"Trends and Sources of Income Inequality between Native-Born Canadians and Immigrants from Non-European Origin, 1996-2006"

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Abstract:

This study examines recent trends in the household income gap between native-born Canadians and immigrants of non-European origin between 1996 and 2006 and uses the Oaxaca decomposition method to determine the role of the individual characteristics and institutional factors on this gap. We used data from the canadian Survey of Labour and Income Dynamics (SLID). Results show that the gap in per capita household income is still wide between the two groups even though it decreased slightly during that period. Moreover, the results proved that differences in individual characteristics explain a small portion of the income gap. Most of it is linked to the differences in the outcome of the characteristics. Finally, analysis of the detailed decomposition indicates that, by implementing additional institutional measures, it would be possible to greatly reduce the economic gap between natives and immigrants. Most importantly, the unexplained part of the income gap can be reduced by 64.2% only by eliminating the unexplained effect of human capital variables.

I. Introduction.

1. Recent immigration trends in Canada:

As one of the countries generally designated as immigration countries (Canada, Australia, United States and New-Zealand), which are characterized by a high proportion of immigrants (between 12% and 23%), Canada has an immigration policy that favours the welcoming of large numbers of new immigrants each year. The arrival of this foreign-born population is a major asset in fighting against population decline and, at the same time, it favours economic growth. With the exception of the United States, in these countries, the fertility rate is generally below the replacement level of 2.1 children per woman. As a consequence, these countries resort to immigration in order to maintain population growth and the vitality of their national economies.

According the 2006 canadian census, immigrants form 19% of the total population and, on average, 200 000 newcomers arrive each year. It is estimated that between 1997 and 2006, more than 2 million people (about 6% of the population) established themselves in the country. Therefore, relative to its total population (31 million in 2006), Canada ranks number one among the countries of immigration and faces the major challenge of making sure that this foreign-born population is fully integrated socially and economically. In 2008, 63% of newcomers belonged to the economic immigrant category, which raises the question of whether their economic integration occurs satisfactorily.

Parallel to the recent rise in the number of new immigrants, there has been an intense diversification of their individual characteristics. Most importantly, the new immigrants arrive from very diverse regions of the world. In fact, while the proportion of immigrants of european origin is on the decline since 1967, when the policy on immigration based on selection was adopted, the proportion of immigrants from developing countries has steadily continue to rise. This trend is confirmed by the 2006 census results which show that 16.1% of recent immigrants were born in Europe compared to 61.6% in 1971. In contrast, the proportion of new immigrants from Asia and the Middle-East grew from 12.1% to 58.3% during the same period. Similarly, the proportion of immigrants from other regions has increased significantly since, for the 2001-2006 period only, the proportion of those who immigrated from Central and South America and the Antilles grew from 8.9% to 10.8% and from 10% to 11% for those whose country of origin is in Africa.

The diversification of the origin ultimately goes in pair with the diversification of other individual characteristics, namely the language spoken, the quality of education and work experience before immigration. These characteristics form the essence of the immigrant human capital at arrival and determine the rate at which the newcomer will integrate the host country's labour market (Chiswick and Miller, 2002, 2007).

2. Political, Economic and Social Implications:

As a country of immigration, Canadian authorities closely watch the evolution of the influx and the composition of the immigrant population. Past changes in immigration policies provide evidence that show that the successive governments keep a close eye not only on the number and the individual characteristics of people that are welcomed each year but also they watch whether the national economy is capable of absorbing this additional labour force. Not withstanding its socio-demographic and humanitarian objectives, the policy of immigrant selection and its successive reforms aim particularly at satisfying the country's economic needs, notably those that are related to the labour market and the improvement of the living standard of Canadians. But, many arrive in Canada only to find themselves confronted to a number of obstacles preventing them from fully participating in the economic realm. Particularly, licensing policies that are used by many professional colleges as well as the preference of the experience acquired in the country by Canadian employers constitute a major hurdle that annihilates the importance of the accumulated human capital before immigration on which the selection is based. The main question we try to answer then is whether, in addition to the measures taken in order to improve the human capital of immigrants, other political measures should be taken to facilitate the economic integration of new immigrants.

Finding an answer to this question is fundamental for at least two reasons. For one thing, if there is inadequateness between the human capital of new immigrants and the labour market, that could undermine the current immigration policy that emphasizes the selection of people who are highly educated and/or have more work experience. For instance, if the existing job openings in the labour market require low levels of qualification, the emphasis put on recruiting high-skilled immigrants will only worsen the rate at which immigrants integrate themselves economically in the Canadian society since they may reject the jobs that are offered to them. This mismatch between human capital

and labour demand can encourage return migration, a phenomenon that will tarnish Canada as a destination country for potential migrants.

Another reason why the successful economic integration of immigrants is important has to do with the consequences of adverse institutional factors. If the low economic performance of immigrants is due to institutional factors, the consequences can be very dramatic. At the social level, that can lead to a serious deterioration of the relations between minority groups and the majority, which is a source of social upheaval as it was the case in France in 2005 when minority-youth led demonstrations resulted in violence between police and minority groups. Even though Canada's situation can hardly compare to France's, we learned that Canada should immediately implement measures that will prevent such events from occurring, particularly because their causes can be controlled by implementing adequate policies that are intended to reduce economic gaps between minorities and the majority. At the economic level, the marginalization of immigrants who form today about 1/5 of the total population, constitutes a substantial economic shortfall. As workers, immigrants can fill the void in the labour market created by those who take their retirement. As the population continues to age, the number of retirees will continue to rise in the future. As consumers, immigrants increase the local market which is an essential factor in assuring economic growth. Finally, as taxpayers, they contribute in increasing public funds that finance the running costs of government and public investments.

Understanding the role of institutional factors on the income gap between immigrants and natives is necessary in any effort that aims at reorienting the current immigration policy and redefining immigrant integration policies. Those efforts must address issues of social justice and equity if any progress is to be made in the elimination of the role played by discrimination on the widening of economic disparities between immigrants and natives and if society is to help foreign-born individuals in their strides to participate in the national economy.

3. Objectives:

Since it has already been established in the literature that, compared to immigrants of non-European origin, immigrants of European origin follow a distinct and more favourable path in their economic integration in North America (Buzdugan and Halli, 2009; Reitz and Skalar, 1997; Hou and Balakrishnan, 1996), this study focuses on three

issues. First, it is intended to broaden our understanding of the existing economic disparities between households of immigrants of non-European origin and the households of Canadian-born individuals by examining recent trends in per capita household income gap between 1996 and 2006. Second, we analyse by group the role of the different factors that determine household income as well as the changes that occurred during that period. Finally and most importantly, we seek to determine the source of the income gap between these two groups by using the Oaxaca-Blinder[1] mean decomposition method. The method can help detect whether recent reforms in the Canadian immigration policy led to any lowering of the hurdles faced by non-European immigrants in their economic integration process. It specifically allows determining two types of sources. One is the portion of the gap that is due to the differences between immigrants and native in personal endowments. The other is the portion of the gap that is due to differences in the outcome of those characteristics. The existence of differences in income between immigrants and natives has already been confirmed in a number of studies (Frenette and Morissette, 2005). Therefore, the present study focuses on analyzing particularly the effects of the criterions that are used in the selection of immigrants, (the level of education, profession and the language spoken) on the income gap.

In the next section we review the previous findings on the analysis of the income gap between immigrants and natives. In section 3 and 4, we describe respectively the data and the method used. Results will be presented in section 5. Finally, we discuss the results and conclude in section 6.

II. Review of results of past studies:

Studies on immigration have burgeoned during the past twenty years and, most recently, the economic performance of immigrants kept the most attention of researchers (Fong and Chan, 2008). Some economists have profoundly analyzed the effect of immigration on the employment of natives (Borjas, 2003; Ottaviano and Peri, 2006). Others conducted in-depth studies in the assimilation process of immigrant workers according to the length of their residency in the host country by putting emphasis on the rate at which the wage of immigrant catches up that of natives (Chiswick, 1986, Lalonde et Topel, 1992, Card, 2005). Economic studies have also shown that large differences

[1] This method has been frequently used in similar studies such as the analysis of wage differences between men and women and between different ethnic groups.

exist between the economic performance of immigrants and natives in the labour market (Borjas, 1994; Frenette et Morissette, 2005).

The first studies in Canada were more interested in the growth capacity of immigrants' wages and have compared the gains at arrival between different immigrant cohorts and between immigrants and natives. For instance, Baker and Benjamin (1994) found that gains at arrival decreased between 11% and 18% for the 1976-1980 cohort compared to the 1966-1970 cohort. Similarly, those who arrived between 1981 and 1986 earned between 19% and 20% less compared respectively to the 1976 and 1980 cohorts. Therefore, the authors concluded that the rate at which the gains of new immigrants grew through time has decreased. Bloom, Grenier and Ganderson (1995) obtained similar results. Their study concluded that, while the 1971 immigrant male cohort earned 5% less at arrival compared to Canadian born men, the 1981 and 1986 cohorts earned respectively 14% and 22% less compared to Canadian born men. The same study showed that there has been a decrease in income growth for immigrant men. In fact, whereas men belonging to the 1961-1965 immigrant cohort saw their income catches up the income of Canadian born men in 12 years, the growth rate of the income of immigrants dramatically declined to the point where immigrant men belonging to the 1976-1980 cohort will see parity between their income and that of Canadian born men only in 74 years and parity will occur in 136 years for the 1981-1986 cohort. Nevertheless, Grant (1999) noticed a turnaround during the 1980s. Using the 1991 census data, she noticed an important slowdown in the decline of the income growth during the 1980s and an acceleration of income growth of new immigrants (about 17% between 1980 and 1985, and 15% between 1985 and 1990). Using more recent data, Wanslander (2003) confirmed that there has been a decline in gains for immigrants who settled in Canada in the 1990.

In order to clarify the diverging conclusions of these studies, Frenette and Morissette (2005) combined data from all censuses conducted between 1981 and 2001 to not only capture the recent trends of the immigrant income but also to do an in-depth analysis that includes women. In fact, most of the previous research has used a sample of immigrant men and the difference between the average wage of immigrant workers and natives as an indicator of the economic assimilation of immigrants. Their study revealed a trend of decreasing gains during the 1981-2001 period both for immigrant men and women. In particular, 1981 census results showed that recent immigrant men (those who arrived in the past five years) earned 11% less compared to Canadian born men. The gap

has considerably increased for recent immigrants who were identified in the 1986 census because they earned 22% less compared to Canadian born men. The authors found also that the decline has slowed down during the 1985-1990 period, which confirmed Grant's findings, and resumed its steepness between 1990 and 1995 as the difference reached 33%. Finally, between 1995 and 2000, the gains at arrival have improved since the difference was reduced to 22%. In any case, these results indicated that the difference between immigrant wages and natives' doubled from 1980 to 2000. Similar results were found between immigrant and Canadian born women.

Nevertheless, Frenette and Morisette concluded that the rate of increase in the gains of recent immigrants has improved over time. For instance, men belonging to the 1975-1979 immigrant cohort have seen their wage increase by 12% between 1980 and 1990, five years after their arrival. For the same length of time, those belonging to the 1980-1985 and 1985-1990 cohorts have seen the rate of increase of their wage reach respectively 20% and 21%. However, despite this more accelerated rate of increase, the propensity of more recent cohorts to catch up with the natives in terms of wages has generally decreased mainly because of the steep decline in initial gains at arrival. This was also found to be true for immigrant women cohorts. A more detailed analysis showed that the decrease in initial gains cannot be linked to the fact that immigrant individual characteristics have changed because, during this period of observation, these characteristics have improved over time. For instance, an analysis of the gains according to age at arrival and work experience showed that it is rather the outcome from those characteristics that deteriorated over time. According to these two authors, increasingly, Canadian employers devaluate the work experience acquired before migration.

These results prove that the guarantee of equity and equality endorsed by various Canadian laws and recommendations, particularly the Charter of Rights and Freedom (1982) and the Abella Commission Report (1984) are far from being implemented satisfactorily. As one of the four groups that are targeted by these laws (the other three being women, aboriginals and the disabled) and despite an immigration policy that encourage their arrival to Canada, visible minorities still remain in an economically disadvantaged position. In the past twenty years, the volume of studies that examined the causes of the low economic performance of visible minorities in Canada has greatly

increased.[2]. These studies have demonstrated that the income gap between the different ethnic groups cannot be solely attributed to observable characteristics like age, education and language. Some have even pointed out that discrimination is largely to blame. But, as it was mentioned earlier, other unobservable factors play a role in determining the gap in gains such as the devaluation of skills acquired outside the country.

Hence, using the mean decomposition method of Blinder-Oaxaca (1993), Christopher and Swidinsky (1994) were able to determine that the part of the income gap that is attributable to the difference in individual characteristics. Analysis of the 1989 Labour Market Activity Survey (LMAS) allowed them to conclude that, for men who identified themselves as belonging to a visible minority group, only 23.8% of the gap in gains can be attributed to personal endowments. The other part, that is 73.2% of the gap, can only be explained by unobserved factors, discrimination being one of them. It is important to mention that, in their study, the variable "visible minority" did not account for immigration status, in other words there was no distinction whether or not the individual is an immigrant.

Pendakur and Pendakur (1998) conducted a similar study that used the Oaxaca-Blinder decomposition that accounted for both visible minority and immigration statuses. They were able to determine the role of the different factors on the income gap between immigrants and non-immigrants based on the visible minority status. Their results also demonstrated that a large portion of the income gap between visible minority men who are immigrants and Canadian born men can be attributed to the unobserved factors. Their analysis of the 1991 census data has shown that, in 1990, only 42% of the income gap can be explained by differences in personal endowments.

Walters, Phythian and Anisef have also used the Oaxaca mean decomposition to analyse the sources of income gap between immigrants and natives with the specific goal of unveiling the role of human capital and social capital on the wage gap. Their decomposition allowed them to conclude that the wage gap between recent immigrants and natives depends more on the level of education and experience in the Canadian labour market. Their findings proved the human capital hypothesis that attributes the

[2] Some examples are Howland et Sakellariou, 1993; Christofides et Swidinsky, 1994; Stelcner et Kyriazis, 1995; Baker et Benjamin, 1997; de Silva,1992, 1997; Li, 1999, 2001; Reitz, 2001; Hum et Simpson, 2000; Pendakur et Pendakur,1998, 2002;, Wanner, 1998; Swidinsky et Swidinsky, 2002; Adamuti-Trache et Sweet, 2005; Yoshida et Smith, 2008

sources of the income gap to the differences that exist between immigrants and natives in education and work experience. Their study also found that a part of the gap can be linked to variables that measure social capital.

The review of these studies helped us make three important observations. First, previous studies have more or less explained the factors that contribute or hinder the economic integration of immigrants. However, most of those studies have neglected the accounting of the distinctiveness of immigrants from developing countries. Second, when the distinction is made between immigrants of European and non-European origins, the comparisons are frequently based on wages (Nakhaie, 2006). This approach limit the conclusions that can be drawn concerning the real level of poverty and inequality within the households of immigrants from developing countries because of the fact that wages do not reflect the level of unemployment which is generally higher for minority groups. Wages do not account either for the other sources of revenue. Needless to highlight that previous studies have demonstrated that household decision making involves more than one person in the household (Vogler, Lyonette and Wiggins, 2008). For that reason, household income should be used rather than wages alone since the latter do not reflect the true nature of the unified household decision making process. Finally, none of these studies examine the separate effect of each one of these factors on the income gap particularly for the human capital variables that are most important to the Canadian immigration policy. This study intends to contribute in feeling those gaps.

III. Data and Methods:

We use cross-sectional data from the Survey of Labour and Income Dynamics (SLID) for 1996 and 2006, which corresponds to data from panel 1 and 2 for 1996 and panel 3 and 4 for 2006. Each panel follows participants for six years and contains about 15000 households and 30000 individuals. Respondents are selected from the monthly Labour Force Survey (LFS). With the exception of residents in Yukon, The Northern Territories and Nunavut, all residents of Canada are part of the target population. In January of each year, interviewers collect information on labour market participation and education for the previous year. In May they also collect information about household income. In order to reduce the rate of non response, respondents can authorize Statistics Canada to examine their T1 tax form in order to collect their financial information. More than 80 percent of respondents give the authorization (Statistics Canada, 2004).

We selected households whose respondent was above the age of 15. In order to be included in the sample of immigrants of non-European origin, the person must have been born outside Canada, Europe, the United States, Australia and New-Zealand. With those restrictions, our final sample had 22935 people in 1996 of whom 22008 were natives and 927 were immigrants of non-European origin. For 2006, the final sample has 21718 people of whom 20544 were natives and 1174 were immigrants of non-European origin.

We used the natural logarithm of the per capita household income as the dependant variable. With the exception of the variables age and age squared, all the independent variables have been regrouped in sub-categories that are transformed into dummy variables. In some cases, the regrouping was done in way that will facilitate the interpretation of the results and in accordance with the number of observations. That was the case for the variables "level of education", "region of residence", "marital status" and "occupation".

The level of education is measured by the highest degree earned and contains four categories: (1) No degree, which includes all individuals who never attended school and those who did not finish high school; (2) those who graduated in high school and never continue their studies or did so but never earned a post-secondary degree; (3) those who earned a certificate or diploma after secondary school but never attended university or did so but never earned a university degree; (4) those who earned a certificate or a diploma at the university level. It is important to highlight that the SLID does not distinguish whether the degree was earned before or after migration. Region of residence is regrouped into five sub-categories: Ontario, Quebec, British Columbia, the Prairies (which include Alberta, Saskatchewan and Manitoba) et the Atlantic (which includes New-Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland and Labrador). The occupation variable also requires some clarification on its measurement. In fact, the SLID classified occupations according to the National Occupational Classification for Statistics (NOC-S), which identifies ten broad categories that are divided into 140 minor sub-categories. This classification has been respected but it was necessary to create an additional sub-category for those who did not report their occupation either because they did not have one or they failed to do so righteously or not.

One of the main objectives of the study is to identify the sources of the gap in per capita household income between immigrants and natives and to find out whether any significant changes occurred between 1996 and 2006 in the role played by those sources.

For that reason, we use the Blinder and Oaxaca mean decomposition method (Blinder, 1973; Oaxaca 1973). On the one hand, the decomposition helps to measure the influence of the individual characteristics, in particular the level of education, the occupation and the mother tongue which are three of the main criterion used to select immigrants. On the other hand, by using this decomposition it will also be possible to determine the influence of the unobserved factors such as the non-recognition of the skills acquired before immigration and discrimination.

Applying the Blinder-Oaxaca decomposition on the income equation of immigrants and natives gives us to possibilities:

$$\overline{Y}^{n} - \overline{Y}^{i} = \hat{\beta}^{n}(\overline{X}^{n} - \overline{X}^{i}) + \overline{X}^{i}(\hat{\beta}^{n} - \hat{\beta}^{i}) \quad (1)$$

$$\overline{Y}^{n} - \overline{Y}^{i} = \hat{\beta}^{i}(\overline{X}^{n} - \overline{X}^{i}) + \overline{X}^{n}(\hat{\beta}^{n} - \hat{\beta}^{i}) \quad (2)$$

where $\overline{Y}$ represents the natural logarithm of the average per capita household income and *i* and *n* designate immigrants and natives respectively. $\overline{X}$ represents a vector of the average values of the respective characteristics of immigrants and natives that determine income. Finally, $\hat{\beta}$ is a vector of the coefficients estimated by the least squared method.

In both cases, the first term in the right hand of the equation indicates the portion of the income gap that is explained by the individual characteristics and the second term indicates the portion of the income gap that can be linked to the unobserved characteristics. These two equations are very much similar with the exception that equation (1) supposes that, if there is no discrimination, the native's model would prevail in a non-discriminatory situation. As a consequence, the native's model can be used in estimating the hypothetical income of immigrants in a non-discriminatory regime. In contrast, model (2) supposes that, if there is no discrimination, the immigrants' model would prevail.

One of the main issues highlighted in previous studies has been how the choice of the non-discriminatory model is made. Since results vary according to this choice, economists have suggested a number of solutions (Jann, 2008; Cotton, 1988). In the literature, it is often considered that the non-discriminatory model is halfway between the two. In the area of economic integration of immigrants, Walters, Phythian and Anisef (2006) have, for instance, applied the solution suggested by Cotton (1988) which assumes

that the prevailing model in a non-discriminatory situation would be a weighted average of the coefficients estimated in the two models. Others, like Reimers (1983), proposed to use an unweighted average of the coefficients. In our case, we apply Neumark (1988)'s suggestion of estimating a pooled model that lumps together the data for each group. According to this approach, the decomposition can be done as follows:

$$\overline{Y}^{n} - \overline{Y}^{I} = (\overline{X}^{n} - \overline{X}^{i})\hat{\beta}^{*} + \overline{X}^{n}(\hat{\beta}^{n} - \hat{\beta}^{*}) + \overline{X}^{i}(\hat{\beta}^{*} - \hat{\beta}^{i}) \qquad (3)$$

The vector of the estimated coefficients and the average values of the independent variables in (3) remain the same as in (1) and (2). However, in (3) we have the new vector $\hat{\beta}^{*}$ that represents the estimated coefficients of the « pooled model ». In this formulation, the unexplained portion of the gap is divided into two sub-portions. The first, namely $\overline{X}^{n}(\hat{\beta}^{n} - \hat{\beta}^{*})$ in (3), represents that part of the income gap that can be linked to the overestimation of the native's characteristics if the term is positive. In other words, this term represents the advantage of being Canadian born. The second, namely $\overline{X}^{i}(\hat{\beta}^{*} - \hat{\beta}^{i})$ in (3), represents that part of the income gap that can be explained by the underestimation of the immigrants' characteristics if it is positive. On the other hand, if this term is negative, it translates into the opposite, meaning that it indicates the portion of the gap that is explained by the overestimation of immigrants' characteristics. In short, the last two terms of equation (3) represent respectively the favourable treatment of natives (or unfavourable treatment if it is negative) and the unfavourable treatment of immigrants (or favourable treatment if it is negative).

Not only does the Blinder-Oaxaca method let us split the sources of the income gap into two parts (explained and unexplained), it also allows us to determine the role that each independent variable plays on the gap. Since the total effect of the characteristics on the gap is the sum of the effects of all variables, it is therefore possible to decompose the total effect by doing the following:

$$(\overline{X}^{n} - \overline{X}^{i})\hat{\beta}^{*} = (\overline{X}_{1}^{n} - \overline{X}_{1}^{i})\hat{\beta}_{1}^{*} + (\overline{X}_{2}^{n} - \overline{X}_{2}^{i})\hat{\beta}_{2}^{*} + \ldots \qquad (4)$$

where $\overline{X}_{1}$ and $\overline{X}_{2}$ are the averages of the independent variables and $\hat{\beta}_{1}^{*}$ and $\hat{\beta}_{2}^{*}$ are respectively the estimated coefficients of those variables in the non-discriminatory equation. In that case, $(\overline{X}_{1}^{n} - \overline{X}_{1}^{i})\hat{\beta}_{1}^{*}$ represents the portion of the gap that can be linked

to differences in the averages of the variables $\overline{X}_1^n$ and $\overline{X}_1^i$ and $(\overline{X}_2^n - \overline{X}_2^i)\hat{\beta}_2^*$ is the portion of the gap that can be linked to differences in the averages of the variables $\overline{X}_2^n$ and $\overline{X}_2^i$.

It is also possible to determine the contribution of each factor on the unexplained part. More specifically, the advantage (or disadvantage if the term is negative) of being native can be decomposed in a detailed way by proceeding as follows:

$$\overline{X}^n(\hat{\beta}^n - \hat{\beta}^*) = \overline{X}_1^n(\hat{\beta}_1^n - \hat{\beta}_1^*) + \overline{X}_2^n(\hat{\beta}_2^n - \hat{\beta}_2^*) + \ldots \quad (5)$$

where $\overline{X}_1^n(\hat{\beta}_1^n - \hat{\beta}_1^*)$ represents the unexplained part of the gap that can be linked to the preference of natives for the $\overline{X}_1$ characteristic and $\overline{X}_2^n(\hat{\beta}_2^n - \hat{\beta}_2^*)$ the unexplained part of the gap that can be linked to the preference of natives for the $\overline{X}_2$ characteristic.

Similarly, the disadvantage of being an immigrant (or advantage if the term is negative) can also be decomposed in a detailed way as follows:

$\overline{X}^i(\hat{\beta}^* - \hat{\beta}^i) = \overline{X}_1^i(\hat{\beta}_1^* - \hat{\beta}_1^i) + \overline{X}_2^i(\hat{\beta}_2^* - \hat{\beta}_2^i) + \ldots$ where $\overline{X}_1^i(\hat{\beta}_1^* - \hat{\beta}_1^i)$ represents the portion of the income gap that can be linked to the non-preference of the immigrants for $\overline{X}_1$ characteristic and $\overline{X}_2^i(\hat{\beta}_2^* - \hat{\beta}_2^i)$ the portion of the income gap that can be linked to the non-preference of the immigrants for the $\overline{X}_2$ characteristic.

The Blinder-Oaxaca method has recently seen major developments that allow its use in the STATA program. In fact, an ado program developed by Ben (2008) allows us to apply all the types of decomposition that we just described. We used that program in our analysis.

IV. Results:

1. Recent trends in per capita household income:

As demonstrated in earlier studies that analyze income differences between immigrants and Canadian born individuals, the results presented in Table 1 suggest that, on average, the per capita household income is higher for natives. In fact, while a household of natives earned $16580 per person in 1996 and $25364 in 2006, a household of immigrants of non-European origin earned $11242 in 1996 and $19580 in 2006. However, there has been a reduction of the income gap between the two types of households because, in 1996, immigrants' households earned about 67.8% of the per

Table 1 : Average per capita household income				
	1996		2006	
	Natives	Non-European Immig.	Natives	Non-European Immig.
Sex				
Male	17 691	12 962	27 142	23 091
Female	14 407	8 685	22 423	14 065
Region of residence				
British Columbia	18 160	9 544	26 239	21 003
Prairies	16 510	11 495	28 104	21 562
Ontario	17 877	12 985	27 107	19 594
Quebec	15 818	8 072	23 182	15 020
Atlantic	12 470	15 407	19 366	24 215
Marital Status				
Married or in a common law relationship	15 057	9 910	22 769	15 757
Divorced or separated	19 084	11 005	29 788	36 850
Widowed	18 273	15 087	34 519	14 631
Single	18 926	14 945	27 385	25 858
Type of economic family				
One person living alone	23 736	20 908	34 748	45 625
Married couples without children	19 843	15 722	27 959	27 973
Married couples with children	11 943	9 057	18 009	12 493
Single-parent household	9 593	8 293	17 203	11 714
Mother tongue				
English	17 102	17 272	26 448	31 599
French	15 503	12 488	23 236	21 873
Neither English nor French	16 779	9 333	24 374	16 909
Highest degree earned				
No Degree	12 301	8 667	16 751	10 976
Secondary	15 196	9 323	21 575	14 396
College	15 809	10 133	24 391	15 623
University	25 700	16 822	36 744	30 714
Occupation				
No occupation declared	12 479	7 427	21262	17729
Management, business, finance and administrative occupations	21 547	15 385	34 065	32 542
Natural and Applied Sciences and Related occupations	22 761	26 520	33 903	22 356
Health occupations	21 894	18 513	30 551	26 598
Occupations in Social Science, Education, Government Service and Religion	22 905	17 017	30 510	22 728
Art, Culture, Recreation and Sport occupations	21 261	11 063	27 182	24 994
Sales and Service Occupations	14 912	10 182	22 595	13 372
Trades, Transport and Equipment Operators and related Occupations	16 122	10 662	23 928	14 020
Occupations Unique to Primary Industry	15 891	6 332	22 534	9 791
Occupations Unique to Processing, Manufacturing and Utilities	17 729	9 505	21 854	12 526
Activity during the year				
Non-working/unemployed all year	11 511	5 755	17 997	10 633
Employed all year	18 902	13 633	28 597	21 147
Employed half of the year	15 903	11 368	18 986	13 921
Total population	**16 580**	**11 242**	**25 364**	**19 580**

Table 2: Ratio of per capita household income of immigrants of non-European origin and Canadian born individuals		
	1996	2006
Occupations Unique to Primary Industry	39,8	43,4
Occupations Unique to Processing, Manufacturing and Utilities	53,6	57,3
Trades, Transport and Equipment Operators and related Occupations	66,1	58,6
Non-working/unemployed all year	50,0	59,1
Sales and Service Occupations	68,3	59,2
Women	60,3	62,7
College degree	64,1	64,1
Quebec	51,0	64,8
No degree	70,5	65,5
Natural and Applied Sciences and Related occupations	116,5	65,6
Secondary school diploma	61,4	65,7
Single-parent household	86,4	68,1
Married or in a common law relationship	65,8	69,2
Married couples with children	75,8	69,4
Neither English nor French	55,6	69,4
Ontario	72,6	72,3
Employed half of the year	71,5	73,3
Employed all year	72,1	73,9
Occupations in Social Science, Education, Government Service and Religion	74,3	74,5
Prairies	69,6	76,7
Total population	**67,8**	**77,2**
British Columbia	52,6	80,0
University Degree	65,5	83,6
Men	73,3	85,1
Health occupations	84,6	87,1
Occupations in Art, Culture, Recreation and Sport	52,0	92,0
French	80,6	94,1
Single	79,0	94,4
Management, business, finance and administrative occupations	71,4	95,5
Married couples without children	79,2	100,1
English	101,0	119,5
Divorced or separated	57,7	123,7
Atlantic	123,6	125,0
One person living alone	88,1	131,3

	Table 3 : Change in income ratio			
		1996	2006	Change in income ratio between 1996 and 2006
Significant increase of the income gap	Natural and Applied Sciences and Related occupations	116,5	65,9	-50,6
	Widowed	82,6	42,4	-40,2
	Single-parent household	86,4	68,1	-18,4
Moderate increase of the income gap	Sales and Service Occupations	68,3	59,2	-9,1
	Trades, Transport and Equipment Operators and related Occupations	66,1	58,6	-7,5
	Married couples with children	75,8	69,4	-6,5
	No degree	70,5	65,5	-4,9
No change more or less	Ontario	72,6	72,3	-0,4
	College diploma	64,1	64,1	0,0
	Occupations in Social Science, Education, Government Service and Religion	74,3	74,5	0,2
Moderate decrease of the income gap	Atlantic	123,6	125,0	1,5
	Employed all year	72,1	73,9	1,8
	Employed half of the year	71,5	73,3	1,8
	Women	60,3	62,7	2,4
	Health occupations	84,6	87,1	2,5
	Married or in a common law relationship	65,8	69,2	3,4
	Occupations Unique to Primary Industry	39,8	43,4	3,6
	Occupations Unique to Processing, Manufacturing and Utilities	53,6	57,3	3,7
	High school diploma	61,4	66,7	5,4
	Prairies	69,6	76,7	7,1
	Non-working/unemployed all year	50,0	59,1	9,1
	Total Population	**67,8**	**77,2**	**9,4**
Significant decrease of the income gap	Men	73,3	85,1	11,8
	French	80,6	94,1	13,6
	Neither English nor French	55,6	69,4	13,8
	Quebec	51,0	64,8	13,8
	Single	79,0	94,4	15,5
	University degree	65,5	83,6	18,1
	English	101,0	119,5	18,5
	Married couples without children	79,2	100,1	20,8
	Management, business, finance and administrative occupations	71,4	95,5	24,1
	British Columbia	52,6	80,0	27,5
	Occupations in Art, Culture, Recreation and Sport	52,0	92,0	39,9
	One person living alone	88,1	131,3	43,2
	Divorced or Separated	57,7	123,7	66,0

capita income of a household of natives and by 2006 the ratio went up to 77.2%. The analysis of the income ratios by characteristic (see Table 2) suggests that, during that ten-year period, households of immigrants of non-European origin have seen their income rise faster than the households of Canadian born individuals. In fact, while the income ratios[3] by characteristics vary between 39.8 and 123.6 in 1996, in 2006 these ratios varied between 43.4 and 131.3. However, the advantage of natives in terms of household income is very much generalized. For instance, in 1996, members of immigrants' households had on average earned more than members of natives' households in three cases only: when they reside in the Atlantic, had their occupation in the natural sciences and other related fields or speak English as a mother tongue. In 2006, there have been improvements because, in addition to those three cases, immigrants tended to earn more when they lived alone and when they were separated or divorced.

The 2006 income ratios indicate that the disadvantage of immigrants has remained critical[4] when members of their household held an occupation that is unique to the primary sector and in the processing, manufacturing and utility sector, in trades, transport and equipment operations and related occupations, in natural and applied sciences and related occupations and in sales and service industry. Similarly, the disadvantage was critical in the households of those who were not active or unemployed, those whose respondent is a woman or does not hold at least one postsecondary degree and those who are located in Quebec.

However, for most of the characteristics, the income gap between the households of immigrants and natives has significantly or moderately[5] shrunk during the period (see Tableau 3). The gap has widen significantly only when the occupation of the respondent is in the areas of natural and applied sciences and related occupations, when he or she is widowed and when they live in a single parent household. It has widen moderately only

[3] A ratio that is less than 100 means that the average per capita household income of immigrants is lower that the average per capita household income of natives; A ratio of 100 means that there is parity between the revenue of the two types of households; and a ratio that higher than 100 means that the average per capita household income of immigrants is higher than the average per capita household income of natives.

[4] The income gap is considered critical when one of the groups earn less than 2/3 of the average income of the other group.

[5] The change in the income ratio between 1996 and 2006 can be classified in one of the following categories: (1) Significant increase of the income gap when the ratio decreased 10 points or more, (2) Moderate increase of the income gap when the ratio decreased between 1 and 9 points, (3) No change in income gap when the change in ratio is between -1 and 1, (4) Moderate decrease of the income gap when the ratio increased between 1 and 9 points and (5) Significant decrease in income gap when the ration has increased by 10 points or more.

for those whose occupation is in the area of sales and services, in trades, transport and equipment operations and related occupations, those who live in families living as married couples with children and those who hold no degree.

These results show that the advantage of natives in terms of per capita household income has persisted during the 1996-2006 period and remains generalized if one takes into account the individual characteristics of respondents and their households. But, the trend in the average per capita household income shows that the gap between households of immigrants and natives has, in most cases, decreased significantly or moderately.

3. Models:

Tables 4 and 5 present respectively the results of the models for natives and non-European immigrants for 1996 and 2006. The models suggest that there are significant differences between the two groups in terms of the influence of the independent variables used to estimate the per capita household income. In particular, the influence of the three human capital variables differs according to the group. First, while the influence of all the dummy variables that measure the level of education is significant ($p < 0.05$) in both models of natives, only holding a college degree or a university degree in 2006 tends to significantly improve the household income of non-European immigrants. Second, the dummy variables measuring occupation significantly contributed to the increase in the natives' household income compared to those who have declared their occupation, with the exception of those who worked in the primary sector in both year and in the Art, Culture, Recreation and Sport sector in 2006. In contrast, the household income of the non-European immigrants improves significantly only when the respondent's occupation is in the Natural and Applied Sciences and Related fields in 1996 and in the health sector both in 1996 and 2006. Third, in comparison with households whose respondents speak neither English nor French as a mother tongue, households of natives who speak one of the official languages as a mother tongue tend to have a significantly higher income level whereas, for non-European immigrants, only those who speak English as a mother tongue have a significantly higher income.

Table 4 : Per capita household income equations for natives				
	1996		2006	
	Coefficients	SE	Coefficients	SE
Age	0,0352***	0,0026	0,0321***	0,0028
Age squared	-0,0241***	0,0030	-0,0219***	0,0032
Sex				
Female (ref.)				
Male	0,2601***	0,0104	0,2595***	0,0111
Highest degree earned				
No degree (ref.)				
High School degree	0,1833***	0,0124	0,1830***	0,0154
College degree	0,2539***	0,0122	0,2587***	0,0150
University degree	0,5384***	0,0158	0,6114***	0,0173
Mother tongue				
Neither English nor French (ref.)				
French	0,1078***	0,0257	0,1099***	0,0274
English	0,1144***	0,0216	0,1097***	0,0228
Region of residence				
Quebec (ref.)				
Atlantic	-0,1118***	0,0182	-0,0859***	0,0207
Ontario	0,1049***	0,0182	0,1488***	0,0210
Prairies	0,0124	0,0192	0,1350***	0,0217
British Columbia	0,1321***	0,0227	0,1048***	0,0259
Type of economic family				
One person living alone (ref.)				
Married couple without children	0,3297***	0,0184	0,1759***	0,0176
Married couple with children	-0,2215***	0,0179	-0,3368***	0,0186
Single-parent household	-0,4187***	0,0184	-0,4157***	0,0196
Marital status				
Single (ref.)				
Married or living in a common law relationship	-0,4235***	0,0194	-0,2934***	0,0193
Divorced or separated	0,0636***	0,0168	0,0533**	0,0176
Widowed	0,2235***	0,0254	0,2792***	0,0297
Occupation				
No declared occupation (ref.)				
Management, business, finance and administrative occupations	0,2761***	0,0159	0,2140***	0,0168
Natural and Applied Sciences and Related occupations	0,3559***	0,0244	0,2481***	0,0244
Health occupations	0,3350***	0,0255	0,2581***	0,0252
Occupations in Social Science, Education, Government Service and Religion	0,2382***	0,0232	0,0732**	0,0236
Art, Culture, Recreation and Sport	0,1560***	0,0439	-0,0046	0,0439
Sales and Service Occupations	0,0509**	0,0171	-0,0424*	0,0188
Trades, Transport and Equipment Operators and related Occupations	0,2041***	0,0165	0,0860***	0,0185
Occupations Unique to Primary Industry	0,0241	0,0237	-0,0531	0,0284
Occupations Unique to Processing, Manufacturing and Utilities	0,3201***	0,0221	0,0729**	0,0259
Activity during the year				
Non-working/unemployed all year (ref.)				
Employed all year	0,4940***	0,0181	0,5643***	0,0193
Employed half of the year	0,2496***	0,0173	0,3062***	0,0201
Constant	7,6071***	0,0556	7,9592***	0,0623
N	21 488		18 356	
R^2	0,3621		0,3326	

Level of significance : *** < 0,01, ** < 0,05, * < 0,1,

Table 5 : Per capita household income equations for Non-European immigrants				
	1996		2006	
	Coefficients	SE	Coefficients	SE
Age	0,0434**	0,0158	0,0062	0,0154
Age squared	-0,0300	0,0179	0,0054	0,0170
Sex				
Female (ref.)				
Male	0,2878***	0,0537	0,3021***	0,0500
Highest degree earned				
No degree (ref.)				
High School degree	0,0004	0,0702	0,1425	0,0753
College degree	-0,0067	0,0714	0,2200**	0,0773
University degree	0,1940*	0,0769	0,4673***	0,0766
Mother tongue				
Neither English nor French (ref.)				
French	0,0538	0,1716	0,0331	0,1594
English	0,2686***	0,0572	0,1748**	0,0588
Region of residence				
Quebec (ref.)				
Atlantic	0,1308	0,1706	0,2559	0,1558
Ontario	0,1575	0,0821	0,1708*	0,0826
Prairies	0,0774	0,0871	0,2855**	0,0870
British Columbia	0,0341	0,0898	0,1361	0,0900
Type of economic family				
One person living alone (ref.)				
Married couple without children	0,6013***	0,0888	0,5077***	0,0766
Married couple with children	0,0190	0,0711	-0,0820	0,0597
Single-parent household	-0,1712	0,1031	-0,4045***	0,0936
Marital status				
Single (ref.)				
Married or living in a common law relationship	-0,6171***	0,0826	-0,5387***	0,0767
Divorced or separated	-0,0495	0,1029	0,2460**	0,0925
Widowed	0,3506	0,1736	0,2870	0,1540
Occupation				
No declared occupation (ref.)				
Management, business, finance and administrative occupations	0,1660*	0,0841	0,0788	0,0754
Natural and Applied Sciences and Related occupations	0,4655***	0,1184	0,2251*	0,0931
Health occupations	0,4535***	0,1216	0,2739**	0,1008
Occupations in Social Science, Education, Government Service and Religion	0,1604	0,1356	0,1141	0,1282
Art, Culture, Recreation and Sport	-0,4186*	0,1926	-0,1720	0,1908
Sales and Service Occupations	-0,2042*	0,0862	-0,2062*	0,0851
Trades, Transport and Equipment Operators and related Occupations	-0,0325	0,0987	-0,2240*	0,0889
Occupations Unique to Primary Industry	-0,0492	0,2207	-0,3147	0,2544
Occupations Unique to Processing, Manufacturing and Utilities	0,0146	0,1005	-0,1542	0,0968
Activity during the year				
Non-working/unemployed all year (ref.)				
Employed all year	0,7202***	0,0907	0,6932***	0,0885
Employed half of the year	0,4823***	0,0907	0,4407***	0,0967
Constant	7,1582***	0,3158	8,2375***	0,3278
N	881		931	
R^2	0,4037		0,3907	

Level of significance : *** < 0,01, ** < 0,05, * < 0,1

Also, there are persistent differences on the influence of the demographic variables. For one thing, the age and age squared variables affect household income level significantly in both models of natives. For non-European immigrants, age seems to affect household income in 1996 only. In addition, for both set of models, one of the dummy variables measuring the type of economic family, namely married couples without children, significantly affect the income level. The rest of the variables measuring the type of family show significant differences between immigrants and natives.The most important difference between immigrants and natives is found in the role played by the variable married couples with children which is positively significant for native and non-significant for immigrants. The presence of children in the households of immigrants seems to stimulate household income increase.

The effect of marital status reveals differences between the households of the two groups in terms of revenue. In the natives' model, being married or in a common law relationship negatively affects household income and being divorced, separated or widowed affects it positively. These relationships are logically compatible since household income depends on the number of individual living in it. Therefore, households with married couples or individuals in common law relationships have lower income levels compared to households composed of one person. After marriage or after deciding to live with someone, it is often the case where one of the two people who form the couple decides to stop working or decrease his or her professional activities in order to care for the household particularly when the couple starts to conceive. This is also true for immigrants' households since the effect of the variables "married or living in a common law relationship" is also significantly negative. But, differences between the groups appear when we examine the variables "divorced or separated" and "widowed". For immigrants, the effect of the former was not significant in 1996 but ended up being significant in 2006. For the latter, the effect is not significant in both years. This indicates that the loss of a partner for natives translates into important financial losses in the household contrary to immigrants.

Finally, in contrast to natives, the household income of non-European immigrants is not affected by the region of residence. In fact, in the natives' models, the relation between region of residence and household income level is consistently significant. Particularly, households in the Atlantic region have a per capita income that is significantly lower than households in Quebec. Moreover, households in Ontario and

British Columbia have a per capita income that is significantly higher than households in Quebec. In the immigrants' models, the region of residence does not seem to have an effect on income in 1996 but in 2006 only those who lived in the Prairies had a higher income level than those who lived in Quebec ($p < 0.05$).

The comparison of the two sets of models leads us to make some general and basic observations. First, unlike the natives' households, most of the dummy variables play very little or no role at all in determining the per capita income of the non-European households. Next, we notice that some variables, particularly those used to capture human capital, play a significant role in determining immigrants' household income. This is also true when respondents are men, possess a university degrees, speak English as a mother tongue, are married with no children and work in the health sector. Finally, immigrants' household income is seriously and negatively affected when the respondent is married or is in a common law relationship or when he or she lives in a single-parent household.

4. Income gap decomposition results:

Table 6 presents the results of the decomposition of the household income gap. The difference in log per capita income between households of natives and immigrants was 0.2689 in 1996 of which 0.0494 is explained by the difference in characteristics and 0.2195 by the outcome of those characteristics, in other words it is unexplained. For 2006, the difference was 0.2688 of which 0.0324 can be attributed to the difference in characteristics and 0.2363 to the difference in the outcome. Hence, only 18.4% of the gap in 1996 and 12.1% in 2006 is explained by the difference between the characteristics of immigrants and natives. As it was shown in previous studies that compared the revenue of immigrants belonging to a visible minority group to that of natives (Christofides and Swidinsky, 1994; Pendakur and Pendakur, 1998), most of the gap is explained by differences in outcome.

What is alarming about this finding is the fact that, from 1996 to 2006, the part that is explained by the outcome has dramatically increased whereas the part that is explained by the individual characteristics has decreased. This trend suggests that, increasingly, the unobserved characteristics, such as the non-recognition of the degree of immigrants, the preference of the natives' diplomas and discrimination, are becoming more important in explaining the level of household income for immigrants.

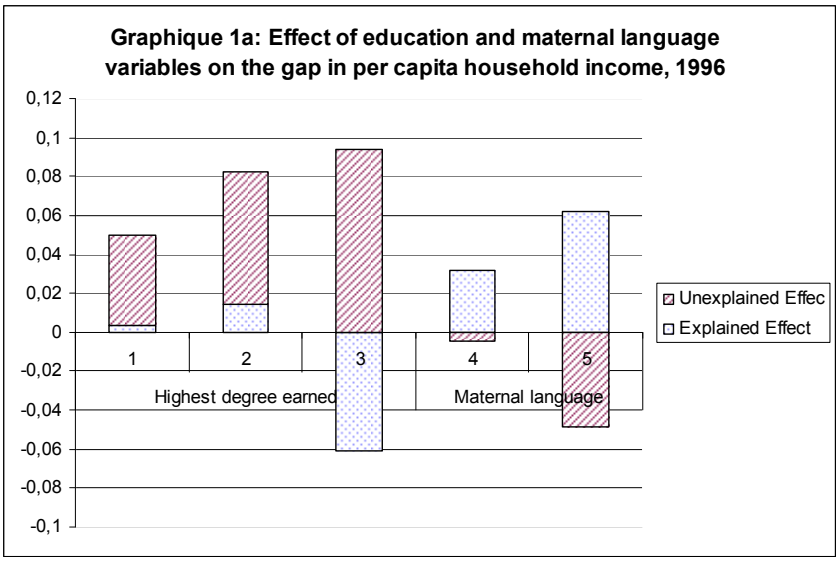
But, since the main objective of this study is to decompose the income gap in order to determine the role that human capital variables play on the level of household income, we proceed in interpreting the results of the detailed decomposition.

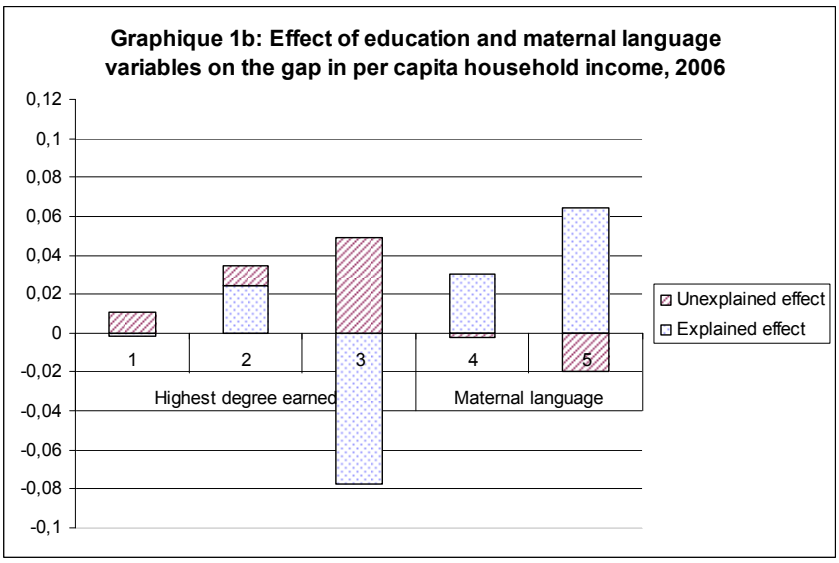
Tableau 6: Effects of human capital variables on per capita household income gap

	1996		2006	
	Effect	%	Effect	%
Highest diploma earned				
Effect linked to differences in characteristics	-0,0431	-16,0	-0,0542	-20,2
Effect linked differences in outcome	0,2081	77,4	0,0703	26,1
Both effects	0,1649	61,3	0,0161	6,0
Mother tongue				
Effect linked to differences in characteristics	0,0941	35,0	0,0940	35,0
Effect linked differences in outcome	-0,0526	-19,5	-0,0216	-8,0
Both effects	0,0415	15,4	0,0724	26,9
Occupation				
Effect linked to differences in characteristics	-0,0107	-4,0	-0,0138	-5,1
Effect linked differences in outcome	0,1007	37,4	0,0914	34,0
Both effects	0,0900	33,4	0,0776	28,9
Others variables				
Effect linked to differences in characteristics	0,0092	3,4	0,0064	2,4
Effect linked differences in outcome	-0,0366	-13,6	0,0963	35,8
Both effects	-0,0275	-10,2	0,1027	38,2
All variables				
Effect linked to differences in characteristics	0,0494	18,4	0,0324	12,1
Effect linked differences in outcome	0,2195	81,6	0,2363	87,9
Both effects	0,2689	100	0,2688	100

(i) Effect of the level of education on the gap in per capita household income :

The level of education explains 61.3% of the income gap in 1996 but only 6% in 2006. This suggests that the effect of education on the gap has considerably diminished during the decade. To better understand the origin of this decreasing effect, it is necessary to examine the explained and unexplained effects. The results show that the difference in the level of education between natives and immigrants of non-European origin has contributed to a 16% income gap reduction in 1996 and 20.2% in 2006. Therefore, the level of education of non-European immigrants, which has considerably





1 High school diploma
2 College diploma
3 University diploma
4 French
5 English

improved between 1996 and 2006 (see Appendix A), has contributed to a further reduction of the income gap. However, in 1996, this positive impact of education has been counterbalanced by the effect of the difference in education outcome which increased the gap by 77.4%. In comparison, the contribution of the difference in the education outcome was only 26% in 2006, which indicates that the preference of degrees earned by natives has diminished considerably during the decade.

Graphics 1a and 1b[6] are visual representation of the effect of the dummy variables of education. They show that the possession of a high school or college diploma increases the gap. Since both the explained and the unexplained portions of the gap by the two variables are positive, one can conclude that not only immigrants do not compare with natives on these two characteristics but also, for those holding these two degrees, natives get better gains. In contrast, holding a university degree tend to favour the reduction in income gap. This has been made possible not because of the outcome of the degree, which tends to increase the gap, but because of the fact that immigrants are proportionately more represented in this category. This advantage in characteristic has even increased between 1996 and 2006 (see appendix A). However, the unexplained part of the gap has remained positive during the decade which means that it has continued to have a detrimental effect on the gap. Finally, one notices that, despite the fact that it continued to increase the income gap in 2006, the unexplained part for all three education variables has somewhat decreased compared to 1996. Therefore, the tendency to prefer natives' diplomas has become less prominent.

(ii) Effect of maternal language on the gap in per capita household income:

The effect of maternal language has contributed on the widening of the income gap by 15.2% in 1996 and 26.9% in 2006 (Table 6). That means that households of non-European origin are facing more financial hardships if its members do not speak English or French as a mother tongue. Generally, the effect of this variable penalizes the immigrant group in their economic assimilation. This trend could be a direct consequence of the introduction of the immigration policy based on selection that favours the arrival of immigrants whose mother tongue is neither French nor English. Between 1996 and 2006 the trend has been maintained since 74.8% of non-European immigrants had neither of

[6] In these graphics, a bar that is under the zero line indicates that the variable in question has an effect that reduces the income gap and a bar that is above the zero line indicates that the variable in question has an effect that increases the income gap.

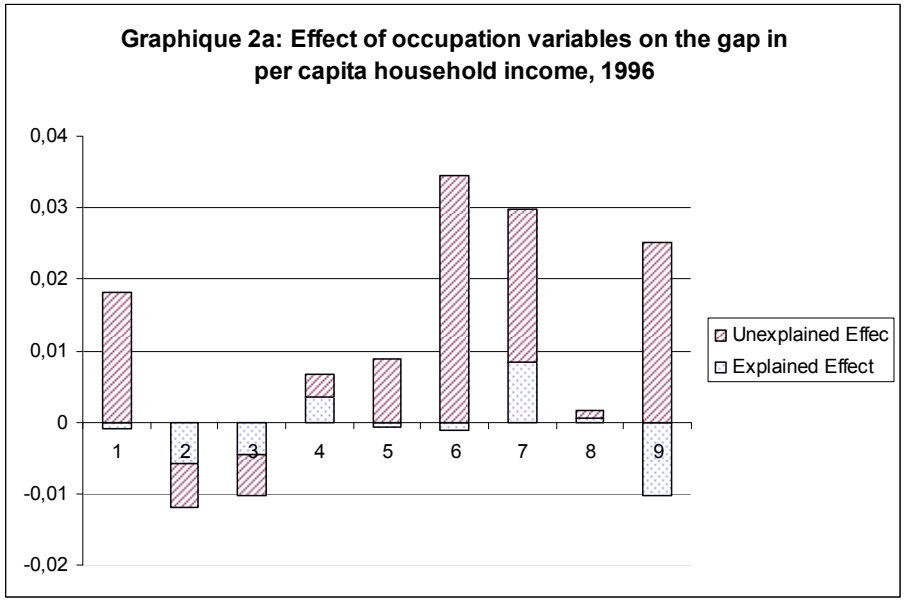
the two official languages as a mother tongue at the beginning of the period and the proportion was 80% by the end of the period (see Appendix A).

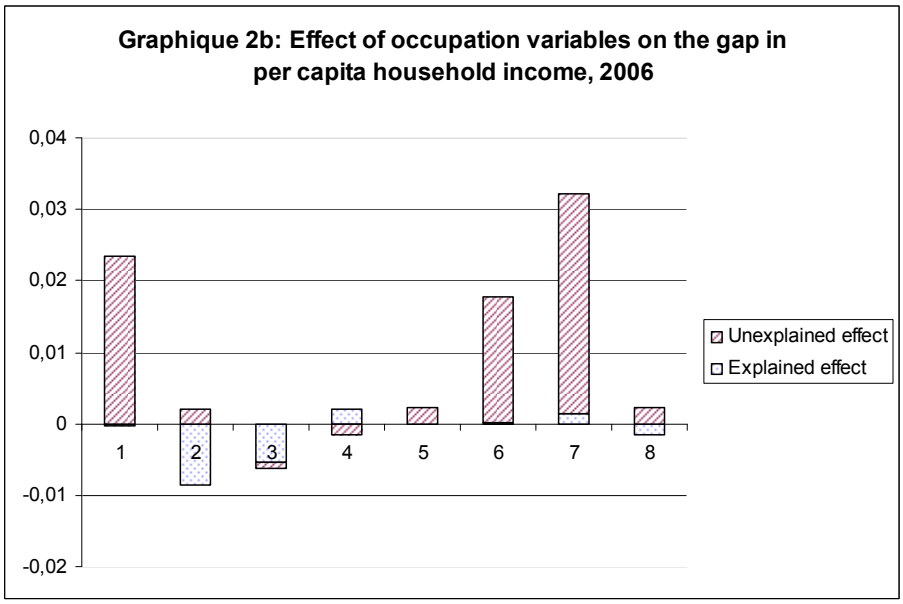
The decomposition of the effect on income gap that can be linked to the mother tongue variables shows that, in 1996 as well as in 2006, 35% of the gap is explained by the differences between natives and immigrants that are observed on the knowledge of French and English. The increased effect of these variables is mostly attributed to the unexplained portion. In fact, while the gap was reduced by 19.5% in 1996 by the unexplained part of the effect of the mother tongue, in 2006, the gap was reduced by only 8%. Such a reduction means that discrimination against non-European immigrants based on the knowledge of the two official languages has increased slightly. The detailed decomposition of the effect of the language dummy variables shows that immigrants who are French speakers are subject of very little discrimination since the unexplained part of the effect is almost equal to zero percent in 1996 and 2006 (Graphic 1a and 1b). Hence, almost all the unexplained part of the language variables can be attributed to the knowledge of English. Nonetheless, since 1996, the unexplained effect of English has continued to decline.

(iii) Effect of occupation on the gap in per capita household income:

The total effect of occupation variables on per capita household income went down from 33.4% in 1996 to 28.9% in 2006 (see Table 6). The decomposition of the effect into explained and unexplained parts shows that it is primarily the differences in outcome that are responsible for the income gap. In fact, the income gap that can be attributed to the difference in the outcome of the occupation variables went from 37.4% in 1996 to 34% in 2006. At the same time, the differences in occupation characteristics reduced the gap by only -4% in 1996 and -5.1% in 2006.

Findings in the detailed decomposition reveal that the income gap can be explained by the differences in occupational distribution in the areas that employ the majority of respondents (Graphics 2a and 2b), namely (1) Management, business, finance and administrative occupations, (6) Sales and Service Occupations (7) Trades, Transport and Equipment Operators and related Occupations (9) Occupations Unique to Processing, Manufacturing and Utilities. The findings show also that the preference of the occupational characteristics of natives is prevalent in most of the sectors. According to Graphic 2a and 2b, in the Management, Business, Finance and Administrative sector,





1 Management, business, finance and administrative occupations
2 Natural and Applied Sciences and Related occupations
3 Health occupations
4 Occupations in Social Science, Education, Government Service and Religion
5 Occupations in Art, Culture, Recreation and Sport
6 Sales and Service Occupations
7 Trades, Transport and Equipment Operators and related Occupations
8 Occupations Unique to Primary Industry
9 Occupations Unique to Processing, Manufacturing and Utilities

almost all the income gap is explained by the difference in outcome because the characteristics of natives and immigrants are very much similar (see Appendix A). Similarly, for those who work in Sales and Services, almost all the income gap resulted from a differential treatment of characteristics. In this sector, there has been a substantial drop in the effect of the difference in outcome. In other words, households of immigrants earn less when their members work in Sales and Services which can only be explained by the preference of natives.

Two other sectors contribute considerably to the income gap between non-European immigrants and natives. First, for the Trades, Transport and Equipment Operators and related occupations, the part of the income gap that is associated to the difference between the two groups of population in their characteristics remains positive. The same is true for the outcome of those characteristics. This can be explained by the fact that, not only do natives are proportionately more represented in that sector but also the outcome of the characteristics leads to a higher household income for natives. It should be highlighted that the explained part of the income gap is significantly smaller in 2006, which indicates that the decline in the proportion of immigrants in that sector contributes to the fall in their household income level. Second, for occupations unique to Processing, Manufacturing and Utilities (see Graphic 2a and 2b), the effect on the income gap that is associated to the difference in characteristics decreased during that period. The same is true for the effect associated to the outcome. It is therefore conceivable that, because of the increasing labour demand in that sector, particularly in the construction industry, non-European immigrants face fewer obstacles in finding jobs in the sector. In addition, it is possible that once they are hired, employers tend to provide them with the same work benefits as those given to natives.

The tendency of decreasing effects on income gap can also be observed in two more sectors although the impact is less significant. These are the Social Science, Education, Government Service and Religion, and Art, Culture, Recreation and Sport sectors. Between 1996 and 2006, the two types of effect (explained and unexplained) decreased very significantly to the point of being null at the end of the period. One explanation of this trend could be the fact that, in the first case, the preference of natives has been curtailed by legal and political measures aimed at preventing discrimination in public service. In the second case, working in arts, recreation and sports minimizes the

chances of being discriminated against because, in this particular sector, the performance of visible minorities is generally well established and recognized.

Finally, only two sectors seem to reduce the gap in per capita household income. They are the Natural and Applied Sciences and Health sectors. In both years, the characteristics of those whose occupation was in the Natural and Applied Science sector favoured bridging the income gap. However, while the outcome in that sector contributed in the reduction of the gap in 1996, in 2006 natives had a higher outcome compared to non-European immigrants. However, while the outcome for those who worked in this sector contributed in reducing the gap in 1996, in 2006 the natives were more likely to earn more than immigrants. As a consequence, the effect of the outcome from working in the Natural and Applied Science sector ended up increasing the gap. In the Health sector, both types of effects contribute in reducing the income gap. That means that immigrants' characteristics help them earn as much as natives. It is important to note that, between 1996 and 2006, the effect of the outcome in the sector on income gap has decreased.

(iv) Effect of the other factors on income gap:

The effect of all the other variables included in the estimation of the models on the income gap has changed significantly between 1996 and 2006. As a reminder, they are the demographic variables (age, sex, type of economic family and marital status), the region of residence and the type of employment (full time or half time employment). In order to simplify the interpretation, the difference between the constants has been added to the difference between the outcomes.

In general, the situation passed from one where the effect of characteristics decreased the income gap at the beginning of the period to a situation where they increase the gap at the end of the period. In particular, all these factors have contributed to a 10.2% income gap reduction in 1996 and a 38.2% income gap increase in 2006. This change is mostly attributed to the effect of the difference in outcome (see Table 6). That suggests that a tendency to prefer natives according to these characteristics has been able to counterbalance and overturn the situation in a ten-year period.

V. Discussion and conclusion :

The analysis of the economic inequality between immigrants of non-European origin and Canadian born individuals according to the change in per capita household income between 1996 and 2006 indicates that households of Canadian born individuals have continued to earn more than households of immigrants of non-European origin. In order to identify the factors that penalize or favour immigrants' income increase, bivariate and regression analyses have been used to capture the role of each variable on household income change. Results of the bivariate analysis revealed that the economic disparities between the two types of households have remained generalized. However, in some situations, immigrants tend to earn more than natives, in particular when immigrants speak English as a mother tongue, when they reside in the Atlantic region and when their household is composed of a couple with no children. In addition, according to the regression analysis, in order to improve their household income, it is important that immigrants hold a university degree, speak English as a mother tongue, be married with no children and have an occupation in the health sector.

The findings confirm that the policy of selecting immigrants based on their human capital characteristics must be re-examined in order to improve their chances of catching up natives in economic performance. First, mastering English and holding a university degree is key to successful economic assimilation. Also, selection of immigrants based on their occupation does not seem to help them, albeit those who have an occupation in the health sector. In all the other sectors, immigrants tend to earn less than natives.

However, trends in average gains show that the gap between immigrants and natives has decreased significantly or moderately between 1996 and 2006. the reduction happened more or less in a generalized way and in a variety of household categories. Therefore, it cannot be attributed only to the improvement of the human capital of immigrants. Other general factors might have played a role such as the implementation of laws and policies that promote equity and equality between ethnic groups and favour in many cases the advancement of visible minorities (such as affirmative action and positive discrimination). Not only do these policies and laws put boundaries at many levels, notably at the private and public administrative level, that cannot be surpassed without legal consequenses, they also encourage employers to give equal chances to all groups particularly those who immigrated from non-European origins. Among the objectives of those policies and laws, there is the desire to eliminate ethnic disparities that can only be

explained by the influence of institutional factors such as the differential treatment based on ethnic or racial origin and the non-recognition of the skills acquired in the country of origin.

The effect of these institutional factors has been captured by the unexplained part of the income gap. Since the results show that most of the gap is linked to the influence of institutional factors, it goes without saying that any attempt to reduce or eliminate this gap must be based on measures that are more holistic, meaning that they must target institutional factors first.

Undeniably, the improvement of the human capital of immigrants during the 1996-2006 period, particularly in terms of education, has helped reduce the income gap between natives and immigrants of non-European origin. But, if one takes into account the contribution of all the observed and unobserved factors of the three human capital variables, one comes to realization that together they increase the gap. Particularly, the effect of the variable mother tongue explains most of the gap because it tends to substantially widen the gap so much so that it eliminates the favourable effects of the level of education and occupation, even though the impact has been reduced over time. In fact, the overall effect of the human capital variables is a 15% increase in income gap in 1996 compared to 9.8% in 2006.

The detailed decomposition of the effects provides a clear idea about the kind of additional institutional measures needed in order to bridge the economic gap between immigrants of non-European origin and Canadian-born individuals. The detailed decomposition shows also how effective institutional measures would be once they are adequately implemented. In fact, if implemented successfully, institutional measures that target differences in the outcome of the human capital variables would, by themselves, potentially reduce the gap by 64.2%. Examples of such measures include the elimination of the preference of the degrees of natives, particularly the preference of the university degree of natives. In addition, policies of encouraging the immigration of people whose occupation is in specific fields, such as in the Natural and Applied Sciences and the Health sectors are to be implemented. Finally, some occupations whose unexplained effect contributes greatly to the widening of the income gap must be targeted. Examples of these include the Management, Business, Finance and Administrative occupations, the Trades, Transport and Equipment Operators and related occupations and occupations unique to Processing, Manufacturing and Utilities.

Appendix A: Weighted proportions of households according to the respondent's characteristics				
	1996		2006	
	Natives (%)	Immigrants non-Europeans (%)	Natives (%)	Immigrants non-Europeans (%)
Sex				
Female	66,2	59,8	62,3	61,1
Male	33,8	40,2	37,7	38,9
Region of residence				
British Columbia	12,3	21,4	12,3	20,2
Prairies	16,8	12,4	17,6	13,0
Ontario	32,2	48,8	32,5	53,6
Québec	29,5	17,0	28,7	12,7
Atlantic	9,1	0,4	8,9	0,5
Marital status				
Married or living in a common law	60,5	65,1	54,8	69,6
Divorced or separated	13,6	10,8	16,0	10,5
Widowed	4,0	2,5	3,0	3,4
Single	21,9	21,6	26,3	16,6
Types of economic family				
Family type not reported	8,9	21,6	9,4	23,2
One person family	29,0	16,7	32,9	18,0
Married couples with no children	21,5	12,5	22,5	11,3
Married couples with children	34,5	39,7	27,6	38,3
Single-parent family	6,1	9,5	7,6	9,2
Maternal language				
English	63,8	23,2	64,4	17,6
French	31,2	2,0	29,8	2,4
Neither English nor French	5,0	74,8	5,8	80,0
Highest degree earned				
No degree	23,6	21,6	14,9	13,6
Secondary diploma	29,0	27,5	26,7	26,4
College deploma	29,5	25,6	34,3	25,3
University deploma	17,9	25,3	24,1	34,6
Occupation				
No declared occupation	36,8	39,6	42,5	47,7
Management, business, finance and administrative occupations	17,7	17,0	16,0	13,2
Natural and Applied Sciences and Related occupations	4,1	4,7	5,2	7,3
Health occupations	3,4	4,3	3,8	4,8
Occupations in Social Science, Education, Government Service and Religion	5,1	2,3	5,4	2,3
Art, Culture, Recreation and Sport	1,6	1,7	1,7	1,0
Sales and Service Occupations	11,1	13,8	9,5	8,2
Trades, Transport and Equipment Operators	12,3	7,9	10,2	8,6
Occupations Unique to Primary Industry	2,9	0,7	2,0	0,8
Occupations Unique to Processing, Manufacturing and Utilities	5,1	8,0	3,7	6,1
Activity during the year				
Non-working/unemployed all year (ref.)	18,9	21,0	16,6	15,3
Employed all year	67,1	64,4	70,8	71,7
Employed half of the year	14,0	14,6	12,6	13,0
Average number of household members	2.53	3.40	2.34	3.25
Number of respondents	**22 008**	**927**	**20 544**	**1 174**

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