

Immigration, Assimilation and Inequality of Income Distribution in Canada

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***Abstract:** This paper examines income inequality between cohorts of immigrant workers and native workers in the Canadian labour force. The degree of inequality is measured by the decomposable Theil generalized entropy measures. We provide comparisons of the patterns of inequality among immigrant status groups and a treatment of trends realized over the 1990s. The primary results indicate that the degree of income inequality between natives and immigrants is positive but not important in magnitude, and it remained stable over much of the 1990s. The structure of income differentials associated with education levels and age groups appear to be roughly similar within immigrant groups and for Canadian-born workers. The findings also indicate that the degree of income equality within the cohort of immigrants that arrived after 1981 is much higher than the degree within the Canadian-born labour force or within the cohort of immigrants that arrived before 1981.*

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1. Introduction

The topic of immigration has been the subject of rather extensive social research and policy debate in Canada over the past three decades. The size of the immigrant flow has been rising over this period, and the official policy objective of the Canadian government is to increase the annual inflow of immigrants from its level of 0.73% of the Canadian population for the year 2000 to roughly 1%. Canada has also experienced major changes in the national origin composition of the immigrant population and some decline in the measured job skills and educational attainment levels of the immigrant inflow relative to those of native workers. Against this backdrop, some of the common immigration policy issues are discussed within an economics perspective in well-known survey articles by Borjas (1993, 1994).

It is well known that immigrants experience lower wages than their native counterparts upon arrival in Canada, *ceteris paribus*.² The degree to which this negative 'entry effect' dissipates as they gain experience in the host country, the phenomenon called 'assimilation', is regarded as an important criterion for evaluating immigration policy. Studies of assimilation tend to be oriented around a comparison of mean wage differentials between selected groups of immigrants and their native-born counterparts. There are few studies, however, that analyze the dispersion of wages within the population of immigrants, despite the widely documented trend towards widening income disparities within the Canadian labour market, including the growing earnings premia

2. Reasons include challenges such as learning an official language of the host country, learning how to signal their skills and working habits to potential employers, finding a suitable match among firms in the labour market, achieving recognition of foreign earned diplomas and occupational certifications, growing accustomed to different employment institutions and social mores, and gaining job experience in Canada

associated with education, skill, and experience.³ Further, little research has been conducted on the relationship between immigration status and the dispersion of earnings within the overall labour market, with the exception of Lehman (1999) and Butcher and DiNardo (1998), both of which study the US labour market.⁴

Synthesizing aspects from the economic literatures of immigration and earnings inequality, Butcher and DiNardo (1998) analyze the impact of the changing composition of immigrants over time (i.e. their characteristics such as human capital and labour market experience) on the form and structure of the distribution of earnings for the US labour force. The question of the impact of immigration status on the degree of inequality of the overall distribution of income in Canada remains unexamined.

Much of the existing Canadian literature has understood economic performance to mean the level of measured earnings of immigrants in relation to comparable native Canadian workers. Baker and Benjamin (1994), Bloom, Grenier and Gunderson (1995), Borjas (1993), Coulson and Devoretz (1993), and Abbott and Beach (1993), among others, posit that the relative economic performance of immigrants has declined over the past two decades. This is taken as evidence of ‘a declining quality of immigrant’ associated with human capital attributes. According to these studies, however, the process of assimilation, whereby immigrants eventually attain wage parity with otherwise comparable native workers, has not occurred in recent decades. A recent study using earnings data up to 1995 indicates, “Immigrants to Canada in the 1990s have not fared as

3. A partial list of references includes Gray, Mills and Zandvakili (2002), Picot (1997), Beach and Slotsve (1996), and Burbidge, Magee, and Robb (1997). More recent figures pertaining to the distribution of earnings during the late 1990s are available in Picot and Heisz (2000).

4. Another exception is published by The Council of Economic Advisors. In their *Economic Report of the President* of 1997, they estimated that immigration accounted for about 10 % of the growth in earnings inequality.

well as previous cohorts of immigrants in terms of employment and wage outcomes...in spite of the fact that members of this group are more educated and have better language skills than the cohorts that they followed.” (HRDC (2001), p. 7)⁵

On the other hand, the view that assimilation is no longer occurring has been challenged somewhat by McDonald and Worswick (1998), De Silva (1997), Baker and Benjamin (1994) and Grant (1999). Thus, although there is agreement on the existence of a negative entry effect, the questions regarding the labour market outcomes of more recent cohorts of immigrants, especially those who arrived after 1981, are not fully resolved.

The first objective of this paper is to compare the degree of income inequality among the population of immigrant families to the degree among native families. This provides a new perspective on assimilation, complementing the previous literature that focuses exclusively on wage-gap measures. Specifically, we examine whether immigrants tend to assimilate into the Canadian labour market in the sense that the degree of inequality among immigrant families resembles that of their native counterparts.

The second objective is to decompose the degree of income inequality for the overall Canadian labour force into two elements. The first component is attributable to mean income differentials between immigrant families and native Canadian families according to observable traits. The second element is attributable to income inequality within these two groups, which corresponds to inequality associated with unobservable

5. An explanation of the phenomenon may be tied to Canada’s immigration policy. According to Green and Green (1999), the factor driving the selection of immigrants has been the composition among entry classes, which has been tilted heavily toward the non-assessed classes. The assessed classes thus became the residual category, typically only accounting for about one-third of the immigrant inflow, which weakened the efficacy of immigration policy in meeting economic goals, such as raising the skill level of the labour force or filling shortages of workers in certain occupations.

traits. We examine the evolution of these two components between 1991 and 1997 in order to determine whether the income gap between immigrants and native Canadians widened over this period during which inflows were high by historical standards. We also examine whether the degree of income inequality within these groups has been rising, as has been discerned for groups categorized by educational attainment.

The third objective is to analyze the impact of other observable attributes on the degree of income inequality in conjunction with the influence of immigrant status. How do the trends that have been documented for the entire labor force, such as widening income gaps between age and education categories, interact with immigration status in determining the degree of income inequality?

The paper is organized as follows. The empirical methodology and the data are described in section 2. Section 3 presents and discusses the empirical results. A summary and conclusion are provided in section 4.

2. Methodology

2.1 Choice of Inequality Measure

The choice of inequality measure is of paramount importance. Based on their characteristics, inequality measures vary in their degree of sensitivity to different parts of the distribution. Their features affect the weights attached to individuals' income fluctuations in computations of inequality. However, there is no single rule for selecting an appropriate measure. Although ranking of measures is not completely feasible, the axiomatic approach to inequality measurement proposed by Atkinson (1970), Sen (1973) and Cowell and Kuga (1981) is a step in this direction.

It is desirable for inequality measures to be a real valued function for a population, and to satisfy the properties of mean independence or income homogeneity; anonymity or symmetry; the Pigou-Dalton principle of transfer; the principle of population; and decomposability, whereby the total inequality in the distribution of a population's income can be broken down into a weighted average of (on one hand) the inequality existing within subgroups of the population, and (on the other) the inequality between the groups. In this paper we use Theil's (1967) two measures of inequality. The Theil measures are frequently used for the analysis of inequality, and they are members of the Generalized Entropy family, which is unique in possessing all of the above desirable properties. The Theil measures are given as:

$$\text{Theil 1: } T1 = -\sum_{i=1}^N w_i s_i \log(ns_i)$$

$$\text{Between-Theil 1: } BT1 = \sum_{j=1}^{\omega} s_j^* \log\left(\frac{ns_j^*}{n_j}\right)$$

$$\text{Within-Theil 1: } WT1 = \sum_{j=1}^{\omega} s_j^* T1_j$$

$$\text{Theil 2: } T2 = \sum_{i=1}^N \frac{w_i}{n} \log(1/ns_i)$$

$$\text{Between-Theil 2: } BT2 = \sum_{j=1}^{\omega} \frac{n_j}{n} \log\left(\frac{ns_j^*}{n_j}\right)$$

$$\text{Within-Theil 2: } WT2 = \sum_{j=1}^{\omega} \frac{n_j}{n} T2_j$$

where y_i = income of i th individual (observation), N_j = number of observations in j th group, $N = \sum_j N_j$, w_i = population weight for i th observation j (one observation

represents w_i individuals sampled from the total population, $w_i^j =$ population weight for i th observation in group, $n_j = \sum_{i=1}^{N_j} w_i^j =$ sum of population weights for j th group (i.e. total population of j th group), $n = \sum_{j=1}^{\omega} n_j =$ total population, $s_i = \frac{y_i}{\sum_{i=1}^N w_i y_i}$, $s_i^j = s_i$ for the j th group, $s_j^* = \sum_{i=1}^{N_j} w_i^j s_i^j =$ weighted income share of the j th group, T1j = Theil 1 for the j th group, and T2j = Theil 2 for the j th group.

2.2 Bootstrapping Procedure

Following Mills and Zandvakili (1997), we use the bootstrap as a tool for statistical inference for inequality measures. The bootstrap procedure has advantages over asymptotic intervals, both theoretically and in practice. The alternative to the bootstrap is to use asymptotic intervals. A major obstacle involved in analytically deriving asymptotic intervals for measures of inequality is that they are all nonlinear, nonparametric functions of a random variable such as income. Consequently, the interval estimates available from asymptotic theory may not be accurate, and the small sample properties of these intervals are not known. The bootstrap provides interval estimates drawn from the small sample distribution. These intervals have been shown to be superior to asymptotic intervals both theoretically and in a variety of applications, see, e.g. Efron (1982), Freedman and Peters (1984), Hall (1992) and Efron and Tibshirani (1993). Furthermore, the decomposable inequality measures used in this paper are bounded, so that application of asymptotic results may lead to estimated confidence intervals that extend beyond the theoretical bounds of a particular measure (e.g. a negative lower bound for the Theil measure).

The following test can be used to discern differences in the values of inequality indices, e.g. over two points in time, which is analogous to the comparison of two means from two different samples. Consider the statistic $D = H_1 - H_2$, where H_1 and H_2 are the two values of the inequality measure we wish to compare. The distribution of D can be bootstrapped in the same manner used to obtain distributions for H_1 and H_2 . Tail probability values for hypothesis regarding D can be calculated directly from the bootstrap distribution $F(D)$. A confidence interval can thus be constructed using the values of D associated with appropriate tail probabilities. Exploiting the relationship between confidence intervals and hypothesis tests then allows us to conduct a test for the null hypothesis: $D = 0$.

2.3 Data

The data are drawn from Statistics Canada's Survey of Consumer Finances – Household, Income, Finance, and Equipment for the years 1991-97. The interval of 1991-1997 was chosen in order to analyze trends in income inequality over the recovery phase of the business cycle. This data set was discontinued after 1997. In addition to comparing the endpoints, we also examine the annual evolutions in the degree of income inequality over this interval. We extract data from the file on economic families. There is a separate cross-sectional file for each year containing approximately 35,000 observations. The specified survey weights are employed throughout the empirical analysis. The income variable refers to total annual income for the household unit. The values are in nominal terms, as inter-temporal comparisons of income levels do not figure

in this analysis. Over the entire interval, the weighted average of income was approximately \$44,000 annually.

The sample is separated into three immigration groups. The first group consists of economic families whose head is a native Canadian. The second and third groups are economic families whose head immigrated to Canada before 1981 and after 1981, respectively. Note that this year corresponds to the year that Grant (1999) pinpoints as the turning point; in contrast to cohorts that arrived during the 1970s, the cohort arriving between 1981 and 1985 exhibited fairly rapid assimilation. At a later stage of the paper, the degree of inequality is decomposed along four other dimensions in conjunction with immigrant status.

3. Empirical Analysis

3.1 Decomposition for the entire labour force: inequality between immigrants and native-born individuals

All workers are pooled together for the first part of the empirical analysis. There is one cross-section of data for each year from 1991 to 1997. The figures appearing in the top panel of Table 1 are the calculations for the two variants of the Theil index (labeled T1 for Theil 1 and T2 for Theil 2) of income inequality for each of the 7 years. Below each point estimate appears the estimated probability value. The Theil statistic is bounded between 0 and 1, with higher figures reflecting greater degrees of income inequality. The figures appearing in the middle panel are the differences between the figures reported in the top panel corresponding to various sets of years. The estimated probability value is reported below each difference. The statistics reported in the bottom

panel are estimates generated from a simple regression model for which the values for the Theil statistics (presented in the top panel) are fitted as a linear function of a time trend over the interval 1991-1997.

We observe an increase in overall income inequality over the 1990's, as shown in the second column of Table 1. The Theil 1 index rose from 0.246 to 0.271 between 1991 and 1997 for a difference of 0.025 units, as reported in the second column in the middle panel. Negative figures reflect widening inequality as time progresses, while positive figures reflect narrowing inequality. The increase in inequality realized between the 6 selected pairs of years that are reported is statistically significant for all values of the Theil 2 statistic and for most values of the Theil 1 statistic. The positive estimated coefficients for the time trend variable listed in the bottom panel (0.0032 and 0.0057 for Theil 1 and Theil 2 statistics, respectively) are statistically significant, indicating that there was a fairly steady trend of rising inequality over this period.⁶

In order to assess the impact of immigrant status on the degree of income inequality, we partition our sample into three groups consisting of Canadian-born, immigrants who arrived before 1981, and immigrants who arrived after 1981. For each year, the global Theil 1 statistic reported in column 2 (column 5 for the Theil 2 measure) is decomposed into the element attributable to the inequality between these three groups (BT1 in column 3, BT2 in column 6) and the element that is attributable to the inequality within these three groups (WT1 in column 4, WT2 in column 7). Note that the between-group inequality is dwarfed by the within-group inequality, as only approximately 1% of the overall inequality is attributed to differences between these three groups. Although

these point estimates are statistically significant, the between-group element of income inequality is hardly discernable. Virtually all of the observed inequality stems from income dispersion within each of these three groups.

Examination of the changes in inequality over this time period provides further insights. The evolution of the between-group element, reported in columns 3 and 6 in the middle panel, is unsurprisingly miniscule given the virtual absence of income disparities between groups. The negative figures appearing in columns 4 and 7 of the second panel indicate that the within-group element of inequality was rising over this period. Given the weak magnitude of the between-group component, it is not surprising that the evolution of within-group inequality over the period 1991-1997 follow patterns that are quite similar to the evolution of overall inequality. These patterns are more pronounced with the Theil 2 measure, as it is more sensitive to the two tails of the distribution.

3.2 Comparison of the degree of inequality between immigrants and native Canadians

For the second part of the empirical analysis, the three groups are separated such that each group's distribution of income can be analyzed independently. Note that this exercise does not involve any decomposition. The results are presented in Table 2, with the calculations based on the Theil 1 and Theil 2 measure appearing on the left and right, respectively. Each row in the top panel contains the level of the Theil statistic calculated for that given year, and the probability value appears below. Each row in the bottom panel contains the difference between Theil statistics listed above, which are useful for comparisons between the three groups.

6. Note that the coefficients of determination of these equations modeling the Theil statistics as simple

The major finding is that inequality is highest among the most recent cohort of immigrants. The figures also suggest that native Canadians and the cohort of immigrants who arrived before 1981 experience similar levels of income inequality. It is evident from the pair wise comparisons listed in the bottom panel of Table 2 (columns 2 and 5) that observed differences between these two groups are not statistically significant. The differences between those immigrants who arrived after 1981 and the groups of the Canadian born and the immigrants who arrived before 1981 are statistically significant for all years except 1994 (for the Theil 2 measure). It thus appears that the prior cohort of immigrants have assimilated into the Canadian labour market in the sense that their distribution of income is characterized by a similar degree of inequality as the overall labour force.

3.3 The roles of other attributes of immigrants and native workers

The figures reported in section 3.1 are indicators of the degree of inequality that exists between these three groups when all individuals, regardless of education level, age, gender, or marital status, are pooled together. Since the overall degree of inequality can be decomposed along two or more dimensions simultaneously, one can take account of the demographic compositions of the three immigrant status groups when measuring the degree of inequality that exists between them. In each of the four cases presented below, the sample is separated according to the three immigrant status groups crossed with four other observable attributes of the family head.⁷ The approach is to examine what occurs

time trends are fairly high, indicating a relatively steady trend.

7. First, there is the level of educational attainment, whose four categories are: below a HS diploma (32.3%), HS diploma (17.1%), some post-secondary certificate (36.9%), and a university degree or higher.

to the degree of between-group inequality when we carry out two-way decompositions involving immigrant status. Since the one-way decompositions indicated minor income disparities between the three immigrant status groups, the issue is how the educational and age composition of these groups affects the measured degree of inequality between them in light of the well-documented income disparities associated with educational attainment and age that prevail for the entire labour force. If these compositions are roughly equivalent across the three immigrant status groups, then the one-way decomposition value from section 3.1 should generate a value that is roughly equal to the pure between-group inequality measure. If this condition is not met, however, the measure of inequality between the immigrant groups is confounded somewhat with inequality patterns that exist between educational and/or age groups.

We turn first to the educational group indicator. For the two-way analysis, for each year the sample is sorted into 12 cells, as there are three immigrant groups and four educational attainment categories. The results of the two-way decompositions are listed on the left side of Table 3. The top panel provides the between-group and the within-group inequality measures based on the Theil 1 and the Theil 2 statistics. The former range from 0.023 to 0.029. These between-group values for the two-way decomposition can be compared to the values generated from the two different one-way decompositions. As shown in section 3.1, when it is decomposed solely by immigrant status, the values ranged from 0.0016 to 0.003 (column 3 of Table 1). When the degree of income

The second separating criterion is the age of the head of the household. The five categories are: below 21 years of age (1.3%), between 21 and 35 years of age (23.7%), between 36 and 50 years of age (33.8%), between 51 and 65 years of age (21.5%), and over 66 years of age. The youngest age category is omitted from the analysis. The third dimension of decomposition is the gender of the head of the household: men head approximately 76% of the economic families in the sample. The last separating variable is the marital status, whose three categories are single (18.4%), married, common-law (59.7%), and other (21.9%).

inequality is decomposed solely according to educational status, the between-group Theil 1 index are much higher, ranging from 0.0216 to 0.0273 (column 3 of Table 4).

For two-way analysis involving immigrant status and age group, for each year the sample is sorted into 15 cells, as there are three immigrant groups and five age categories. The between-group estimates based on the Theil 1 and the Theil 2 statistics range from 0.025 to 0.03 (Table 3). When the degree of income inequality is decomposed solely according to age, the between-group Theil 1 index ranges from 0.0212 to 0.026 (column 3 of Table 4), compared to values ranging from 0.0016 to 0.003 when the decomposition refers only to immigrant status (column 3 of Table 1).

In both cases, the inclusion of the attributes of education level and age to the decomposition analysis contributes greatly to the determination of the between-group element of the income inequality among the sample that is now partitioned into either immigrant-age groups or immigrant-education groups. Equivalently, the inclusion of the attribute of immigrant status to the decomposition analysis contributes very little to the determination of the between-group element of the income inequality among those same samples.

An identical procedure is applied for the two-way decompositions according to immigrant status crossed with gender and immigrant status crossed with marital status. The results are quite similar; the between-group component increases very marginally from the estimation involving a one-way decompositions according to gender and marital status of the head of the economic family.

In the bottom panel of Table 3, the observed differences in the calculations for the Theil statistics between 1991 and 1997 are presented, along with the statistical

significance levels. There was a slight increase in the between-group component between the endpoints of 1991 and 1997 for education crossed with immigrant status and for marital status crossed with immigrant status, as well as for age crossed with immigrant status between 1992 and 1997.

In summary, in the two-way analysis, almost all of the inequality between native and immigrant workers are generated by age, education, or marital status attributes. An implication is that the income disparities that are captured in the between-group inequality values listed in Table 4 -- corresponding to the one-way decompositions -- have a similar pattern within the three immigrant status groups. Despite the finer decomposition afforded by the two-way analysis, however, up to 90% of the total degree of inequality of income is still accounted for by the within-group component, and is therefore difficult to explain without being able to observe more traits.

4. Summary and Conclusion

This paper provides an analysis of various facets of the inequality of the distribution of income between families headed by immigrant workers and those headed by native workers in the Canadian labour force. We find the degree of inequality between the three immigrant status groups is very slight when no account is taken of other attributes. The pure, unadjusted income gap between immigrant families and Canadian-born families is positive but small in magnitude. Unlike attributes of household heads such as age, experience, educational attainment, gender, or marital status, immigrant status *per se* appears not to be a factor that demarcates the economically successful from the less well-off families in a noteworthy fashion.

This low degree of the level of inequality between immigrant groups did not grow significantly between 1991 and 1997, the degree of inequality within the three immigrant status groups did grow appreciably. The literature on income inequality has indicated that this was a prevalent pattern within other sub-groups of the labour force, such as groups separated by age, gender, or educational attainment. This suggests that for immigrants as well as natives, much of the level of income inequality – and a good part of the rising level of inequality – is due to factors that are unobservable in currently available surveys.

We further find that the degree of inequality among the most recent immigrants is much higher than is the case for native Canadians, indicating a very high level of income dispersion among that group. In contrast, the degree of inequality among the earlier immigrants is similar to the level for native Canadians. This phenomenon can be interpreted as an assimilation process as far as the distribution of income is concerned, though it may also be due in part to changes in the type of the immigrants admitted.

Finally, we find that inequality patterns that are normally discerned across educational groups, age groups, genders, and marital status types appear to apply in similar fashion to the groups of immigrant workers as well.

The absence of empirical patterns indicating that characteristics inherent to immigrants are important in determining the degree of income inequality is somewhat unexpected given the proposition expounded in the economics of immigration literature in Canada that the ‘economic quality’ of successive cohorts of immigrants has declined since 1981.

Appendix – Chronology of Changes to Immigration Policies

Canada's immigration policy over the last 30 years has been heavily influenced by the so-called 'point system', which was implemented in 1967. This legislative act was designed to reduce the degree of discretion that immigration officials could exercise in selecting immigrants. Its primary feature consists of an objective scale that is used to evaluate the applications of immigrants on the basis of their perceived likelihood of successful integration into the Canadian labour market. Only immigrants in the assessed classes (primarily the 'independent class') are subjected to this evaluative procedure. The applications for the non-assessed classes, primarily refugees and the 'family class', are evaluated according to the criterion of personal history or kinship.

Immigration policy since the implementation of the point system has undergone a series of fairly modest modifications. The 1978 Immigration Act had the effect of increasing the absolute and relative size of the family class and refugee class, so the composition of the inflow of immigrants tilted away from the assessed classes. The point system was retained, but a job placement category was added to the list of criteria to be evaluated, which had the effect of penalizing applicants who were unable to find employment before arriving in Canada. This feature was discarded in 1986, and at approximately the same time, a policy choice was made to increase greatly the flow of new immigrants from both the assessed and the non-assessed classes in an attempt to increase Canada's population in the long run. There was to be much less emphasis on tailoring immigration flows according to the job market's short-run capacity to absorb immigrants. Whereas business cycle concerns were previously a factor, at least during recessions, demographic concerns became the basis for immigration policy.

The 1992 Immigration Act specified a minor change to the manner in which applicants received points for having designated occupations. In addition, quotas were established for each of the classes of immigrants. In 1995 the government expressed a goal (without passing new legislation) of maintaining balance between the inflows of assessed and non-assessed classes. In the selection process, less emphasis was to be placed on the ability of immigrants to fill labour market shortages, so the criterion of designated occupation declined in importance. The purported goal of immigration policy was to select immigrants according to more general criteria such as skill level, skill flexibility, and adaptability.

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Table 1: Income Inequality by Immigration Status with Linear Trend Estimates

<i>Year</i>	<i>TI</i>	<i>BTI</i>	<i>WTI</i>	<i>T2</i>	<i>BT2</i>	<i>WT2</i>
1991	0.246 (0.006)	0.0017 (0.0004)	0.244 (0.006)	0.272 (0.003)	0.0016 (0.0004)	0.270 (0.003)
1992	0.254 (0.005)	0.0029 (0.0006)	0.251 (0.005)	0.282 (0.004)	0.0030 (0.0006)	0.279 (0.003)
1993	0.257 (0.007)	0.0022 (0.0005)	0.255 (0.007)	0.282 (0.004)	0.0022 (0.0005)	0.280 (0.004)
1994	0.259 (0.007)	0.0031 (0.0006)	0.256 (0.006)	0.283 (0.004)	0.0031 (0.0006)	0.280 (0.004)
1995	0.252 (0.004)	0.0016 (0.0003)	0.250 (0.004)	0.279 (0.003)	0.0015 (0.0003)	0.278 (0.003)
1996	0.264 (0.006)	0.0020 (0.0004)	0.262 (0.006)	0.293 (0.004)	0.0021 (0.0004)	0.291 (0.004)
1997	0.271 (0.006)	0.0022 (0.0004)	0.269 (0.004)	0.319 (0.004)	0.0022 (0.0004)	0.317 (0.004)
<i>Differences</i>	<i>DTI</i>	<i>DBTI</i>	<i>DWTI</i>	<i>DT2</i>	<i>DBT2</i>	<i>DWT2</i>
91-97	-0.0250 0.998	-0.0005 0.805	-0.0245 0.998	-0.0472 1.000	-0.0005 0.818	-0.0467 1.000
92-97	-0.0164 0.996	0.0008 0.135	-0.0172 0.997	-0.0369 1.000	0.0009 0.111	-0.0378 1.000
93-97	-0.0138 0.964	0.0000 0.487	-0.0138 0.965	-0.0365 1.000	0.0000 0.489	-0.0365 1.000
94-97	-0.0118 0.927	0.0009 0.098	-0.0127 0.942	-0.0356 1.000	0.0010 0.083	-0.0366 1.000
95-97	-0.0192 0.998	-0.0006 0.879	-0.0186 0.998	-0.0397 1.000	-0.0006 0.886	-0.0390 1.000
96-97	-0.0068 0.828	-0.0001 0.586	-0.0067 0.827	-0.0262 1.000	-0.0001 0.564	-0.0261 1.000
	<i>Trend Coefficient</i>	<i>t-value</i>	<i>Prob. > t </i>	<i>R-squared</i>		
Theil 1	0.0032	3.59	0.016	0.72		
Theil 2	0.0057	3.02	0.029	0.65		
Between Theil 1:	-0.0000	-0.28	0.794	0.01		
Within Theil 1:	0.0033	3.79	0.013	0.74		
Between Theil 2:	-0.0000	-0.20	0.852	0.01		
Within Theil 2:	0.0058	3.17	0.025	0.67		

Table 2: Within Group Income Inequality by Immigration Status

<i>Year</i>	<i>Theil 1</i>			<i>Theil 2</i>		
	<i>Canadian Born</i>	<i>Arrived Before 1981</i>	<i>Arrived After 1981</i>	<i>Canadian Born</i>	<i>Arrived Before 1981</i>	<i>Arrived After 1981</i>
	1	2	3	1	2	3
1991	0.243 (0.007)	0.234 (0.008)	0.328 (0.047)	0.267 (0.004)	0.262 (0.008)	0.376 (0.034)
1992	0.249 (0.005)	0.254 (0.015)	0.289 (0.019)	0.277 (0.004)	0.276 (0.010)	0.333 (0.022)
1993	0.255 (0.006)	0.253 (0.024)	0.258 (0.018)	0.282 (0.004)	0.262 (0.012)	0.300 (0.019)
1994	0.252 (0.007)	0.272 (0.022)	0.266 (0.016)	0.278 (0.004)	0.287 (0.014)	0.306 (0.020)
1995	0.247 (0.004)	0.250 (0.011)	0.294 (0.016)	0.275 (0.003)	0.269 (0.008)	0.336 (0.015)
1996	0.256 (0.005)	0.291 (0.034)	0.276 (0.012)	0.286 (0.004)	0.298 (0.015)	0.336 (0.017)
1997	0.264 (0.005)	0.264 (0.010)	0.330 (0.015)	0.301 (0.004)	0.297 (0.009)	0.518 (0.029)
<i>Differences</i>	<i>I-2</i>	<i>I-3</i>	<i>2-3</i>	<i>I-2</i>	<i>I-3</i>	<i>2-3</i>
1991	0.0087 0.222	-0.0846 0.994	-0.0933 0.998	0.0049 0.287	-0.1089 1.000	-0.1138 1.000
1992	-0.0043 0.598	-0.0391 0.983	-0.0348 0.928	0.0003 0.471	-0.0561 0.999	-0.0563 0.991
1993	0.0017 0.430	-0.0030 0.538	-0.0046 0.558	0.0208 0.060	-0.0178 0.814	-0.0386 0.958
1994	-0.0199 0.789	-0.0139 0.777	0.0061 0.435	-0.0091 0.716	-0.0288 0.924	-0.0197 0.777
1995	-0.0027 0.574	-0.0463 0.999	-0.0435 0.990	0.0054 0.252	-0.0610 1.000	-0.0664 1.000
1996	-0.0348 0.814	-0.0203 0.945	0.0145 0.395	-0.0117 0.768	-0.0505 1.000	-0.0388 0.960
1997	0.0004 0.490	-0.0657 1.000	-0.0661 1.000	0.0046 0.315	-0.2164 1.000	-0.2210 1.000

Table 3: Two-way Decompositions by Immigration Status and Education, Age, Gender and Marital Status

<i>Year</i>	<i>Education</i>				<i>Age</i>				<i>Gender</i>				<i>Marital Status</i>			
	<i>BT1</i>	<i>WT1</i>	<i>BT2</i>	<i>WT2</i>	<i>BT1</i>	<i>WT1</i>	<i>BT2</i>	<i>WT2</i>	<i>BT1</i>	<i>WT1</i>	<i>BT2</i>	<i>WT2</i>	<i>BT1</i>	<i>WT1</i>	<i>BT2</i>	<i>WT2</i>
1991	0.024 (0.001)	0.222 (0.006)	0.023 (0.001)	0.249 (0.003)	0.028 (0.001)	0.218 (0.006)	0.029 (0.001)	0.243 (0.003)	0.038 (0.001)	0.208 (0.006)	0.044 (0.002)	0.228 (0.003)	0.056 (0.002)	0.189 (0.005)	0.062 (0.002)	0.210 (0.003)
1992	0.031 (0.002)	0.223 (0.004)	0.029 (0.002)	0.253 (0.003)	0.029 (0.001)	0.225 (0.004)	0.030 (0.002)	0.252 (0.003)	0.039 (0.001)	0.216 (0.004)	0.044 (0.002)	0.237 (0.003)	0.060 (0.002)	0.194 (0.004)	0.066 (0.002)	0.216 (0.003)
1993	0.030 (0.002)	0.227 (0.006)	0.029 (0.002)	0.253 (0.003)	0.027 (0.001)	0.230 (0.007)	0.028 (0.002)	0.254 (0.004)	0.038 (0.001)	0.219 (0.006)	0.044 (0.002)	0.238 (0.003)	0.061 (0.002)	0.196 (0.006)	0.067 (0.002)	0.215 (0.003)
1994	0.027 (0.002)	0.232 (0.007)	0.027 (0.002)	0.257 (0.004)	0.027 (0.001)	0.232 (0.006)	0.028 (0.002)	0.255 (0.004)	0.038 (0.001)	0.221 (0.006)	0.044 (0.002)	0.240 (0.004)	0.062 (0.002)	0.197 (0.006)	0.067 (0.002)	0.216 (0.003)
1995	0.030 (0.001)	0.222 (0.003)	0.029 (0.001)	0.250 (0.002)	0.025 (0.001)	0.227 (0.004)	0.026 (0.001)	0.253 (0.003)	0.038 (0.001)	0.213 (0.003)	0.044 (0.001)	0.235 (0.002)	0.060 (0.001)	0.192 (0.004)	0.065 (0.002)	0.214 (0.003)
1996	0.028 (0.002)	0.236 (0.006)	0.027 (0.001)	0.265 (0.004)	0.024 (0.001)	0.240 (0.007)	0.025 (0.001)	0.268 (0.004)	0.036 (0.001)	0.228 (0.006)	0.041 (0.001)	0.251 (0.003)	0.060 (0.002)	0.204 (0.007)	0.066 (0.002)	0.227 (0.004)
1997	0.028 (0.001)	0.243 (0.004)	0.027 (0.001)	0.292 (0.004)	0.025 (0.001)	0.245 (0.004)	0.026 (0.001)	0.293 (0.004)	0.039 (0.001)	0.232 (0.004)	0.045 (0.002)	0.274 (0.004)	0.062 (0.002)	0.208 (0.004)	0.067 (0.002)	0.252 (0.003)
91-97	-0.0043 0.9850	-0.0207 0.9940	-0.0041 0.9840	-0.0431 1.0000	0.0023 0.0950	-0.0273 1.0000	0.0026 0.0830	-0.0498 1.0000	-0.0015 0.8070	-0.0234 0.9980	-0.0012 0.7280	-0.0460 1.0000	-0.0060 0.997	-0.0190 0.996	-0.0054 0.978	-0.0418 1.0000
92-97	0.0025 0.1280	-0.0189 1.0000	0.0020 0.1580	-0.0389 1.0000	0.0039 0.0230	-0.0203 1.0000	0.0040 0.0240	-0.0409 1.0000	-0.0005 0.6190	-0.0159 0.9970	-0.0004 0.5670	-0.0365 1.0000	-0.0019 0.788	-0.0145 0.998	-0.0009 0.622	-0.0360 1.000
93-97	0.0023 0.1580	-0.0160 0.9820	0.0021 0.1590	-0.0386 1.0000	0.0014 0.2060	-0.0152 0.9670	0.0017 0.1930	-0.0382 1.0000	-0.0009 0.7230	-0.0128 0.9570	-0.0008 0.6560	-0.0357 1.0000	-0.0010 0.659	-0.0128 0.959	0.0000 0.494	-0.0365 1.0000
94-97	-0.0010 0.6190	-0.0108 0.9150	-0.0006 0.5530	-0.0350 1.0000	0.0015 0.1930	-0.0133 0.9660	0.0019 0.1650	-0.0374 1.0000	-0.0008 0.6740	-0.0110 0.9220	-0.0012 0.7280	-0.0344 1.0000	-0.0060 0.558	-0.0112 0.948	-0.0002 0.500	-0.0354 1.0000
95-97	0.0014 0.2270	-0.0206 1.0000	0.0015 0.1980	-0.0412 1.0000	-0.0003 0.5550	-0.0189 1.0000	-0.0001 0.5060	-0.0395 1.0000	-0.0009 0.7440	-0.0183 1.0000	-0.0004 0.6110	-0.0392 1.0000	-0.0026 0.884	-0.0166 0.998	-0.0020 0.790	-0.0376 1.0000
96-97	0.0001 0.4550	-0.0069 0.8290	0.0001 0.4480	-0.0262 1.0000	-0.0017 0.8240	-0.0052 0.7770	-0.0017 0.8190	-0.0245 1.0000	-0.0030 0.9730	-0.0038 0.7420	-0.0035 0.9670	-0.0227 1.0000	-0.0023 0.831	-0.0046 0.740	-0.0016 0.711	-0.0245 1.0000

Table 4: Overall Inequality based on Theil 1 with Decompositions

	Education		Age		Gender		Marital Status		
	Theil 1	BT1	WT1	BT1	WT1	BT1	WT1	BT1	WT1
1991	0.246 (0.006)	0.0216 (0.0015)	0.224 (0.006)	0.0260 (0.0013)	0.220 (0.006)	0.0361 (0.0013)	0.210 (0.006)	0.0554 (0.0017)	0.190 (0.006)
1992	0.254 (0.005)	0.0267 (0.0017)	0.228 (0.004)	0.0260 (0.0013)	0.228 (0.004)	0.0358 (0.0012)	0.219 (0.004)	0.0581 (0.0016)	0.196 (0.004)
1993	0.257 (0.007)	0.0270 (0.0017)	0.230 (0.006)	0.0246 (0.0013)	0.232 (0.007)	0.0360 (0.0012)	0.221 (0.007)	0.0597 (0.0018)	0.197 (0.006)
1994	0.259 (0.007)	0.0231 (0.0016)	0.236 (0.007)	0.0233 (0.0012)	0.236 (0.006)	0.0350 (0.0013)	0.224 (0.006)	0.0589 (0.0020)	0.200 (0.006)
1995	0.252 (0.004)	0.0273 (0.0013)	0.224 (0.003)	0.0229 (0.0010)	0.229 (0.004)	0.0368 (0.0009)	0.215 (0.004)	0.0587 (0.0014)	0.193 (0.004)
1996	0.264 (0.006)	0.0249 (0.0015)	0.239 (0.006)	0.0212 (0.0012)	0.243 (0.007)	0.0340 (0.0010)	0.230 (0.006)	0.0582 (0.0019)	0.206 (0.007)
1997	0.271 (.004)	0.0249 (0.0014)	0.246 (0.004)	0.0229 (0.001)	0.248 (0.004)	0.0370 (0.0011)	0.234 (0.004)	0.0606 (0.0017)	0.210 (0.004)
Differences	DT1	DBT1	DWT1	DBT1	DWT1	DBT1	DWT1	DBT1	DWT1
1991-1997	-0.0250 (0.0070)	-0.0034 (0.0021)	-0.0216 (0.007)	0.0032 (0.0016)	-0.0281 (0.0070)	-0.0009 (0.0017)	-0.0240 (0.0073)	-0.0052 (0.0024)	-0.0198 (0.0070)
	0.996	0.940	0.996	0.026	1.000	0.710	1.000	0.990	0.996