In the regression model, same variables are used as in the OLS model except all the labour market variables (Industry and Occupation variables). In the sample selection part, dummy variable "receive wage or not" is additionally set to represent whether the individual receives wage and salary or not. Moreover, variables for Attendance of school and Living with Family are also added into the selection model. The total number of observations in this model is 175,795, among which the extremely high values of yearly and weekly wages are also eliminated in the same way as the OLS. Within the sample, 169,178 receive wages and salaries in the reference year and 6,617 do not.

The selection model takes the form

$$\mathcal{WD} = \beta_0 + +\beta_1 \mathcal{T}_i + \beta_2 \mathcal{O}_i + \beta_3 \mathcal{P}_i + \beta_4 \mathcal{T}_i \mathcal{O}_i + \beta_5 \mathcal{T}_i \mathcal{P}_i + \beta_6 \mathcal{O}_i \mathcal{P}_i +$$

$$\beta_7 \mathcal{T}_i \mathcal{O}_i \mathcal{P}_i + \beta_8 \mathcal{X}_i + \beta_9 \mathcal{J}_i + \beta_{10} \mathcal{A}_i + \beta_{11} \mathcal{C}_i \; ②$$

where $\mathcal{WD}$ represents whether the individual i receives wages and salaries or not. $\mathcal{WD}$ equals to 1, if individual receives wage and salary, 0 otherwise. $\mathcal{A}_i$ represents the information on whether or not individual i is attending school during the reference year. $\mathcal{C}_i$ represents the family information. If individual is a child of a family during the reference year, $\mathcal{C}_i$ equals to 1, 0 otherwise.

CHAPTER 5   DATA

5.1 SUMMARY

The data used in this study are obtained from the Census of Population 2001 and 2006
Canada [public use sample micro data files, specifically individuals file (PUMF), 2.7%
sample]. The Censuses provide information on the demographic, social, and economic
characteristics of the Canadian labor force. In particular, such information enables the
estimation of the economic outcomes of non-permanent residents in this paper.

 For the period studied, the Census presents consistently collected information on
language skills, labor force activities, a variety of income measures, work experience
during the previous year, and other individual socio-economic characteristics, such as
industry and occupation. Another advantage of the Census is that it provides substantial
information on educational attainment and immigration characteristics. It features
detailed data on the highest degree, diploma, or certificate acquired by an individual. The
effects on wage may vary across degrees. For instance, the contribution of a university
degree to increasing wage is expected to be greater than that of a high school degree. If
the total years of schooling are used as an independent variable to measure the effect of
educational attainment on wage in a linear regression model, the effect of every
additional year in school may decrease as a higher level of education is achieved. That is
to say, the coefficients of one year spent on achieving a master's degree is less from the
one spent on the last year of high school. This observation is the reason I choose the
highest degree achieved as the measure for educational attainment.

Aside from the above-mentioned information, which I use to construct a model for
estimating wage and salary, abundant data on the characteristics of all the immigrants, as

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well as permanent and non-permanent residents, is also provided by the Census. Moreover, the Census has large sample sizes, which are considerably less affected by earnings and other information that is non-reported on the bottom of the income distribution (Frenette, Green, and Picot, 2006). The 2006 Census PUMF on individuals contains 844,476 records, representing 2.7% of the Canadian population. The 2001 Census PUMF on individuals contains 801,055 records, which also represents 2.7% of the population listed in the Census. In this paper, the sample used to study the effects of the policy comprises workers aged 20–29. In the Heckman selection model, the sample contains 175,796 observations that include young workers who received wages and salaries in the reference year and those who did not. In the regression model, the sample is narrowed down to 169,178 observations, which only includes young workers who received wages and salaries in the reference year.

I examine one labor market outcome: "wages and salaries," which refers to gross wages and salaries before deductions for such items as income tax, pensions, and employment insurance; it includes military pay and allowances, tips, commissions and cash bonuses, benefits from wage-loss replacement or income-maintenance insurance plans, supplementary unemployment benefits from an employer or union, and all types of casual earnings[6]. Other employment incomes, such as taxable benefits, research grants, and royalties, are also included. Given that a large portion of the decline in the yearly wage gap has been associated with the large positive coefficient of the variable "number of weeks worked," this paper considers weekly wage as the annual wage divided by the working weeks in the reference year.

Table 1 illustrates the summary statistics of the dependent variable, wage and salary. It includes mean values of the adjusted yearly and weekly wages and salaries of all the

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[6] Non-permanent residents are less likely to be qualified to receive part or all of those benefits

individuals who did receive wages and salaries in the sample among citizens, permanent residents and non-permanent residents. Concerned about the reliability of very large and very small values, I eliminated all extreme values of yearly wages that are higher than 150,000 dollars (0.06% of the sample) and all extreme values of weekly wages that are higher than 2,900 dollars (0.57% of the sample). The minimum value of yearly wages of all young workers in 2006 is 896 dollars, so I also eliminate all the extreme values of yearly wages in 2001 that are lower than 896 dollars (1.41% of the sample). The yearly and weekly wages decrease progressively from citizens to non-permanent residents.

Table 2 illustrates the mean values of the weekly wage received by non-permanent residents, permanent residents and Canadian citizens from 2001 to 2006 based on the same selected sample in the table 1. The results are categorized as those for the Ontario and national groups. As shown in Table 2, the wage gap between the Canadian citizens and non-permanent residents extends from 2001 to 2006 in Ontario and the rest of Canada. The weekly wage gap increases by 35.72 CAD in the rest of Canada and 29.23 CAD in Ontario from 2001 to 2006. Generally, Ontario has a lower wage gap between these two groups than the rest of Canada. In 2001, the differential in wage gap between the rest of Canada and Ontario is 14.75 CAD per week, which increases to 21.24 CAD per week in 2006. That is, the non-permanent residents in Ontario are not as negatively affected as those in the rest of Canada in terms of wage gap.

Table 1: Summary statistics of wage and salaries (yearly and weekly) in 2001 and 2006 (20-29 ages)

Variable	Numbers of observations	Mean	Standard error	Min.	Max.
Yearly wage and salary					
Citizens	145191	20469	41.91	896.43	150000
Permanent residents	22408	19454	106.45	896.43	144000
Non-permanent residents	1579	16147	397.83	896.43	132353
Weekly wage and salary					
Citizens	145191	503.74	0.91	17.24	2900
Permanent residents	22408	495.17	2.4	17.24	2881
Non-permanent residents	1579	462.78	9.91	17.24	2857

Notes:

a. The number of observations (*n*) 169,178.

b. CPI-adjusted wage and salary in 2006, with 2001 as the base year

c. Weighted by individual weighting factor (non-constant in 2001)

d. Eliminated the extreme value of yearly wage that is higher than 150,000 and the extreme value of weekly wage that is higher than 2,900.

e. Eliminated the extremely value of yearly wages that is lower than 896.43 for 2001 due to the minimum of yearly wages of 2006 is 896.43

Source: Statistics Canada, 2001 and 2006 censuses

Table 2: Mean value of weekly wage and salaries of workers who did receive wages and salaries (aged 20 - 29)

	Weekly wage and salary	Mean	Standard error	Min.	Max.
The rest of Canada	Canadian citizens in 2001	482.40	1.59	17.24	2900
	Permanent residents in 2001	452.66	4.93	17.24	2816
	Non-permanent residents in 2001	443.16	21.11	17.24	2857
	Wage gap	**39.24****			
	Canadian citizens 2006	496.24	1.58	17.24	2689
	Permanent residents in 2006	459.92	4.58	17.24	2881
	Non-permanent residents in 2006	421.28	15.64	17.24	2689
	Wage gap	**74.96****			
Ontario	Canadian citizens in 2001	534.42	5.08	17.24	2880
	Permanent residents in 2001	516.24	2.23	17.24	2826
	Non-permanent residents in 2001	509.93	28.02	17.24	2757
	Wage gap	**24.49 ****			
	Canadian citizens in 2006	510.15	2.20	17.24	2869
	Permanent residents in 2006	491.29	4.38	17.24	2881
	Non-permanent residents in 2006	456.43	17.11	17.24	2689
	Wage gap	**53.72 ****			

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Notes:
a. The wages and salaries in 2006 are adjusted by CPI, with 2001 as the base year.
b. Wage gap is the weekly wage differential between Canadian citizens and non-permanent residents.
c. The number of observations (*n*) 169,178.
d. Weighted by individual weighting factor (non-constant in 2001)
e. Significance at 5% level denoted by **, significance at 10% level denoted by *
f. Eliminated the extreme values of yearly wages that are higher than 150,000 and the extreme values of weekly wages that are higher than 2,900.
g. Eliminated the extreme value of yearly wages that are lower than 896.43 for 2001 due to the minimum value of yearly wages of 2006 is 896.43
Source: Statistics Canada, 2001 and 2006 censuses

In this paper, young workers are classified as two age groups, age 20-25 and age 25-29, with 20–24 as the base ages. Two dummy variables are established to identify three labor force groups: Canadian-born or naturalized workers, permanent residents, and non-permanent residents. The dummy variable "permanent residents" equals 1 if the individuals in the sample are permanent residents; otherwise, its value is 0. The dummy variable "non-permanent residents" is set to 1 if the individuals are non-permanent residents and 0 otherwise. These two dummy variables represent Canadian-born or naturalized workers (as the base) if both are set to 0. The "Ontario" dummy is established to investigate the differential in wages between Ontario and the rest of Canada. The time dummy "2006" is chosen to examine general changes occurring from 2001 to 2006. The "Ontario*2006" dummy is established to analyze the effect of being employed in Ontario in 2006 on wages and salaries in addition to the effects of "Ontario" and "2006". Several dummy variables are established to examine the effects of status as Canadian citizens or non-permanent residents across different regions and over two periods. These variables include "non-permanent resident in Ontario," "non-permanent resident in 2006," and "non-permanent resident 2006 in Ontario," all of which are set to 1 if applicable or 0 if not. The other personal characteristics that influence wages and salaries are gender, language skills, and educational attainment. In examining language characteristics, the

dummy variable chosen is home-spoken language, assigned a value of 1 if neither English nor French is reported to be the most frequently used language at home; otherwise, its value is 0. Some other variables can be used to measure language skills: mother tongue, official language skills, and number of languages spoken. For this research, however, the language spoken at home represents the ability to frequently use the language at home or at work.

This paper uses the highest degree, diploma, or certificate to represent educational attainment. Four dummy variables are established to represent five levels of education: lower than high school, high school, college degree or equivalent diploma or certificate, university, and higher than bachelor's degree, such as a master's, PhD, or medical degree. High school diploma is set as the base educational attainment. Another two dummy variables are set to present labor force activities: "worked before the reference year" and "mainly worked part-time in the reference year." The dummy variable "mainly worked part-time in the reference year" equals 1 if an individual worked mainly part time in the reference year; if the individual worked mainly full- time, the value is 0. The dummy variable "worked before the reference year" is 1 if the individual worked in a period before the reference year. If the last time the individual worked is in the reference year (i.e. never worked before), dummy equals 0. Industry variables include 19 dummy variables that represent 20 specific industries, with "retail trade" as the base industry. Eleven specific occupations are represented by 10 dummy variables, with "intermediate sales and service personnel" as the base occupation.

5.2 DESCRIPTIVE STATISTICS OF VARIABLES

This section begins with a description of the composition of the explanatory variables in the OLS regression equation. Table 3 presents the average level of personal characteristics (except for industrial and occupational information) of citizens, permanent residents and non-permanent residents. Under the same categories (Citizens, permanent residents, non-permanent residents), Table 4 presents explanatory variables in the Heckman selection model. At last, Table 5 displays the average levels of all the personal characteristics of young workers aged 20–29 from 2001 to 2006.

In the OLS sample, Citizens by birth or naturalization occupy the highest proportion of 85.82%, followed by permanent residents 13.25% and non-permanent residents 0.93%. As shown in Table 3, 50.22% of citizens, 52.24% of permanent residents and 58.45% of non-permanent residents belong to the labor force of 2006, among which 48.07% of citizens, 55.41% of permanent residents and 61.94% of non-permanent residents are 25-29 years old. Non-permanent residents have the largest proportion of older group (25-29). They are generally older than citizens and permanent residents in this data sample. Moreover, 49.03% of citizens, 49.88% of permanent residents, 50.22% of non-permanent residents are females. Ontario occupies 34.98% of citizens, 55.59% of non-permanent residents and 42.69% of non-permanent residents. Of the young citizen from 2001 to 2006, 2.04% speak neither English nor French most often at home, followed by 38.57% of non-permanent residents and 46.64% of permanent residents.

Under the categories of the dummy variables that represent educational attainment, the Canadian citizens with a high school degree account for the highest percentage (33.22%) among all the educational levels, followed by citizens with a college degree (32.77%) and citizens with a university degree (19.71 %). The average proportion of young citizens with more than one university degree is 1.77%, whereas that measured among non-permanent residents is 14.12%. Non-permanent residents with a university degree

account for the highest percentage among all educational levels of non-permanent residents (39.58%), followed by high school diploma (22.99%) and college diploma (15.52%). In a word, the non-permanent residents are more highly educated than all the young citizens in Canada.

With regard to "worked before the reference year," only 9.26% of young Canadian citizens report that the last time they worked was before the reference year, which means 90.74% of them do not have much prior work experience before the reference period. Although this proportion increases among permanent residents and non-permanent residents, it still accords with the previous discussion on excluding most of the complex effects of work experience on wage by focusing on young workers.

Besides all the explanatory variables as same as in Table 3, Table 4 also indicates the distributions of "Attendance of school"[7] and "Living with parents". As shown in Table 4, 40.15% of Canadian citizens aged 20 to 29 are living with parents, whereas that measured among non-permanent residents is only 6.95%. Additionally, 42.14% of non-permanent residents are attending school in the census year, followed by permanent residents (39.29%) and Canadian citizens (34.73%). Table 5 displays the general distributions of all personal characteristics of young workers including industrial and occupational information (OLS and Heckman's selection). As Table 5 shows, "retail trade" accounts for the largest proportion in terms of industry worked, with 14.74% of the young labor force employed in it. "Intermediate sales and service personnel" accounts for the largest proportion of occupations at 15.75%.

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[7] Refers to attendance during the nine-month period between September 2005 and May 16, 2006 (between September 2000 and May 15, 2001). An individual's attendance could be either full time or part time (day or evening), Attendance is counted only for courses which could be used as credits towards a certificate, diploma or degree.(2001&2006 Census Public Use Micro data Files)

Table 3: Frequency of compositional variables (Percentage in OLS)

Variables	Citizens	Permanent residents	Non-permanent residents
% Sample	85.82	13.25	0.93
2006	50.22	52.24	58.45
Aged 25-29	48.07	55.41	61.94
Female	49.03	49.88	50.22
Ontario	34.98	55.59	42.69
Respondent reports neither English nor French as the language spoken most often at home	2.04	46.64	38.57
Currently students	34.78	39.44	41.92
Aged 25-29 currently students	9.63	13.94	21.28
Lower than high school	12.52	11.44	7.79
High school diploma	33.23	32.73	22.99
College diploma or certificate	32.77	23.8	15.52
University degree	19.71	28.06	39.58
More than one university degree	1.77	3.97	14.12
Worked mainly part-time in the reference year	25.85	28.37	26.85
Worked before the reference year	9.26	10.48	17.86
Number of observations	145191	22408	1579

Notes:

a. Weighted by individual weighting factor

Source: Statistics Canada, 2001 and 2006 censuses

Table 4: Frequency of compositional variables (Percentage in Heckman selection)

Variables	Citizens	Permanent residents	Non-permanent residents
% Sample	85.40	13.61	0.99
2006	51.86	55.27	62.34
Aged 25-29	48.23	55.60	62.06
Female	48.97	49.67	49.94
Ontario	35.03	55.64	42.25
Respondent reports neither English nor French as the language spoken most often at home	2.06	46.91	38.75
Lower than high school	12.69	11.35	7.35
High school diploma	33.31	32.83	23.25
College diploma or certificate	32.65	23.59	15.84
University degree	19.56	28.11	39.44
More than one university degree	1.80	4.12	14.12
Worked mainly part-time in the reference year	26.20	29.00	27.44
Worked before the reference year	9.52	10.94	18.66
Attendance of school	34.73	39.29	42.14
Living with family	40.15	47.70	6.95
Wage dummy=1	96.71	93.64	90.64
Number of observations	150124	23929	1742

Notes:

a. Weighted by individual weighting factor

Source: Statistics Canada, 2001 and 2006 censuses

Table 5: Frequency of compositional variables

Variables	Percentage (OLS)	Percentage (Heckman selection)
2006	51.57	52.42
Aged 25-29	49.36	49.37
Female	49.00	49.07
Ontario	37.8	37.9
Canadian by birth or naturalization	85.81	85.4
Permanent resident	13.21	13.61

Variables	Percentage (OLS)	Percentage (Heckman selection)
Non-permanent resident	0.98	0.99
Respondent reports neither English nor French as the language spoken most often at home	8.22	8.53
Lower than high school	12.16	12.46
High school diploma	32.96	33.14
College diploma or certificate	31.52	31.25
University degree	21.16	20.92
More than one university degree	2.2	2.23
Worked mainly part-time in the reference year	25.71	26.59
Worked before the reference year	9.29	9.81
Agriculture, forestry, fishing, and hunting	2.03	
Mining and oil and gas extraction	1.41	
Utilities	0.48	
Construction	5.82	
Manufacturing	11.92	
Wholesale trade	4.09	
Retail trade	14.74	
Transportation and warehousing	3.43	
Information and cultural industries	2.90	
Finance and insurance	4.09	
Real estate and rental and leasing	1.35	
Professional, scientific, and technical services	6.62	
Management of companies and enterprises	0.07	
Administrative and support, waste management, and remediation services	4.93	
Educational services	5.88	
Health care and social assistance	8.26	
Arts, entertainment, and recreation	2.75	
Accommodation and food services	10.23	
Other services (except public administration)	4.38	
Public administration	4.64	

Variables	Percentage (OLS)	Percentage (Heckman selection)
Managers	5.43	
Professionals	13.74	
Semi-professionals and technicians	10.05	
Supervisors	2.75	
Administrative and senior clerical personnel	3.63	
Skilled sales and service personnel	4.10	
Skilled crafts and trades workers	7.83	
Clerical personnel	11.77	
Intermediate sales and service personnel	15.75	
Semi-skilled manual workers	9.61	
Other sales and service personnel	10.24	
Other manual workers	5.10	
Attendance of school		35.42
Living with family		40.85
Wage dummy=1		96.24
Number of observations	169,178	175,795

Notes:

a. Weighted by individual weighting factor

Source: Statistics Canada, 2001 and 2006 censuses

CHAPTER 6   RESULTS

The results of the uncorrected and corrected regressions are shown in Table 6. Due to the

significant effect of sample selection, this paper uses the results after controlling for

sample selection. The base group is set to be all Canadian citizens outside Ontario in

2001. The coefficients of time dummy 2006 shows that, when all other characteristics are

constant (cet. par., hereafter), citizens outside of Ontario in 2006 would be predicted to

earn higher wages by 7.7% than that earned by citizens outside of Ontario in 2001 (cet.

par.). The coefficient of variable "Ontario" indicates that being a Canadian citizen in

Ontario in 2001 affords workers the advantage of commanding wages that are 11.9%

higher than those provided to Canadian citizens outside Ontario in 2001 (cet. par.).

Table 6: Results of the OLS and Heckman selection model

Dependent variable: Log weekly wage and salaries Independent variable	Coefficients (OLS)	Coefficients (Corrected)	Simple marginal effect (Corrected)
Ontario	0.070** (0.006)	0.112** (0.006)	0.119
time2006	0.066** (0.005)	0.074** (0.005)	0.077
Non-permanent resident	-0.277** (0.056)	-0.240** (0.039)	-0.214
Permanent resident	-0.053** (0.007)	-0.056** (0.007)	-0.055
Ontario06	-0.020** (0.008)	-0.064** (0.008)	-0.062
Ontario*non-permanent resident	0.040 (0.092)	-0.0002 (0.061)	0.000
Non-permanent residents*06	-0.012 (0.067)	-0.061 (0.052)	-0.059
Non-permanent residents*06*Ontario	0.015 (0.106)	0.067 (0.079)	0.070
25-29	0.222** (0.004)	0.236** (0.004)	0.267

Dependent variable: Log weekly wage and salaries	Coefficients (OLS)	Coefficients (Corrected)	Simple marginal effect (Corrected)
Independent variable			
Female	-0.130** (0.004)	-0.112** (0.004)	-0.106
Report neither English nor French as the language most spoken at home	-0.065** (0.009)	-0.066** (0.008)	-0.064
Less than high school	-0.088** (0.007)	-0.057** (0.007)	-0.055
College	0.078** (0.005)	0.111** (0.005)	0.118
University	0.162** (0.006)	0.190** (0.006)	0.210
More than one university degree	0.123** (0.014)	0.138** (0.014)	0.148
Mainly worked part-time in the reference year	-0.537** (0.005)	-0.528** (0.005)	-0.410
Last worked before reference year	0.070** (0.007)	0.069** (0.006)	0.067
Managers	0.205** (0.009)	0.201** (0.009)	0.223
Professionals	0.229** (0.008)	0.228** (0.008)	0.256
Semi-professionals and technicians	0.041** (0.008)	0.042** (0.008)	0.042
Supervisors	0.087** (0.012)	0.083** (0.012)	0.087
Administrative and senior clerical personnel	0.074** (0.011)	0.074** (0.011)	0.077
Skilled sales and service personnel	0.042** (0.011)	0.039** (0.010)	0.039
Skilled crafts and trades workers	0.127** (0.010)	0.127** (0.010)	0.135
Clerical personnel	-0.011 (0.008)	-0.011 (0.008)	-0.011
Semi-skilled manual workers	0.016* (0.009)	0.014 (0.009)	0.014
Other sales and service personnel	-0.077** (0.008)	-0.077** (0.007)	-0.074
Other manual workers	-0.012 (0.011)	-0.011 (0.011)	-0.011

Dependent variable: Log weekly wage and salaries	Coefficients (OLS)	Coefficients (Corrected)	Simple marginal effect (Corrected)
Independent variable			
Agriculture, forestry, fishing and hunting	0.156** (0.016)	0.155** (0.015)	0.167
Mining and oil and gas extraction	0.648** (0.016)	0.639** (0.017)	0.894
Utilities	0.422** (0.025)	0.421** (0.027)	0.524
Construction	0.222** (0.010)	0.219** (0.010)	0.245
Manufacturing	0.243** (0.008)	0.240** (0.008)	0.272
Wholesale trade	0.204** (0.010)	0.202** (0.011)	0.224
Transportation and warehousing	0.239** (0.012)	0.235** (0.012)	0.265
Information and cultural industries	0.187** (0.012)	0.191** (0.013)	0.203
Finance and insurance	0.252** (0.010)	0.251** (0.011)	0.285
Real estate and rental and leasing	0.075** (0.016)	0.074** (0.017)	0.077
Professional, scientific and technical services	0.193** (0.009)	0.191** (0.010)	0.211
Management of companies and enterprises	0.441** (0.042)	0.450** (0.069)	0.568
Administrative and support, waste management and remediation services	0.055** (0.010)	0.052** (0.010)	0.053
Educational services	-0.015 (0.011)	-0.016 (0.010)	-0.016
Health care and social assistance	0.161** (0.009)	0.158** (0.009)	0.171
Arts, entertainment and recreation	0.017 (0.013)	0.020* (0.012)	0.020
Accommodation and food services	-0.088** (0.008)	-0.089** (0.008)	-0.085
Other services (except public administration)	-0.043** (0.011)	-0.045** (0.010)	-0.044
Public administration	0.306** (0.010)	0.306** (0.010)	0.358

Dependent variable: Log weekly wage and salaries	Coefficients (OLS)	Coefficients (Corrected)	Simple marginal effect (Corrected)
Independent variable			
Constant	5.766** (0.008)	5.689** (0.010)	
Lambda (mills)		0.220** (0.02)	
Number of observations	169178	175795	
Uncensored observations		169178	
Adjusted R-squared	0.239		

Note:

a. Standard errors are in parentheses. Significance at 1%level denoted by ***, 5% level denoted by **, significance at 10% level denoted by *

b. Weighted by individual weighting factor

Source: Statistics Canada, 2001 and 2006 censuses

6.1 EFFECTS OF POLICY ON WAGE GAP

Wage gap outside of Ontario

The coefficient of "Non-permanent residents" indicates that, if the individual is a non-permanent resident outside Ontario in 2001, he or she is predicted to earn a wage that is approximately 21.4% lower than that earned by citizens outside Ontario in 2001.

The wage gap between these two groups in the rest of Canada in 2001 is predicted to be 21.4%

By combining the coefficients of "Non-permanent residents 2006"and "Non-permanent residents" and "2006" together, it could be observed that non-permanent residents outside Ontario in 2006 are predicted to earn a lower wage by 20.4% $(1 - e^{0.074-0.240-0.061})$ than that earned by the base group "citizens outside Ontario in 2001" (cet. par.). By combining this with the positive effect of variable "2006", it could be observed that

being a Non-permanent residents outside Ontario in 2006 is predicted to earn lower wage by 26% ($1 - e^{0.074-0.240-0.061-0.074}$) than that earned by citizens outside Ontario in 2006 (cet. par.). The wage gap between these two groups in the rest of Canada in 2006 is predicted to be 26%. Table 6 indicates that being a non-permanent resident outside Ontario in 2001 has a strong negative effect on the wages received relative to the citizens outside Ontario in 2001. In a word, the wage gap between these two groups outside of Ontario is extended from 2001 to 2006 (21.4% to 26%). When holding all other characteristics constant, the change in the gap between these two groups from 2001 to 2006 is predicted to be 0.059 ($1 - e^{0.074-0.240-0.061-0.074+0.240}$). Non-permanent residents outside Ontario get worse off compared to citizens outside Ontario between 2001 and 2006.

Wage gap in Ontario

The coefficient of variable "Non-permanent residents in Ontario " could be combined with the coefficients of "Non-permanent residents" and "Ontario" to deduce that being a non-permanent resident in Ontario in 2001 is predicted to have a lower wage by 12.0% ($1 - e^{0.112-0.240-0.0002}$) than the one received by the base group (citizens outside of Ontario in 2001) (cet. par.). Combine this with the positive effect of being a Canadian citizen in Ontario in 2001 (11.9% higher than the base group), the wage gap between Canadian citizens and non-permanent residents in Ontario in 2001 is predicted to be 21.4% ($1 - e^{0.112-0.240-0.0002-0.112}$) holding all other characteristics constant.

The coefficient of "Non-permanent resident in Ontario in 2006" indicates a positive but insignificant effect. Combine all coefficients of dummy variables related; it could be observed that non-permanent residents in Ontario in 2006 are predicted to have lower wages by 10.6% ($1 - e^{0.112+0.074-0.240-0.064-0.0002-0.061+0.067}$) than the base group

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(citizens outside of Ontario in 2001). In the meantime, as the coefficient of variable "Ontario*2006" shows, there's a negative effect compared to the base. Combining this with coefficients of "2006" and "Ontario", being a Canadian citizen in Ontario in 2006 is predicted to acquire a higher wage by 13% ($e^{0.112+0.074-0.064} - 1$) than that received by the base group "Canadian citizens outside Ontario in 2001" (cet. par.). Combined them together, non-permanent residents in Ontario are predicted to have lower wages by 20.9% ($1 - e^{-0.240-0.0002-0.61+0.067}$)than that received by citizens in Ontario after the implement of new immigration policy (year 2006) holding all other characteristics constant (i.e. the wage gap is predicted to be 20.9% in Ontario in 2006). It has been discussed that the wage gap between these two groups in Ontario before the implementation of the policy (2001) is predicted to be 21.4%. The wage gap narrows a really small amount from 2001 to 2006 (21.4% to 20.9%). When holding all other characteristics constant, the change in gap from 2001 to 2006 is predicted by the coefficients to be $0.006 \left(e^{(-0.240-0.0002-0.61+0.067)-(0.112-0.240-0.0002-0.112)} - 1 \right) = \left(e^{(-0.61+0.067)} - 1 \right)$.

Difference in change in gap

By using the difference in difference approach, it could be demonstrated whether or not the new policy has a significant positive effect on narrowing the wage gap in Ontario. When holding all other characteristics constant, the difference in change in gap between Ontario and the rest of Canada is predicted to be 0.07 ($e^{(-0.61+0.067)-(-0.061)} - 1$). As Table 6 shows, the coefficient of "non-permanent residents*2006*Ontario" (0.067) is not significant. The difference in change in gap deduced by this coefficient is not significant. In a word, there is no significant positive effect of the new policy on narrowing the wage gap in Ontario.

6.2 EFFECTS OF POLICY ON WAGE

Citizens

By combining the coefficient of variable "Ontario*2006" with coefficients of "2006" and "Ontario", being a Canadian citizen in Ontario in 2006 is predicted to acquire a higher wage by 13% ($e^{0.112+0.074-0.064} - 1$) than that received by the base group "Canadian citizens outside Ontario in 2001" (cet. par.). In the meantime, the coefficient of variable "Ontario" indicates a positive effect of being a Canadian citizen in Ontario in 2001 (11.9% higher than base) (cet. par.). Combining these two effects together, the increase of wages received by Canadian citizens in Ontario from 2001 to 2006 is predicted to be 1.0% ($e^{0.112+0.074-0.064-0.112} - 1$)(cet. par.). As what the coefficient of dummy "2006" has indicated, the differential between Canadian citizens outside Ontario in 2006 and 2001 is predicted to be 7.7% (cet. par.). In a word, all young Canadian citizens are better off from 2001 to 2006 while citizens in Ontario are predicted to have a smaller percentage increase in weekly wages (cet. par.).

Non-permanent residents

By combining the negative effect of variable "Non-permanent residents" with the negative one of "non-permanent residents in 2006" , it could be observed that non-permanent residents outside of Ontario are predicted to increase the wage by 1.3% ($e^{0.074-0.240-0.061+0.024} - 1$) from 2001 to 2006 (cet. par.). Non-permanent residents outside of Ontario are slightly better off in 2006 compared to themselves in 2001.

The negative effect of being a non-permanent resident in Ontario $(1 - e^{0.112-0.240-0.0002})$ could be combined with the negative effect of being a non-permanent resident in Ontario in $2006(1 - e^{0.112+0.074-0.240-0.064-0.0002-0.061+0.067})$ to contribute together to a final increase in the wages of non-permanent residents in Ontario from 2001 to 2006, which is predicted to be $2\%(e^{0.074-0.064-0.061+0.067} - 1)$ (cet. par.). Non-permanent residents in Ontario in 2006 are slightly better off compared to non-permanent residents in 2001. In the meantime, it has been discussed that non-permanent residents outside Ontario are predicted to have a 1.3% increase in the wages from 2001 to 2006. There is no significant improvement in the wages among those groups. In a word, the new policy could not be predicted to be effective on increasing wages of non-permanent residents in Ontario.

On the other hand, combine the negative effect of "Non-permanent residents" (21.4% lower than the base) with the negative effect of being a non-permanent resident in Ontario (12.0% lower than the base), a non-permanent resident in Ontario is predicted to have a higher wage by 11.8% than that received by a non-permanent resident outside of Ontario in 2001 $(e^{0.112-0.240-0.0002+0.240} - 1)$ (cet. par.).

By combining the negative effect of being a non-permanent resident in Ontario in 2006 with the negative effect of being a non-permanent resident in 2006 together, it could be observed that, after the policy, a non-permanent resident in Ontario is still predicted to earn a higher wage by 12.2% $(e^{0.112-0.064-0.0002+0.067} - 1)$ than the same group outside Ontario.

In conclusion, a non-permanent resident in Ontario is predicted to earn a higher wage than the same group outside Ontario. However, no positive effect is observed in the

results of the Heckman two step analysis of whether the Ontario policy effectively increases wages and salaries of young non-permanent resident workers in Ontario.

6.3 CONTROL VARIABLES

The influence of control variables such as educational degree on wages and salaries cannot be disregarded. The results suggest that an educational attainment lower than high school causes young workers to be less competitive in the labor market in terms of asking for high wages. Young workers whose education attainments are less than high school education are expected to earn wages that are 5.5% lower than young workers having high school education when holding all other characteristics constant; young workers who have college certificate or degree are expected to earn 11.8% higher wages than the base (high school education degree) (cet. par.), this value increases to 21.0% when they hold a university degree as the highest degree (cet. par.). The most beneficial educational level for new workers to achieve high wages is a university degree, followed by more than one university degree with 14.8% higher than base. Language always plays an important role in the wage gap between foreign workers and native-born workers. In this regression, I set a dummy variable to represent the effects of language skills using language spoken at home. The regression results show that if an individual reports neither English nor French as the language spoken most often at home, he or she would occupy a relatively unfavorable position in the labor market. The young workers who report neither English nor French as the language spoken at home are predicted to have lower wages by 6.4% than those who do not (cet. par.).

This research attempts to break down the complex influence of work experience and job tenure by focusing on the young labor force aged 20–29, most of whom had just entered

the labor market in the reference year. A better approach would be to use a sample on young workers aged 20–24 with no work experience. Given the small sample size of the "young non-permanent residents (aged 20–24) working in Ontario who had not previously worked," this paper expands the sample size to young workers aged 20–29 with little work experience. To a relatively minimal extent, this expansion allows for the consideration of the influence of work experience. This sample is identified by the significant coefficients of the dummy variables "aged 25 to 29" and "worked before the reference year." In the first coefficient, the correlation between the relatively older workers and wage is significant positive. The relatively older workers (aged 25-29) are expected to have wages higher by 26.7% (cet. par.) than those earned by the younger workers (aged 20–24). This effect is significant and the importance of experience is justified by the coefficients of the second dummy variable, "worked before the reference year." A positive correlation between the wages and salaries and the dummy variable is found. That is, if the young workers did work before the reference year, they are at a more competitive position to ask for higher wages than those who did not; they are also expected to increase their wages by 6.7% (cet. par.). There is a really significantly negative correlation between "Part-time worked" and the wages. If individuals worked mainly part-time in the survey year (2001 or 2006), he or she is expected to earn a lower wage by 41.0% than that earned by worker works mainly full-time. Female young workers are predicted to have wages that are 10.6% lower than those earned by male young workers (cet. par.). According to previous research, women continue to earn less than men in Canada, as in all the countries that are members of OECD (Julie Cool, 2010).

By controlling for the industry and occupations, the regression is used to analyze how different variables contribute to the wages. After a brief analysis of the regression results and an acknowledgment of the explanatory powers of all the predictors, I conclude that there is no significant empirical proof showing that the immigration policy in Ontario

significantly improves the economical outcomes of the young non-permanent residents in Ontario.

CHAPTER 7   CONCLUSION

On November 21 2005, the governments of Ontario and Canada signed the Canada-Ontario Immigration Agreement. Under this policy, Ontario is mandated to develop a pilot provincial nominee program, which includes several beneficial policies, as well as settlement and language training services. Aside from the establishment of these services, the minimum requirements for immigrant application for permanent residency are also modified to extend more benefits to young temporary workers, particularly highly educated workers with Canadian higher educational degrees (e.g., international students). The policy enables international students with graduate degree from any of Ontario's publicly funded universities to directly apply to Opportunities Ontario for nomination as a permanent resident without a requisite job offer. Students who will soon graduate are also eligible to apply. Undergraduate students who have completed at least half of their university studies while studying on a full-time basis in Canada are eligible, provided that they have received a job offer in a managerial, professional, or skilled trade occupation.

From 2001 to 2006, as an increasing number of students went to Canada to complete university studies, the young foreign labor force tended to have increasingly higher educational levels. A reason for this increase may be that a Canadian educational degree helps young international students secure employment and stay in Canada more than it does young foreign workers with overseas education. A Canadian degree is also the fastest way to complete the application process. Temporary workers who have just received degrees in Canada and entered the labor force are desperate to obtain a permanent job contract and maintain employment until they acquire certified work experience. This requirement used to be a prerequisite imposed by all immigration offices for eligibility to stay in Canada. This issue also explains why wage was not an

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important issue for these workers; their bargaining power cannot compete with that of their employers. Jobs in which employees are paid low salaries are still difficult to find. For this reason, I evaluate the Ontario policy, which no longer requires at least 1 year work experience before eligibility is granted. The hypothesis of this paper is that the Ontario policy would effectively reduce the wage gap more or make it widen less than that observed in the rest of Canada, as well as improving the economic outcomes of non-permanent residents.

As the results show, the coefficient of "non-permanent residents*2006*Ontario" is not significant. No positive effect is observed in the results of the Heckman two step analysis of whether the Ontario policy effectively increases wages and salaries of young non-permanent resident workers in Ontario. There are still some meaningful findings in this paper. At first, being a non-permanent resident in Ontario is predicted to earn a higher wage than the same group outside Ontario. Secondly, the wage gap in Ontario is predicted to be smaller than the one in the rest of Canada.

This research attempts to reduce the complex effects of work experience and job tenure by concentrating on the young labor force aged 20–29, most of whom had just entered the labor market in the reference year. According to Table 5, 90.71% of the young workers in the sample of OLS report that they do not have previous work experience or last time worked is in the reference year. Nevertheless, work experience still determines wages and salaries. The importance of experience is justified by the significant positive correlation between wages and salaries and workers who have work experience accumulated before the reference year. Furthermore, the older workers aged 25-29 are associated with wages higher than those earned by relatively younger workers (aged 20-24). On the other hand, focusing on the young labour force inevitably narrows the sample size of data, especially the one for non-permanent residents. As the descriptive statistics

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of variables indicate (section 5.2), non-permanent residents only account for 0.93% of the OLS sample and 0.99% of the sample for Heckman selection analysis. However, due to the large size of the sample, the number of observations of non-permanent residents aged 20 to 29 is still 1,579 in OLS and 1,742 in the Heckman selection analysis, which makes it possible to pin down the policy effect.

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Given the limitations presented by the data, the basic regression in this paper includes modest information on work experience and job tenure. Focusing on the entry earnings of young workers is a simple way of understanding the wage gaps in complex and dynamic labor markets. More accurate and detailed research is required, preferably with substantial data on the characteristics of both immigration and work experience. The immigration program is initiated in 2005. Thus, influence could not be comprehensively and accurately observed only after a year of implementation. The program still runs and helps to fast-track permanent residence status for successful nominees in Ontario since then. Hence, a five to ten years or a twenty years analysis of economic outcomes would provide results that enable an extensive understanding of the PNP, as well as facilitate the development of a better policy that encourages more people to integrate into the Canadian labor market and explore their full potential.

Table 7: The percentage of labour force with university degree or more than one
university degree

Groups	University degree	More than one university degree
Citizens in 2001	18.7%	1.7%
Permanent residents in 2001	25.6%	3.7%
Non-permanent residents in 2001	37.5%	12.4%
Citizens in 2006	20.9%	1.9%
Permanent residents in 2006	30.6%	4.3%
Non-permanent residents in 2006	39.8%	14.8%

Notes:

a. The number of observations (n) 169,178.

b. Weighted by individual weighting factor

Source: Statistics Canada, 2001 and 2006 censuses

Table 8: Heckman selection model two-step estimates (regression model with sample
selection)

Dependent variable: Receive wage and salary or not	Coefficients
Independent variable	
Ontario	5.990 (167.36)
Time2006	0.148** (0.011)
Non-permanent resident	6.157 (1274.84)
Permanent resident	-0.106** (0.019)
Ontario06	-6.1113 (167.36)
Ontario*non-permanent resident	-6.115** (0.099)
Non-permanent residents*06	-6.526 (1274.84)
Non-permanent residents*06*Ontario	6.352 (0.106)

Dependent variable: Receive wage and salary or not	Coefficients
Independent variable	
25-29	0.690** (0.011)
Female	0.591** (0.011)
Report neither English nor French as the language most spoken at home	-0.148** (0.023)
Less than high school	-0.822** (0.016)
College	0.788** (0.013)
University	0.579** (0.016)
More than one university degree	0.171** (0.035)
Mainly worked part-time in the reference year	-0.070** (0.013)
Last worked before the reference year	-0.172** (0.017)
Attendance of school	0.516** (0.013)
Living with family	0.775** (0.012)
Constant	5.766** (0.008)
Rho	0.288
Sigma	0.76
Number of observations	175795
Uncensored observations	169178

Note:

a. Number of observations is 175,795. Number of censored observations is 6617. Number of uncensored observations is 169,178

b. Weighted by individual weighting factor

c. Source: Statistics Canada, 2001 and 2006 censuses

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