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PROBLEMATIC POST-LANDING INTERPROVINCIAL MIGRATION OF THE IMMIGRANTS IN CANADA: FROM 1980-83 THROUGH 1992-95 [+]

Kao-Lee Liaw[*] and Lei Xu[**]

Abstract:
Based on the longitudinal Immigration Data Base, this research found that the post-landing interprovincial migration of newly landed immigrants led to a further concentration in Ontario and British Columbia. Underlying this pattern was the fact that each of these two provinces had a relatively strong economy, large immigrant communities, and a major international airport. This further concentration of relocating immigrants is problematic in the sense that it contributed to the weakening of the political powers of the economically weak provinces. With respect to immigration classes, the interprovincial net transfer was much stronger for those in the investor, entrepreneur, and refugee classes than for those in the family and assisted relative classes. The research also suggested that the deconcentration and widespread dispersal in the 1995-2000 interstate migration of the immigrants in the U.S. can not serve as a harbinger for a general reversal in the interprovincial migration of immigrants in Canada.

Keywords: post-landing migration, immigrants, Canada, immigration class

JEL classification: R23, F22, O15, J11

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1. INTRODUCTION

From the perspective of interregional disparities in economic strength and political representation, the trend of interprovincial population redistribution in Canada since the early 1950s has been highly problematic. The trend has been an increasing concentration of the Canadian population towards the three economically strong provinces (Ontario, British Columbia, and Alberta) from the remaining seven economically weak provinces (see the income levels and employment growth rates of the provinces in Table 1). It is unfortunate that contrary to the expectation of the neoclassical economic theory (Courchene, 1970), the redistribution has not led to the elimination of the wide economic gap between the two sets of provinces (Courchene, 1986; Higgins and Savoie, 1997; Liaw and Qi, 2004).[1]

In addition to failing to eliminate the wide economic gap, the population redistribution has been so great and persistent[2] that it threatened the preexisting interprovincial balance in political power in the federal parliament. In 1985, the Canadian constitution was amended to guarantee that each province be entitled to have no less seats in the House of Commons than it held in 1976, irrespective of any decline in its share of the national population. Although the algorism used to

[1] The constitution of Canada stipulates that the federal government redistribute tax revenues among the provinces via the Equalization Program so that residents in all provinces can receive similar levels of public services (APEC, 2001). The redistributed money is called equalization payment, which is computed based on the equalization entitlement per capita (see last column of Table 1). The economically weak provinces are the ones that receive equalization payment annually, whereas the economically strong provinces identified in this paper are the ones that usually do not receive any equalization payment, except for a few years of province-specific economic difficulty (e.g. the downturn of the economy of British Columbia following the economic crisis of Asia in the late 1990s). The territory of Canada is divided into ten provinces and three territories. Since the three territories (Yukon, Northwest Territory, and Nunavut) have had very small populations (0.3% of the national population), we focus on the ten provinces.

[2] According to the 1951 and 2001 population censuses, the share of the Canadian population increased from 1951 to 2001 by 5.2% (from 32.8% to 38.0%) for Ontario, by 4.7% (from 8.3% to 13.0%) for British Columbia, and by 3.2% (from 6.7% to 9.9%) for Alberta. Among the losing provinces, the share decreased by 4.8% (from 28.9% to 24.1%) for Quebec, by 2.7% (from 5.9% to 3.2%) for Saskatchewan, by 1.8% (from 5.5% to 3.7%) for Manitoba, and by 3.9% (from 11.6% to 7.7%) for the set of the four least populated provinces in the Atlantic region.

allocate the seats according to the census counts was consequently changed to slow down the decline in the relative shares of the seats by the economically weaker provinces, the shift in political power in the House of Commons has been substantial. From 1976 to 2004, among the three economically strong provinces, Ontario gained 11 seats, British Columbia gained 8 seats, and Alberta gained 7 seats, whereas the remaining seven economically weak provinces experienced no change in their numbers of seats.[3]

To a large extent, the interprovincial population redistribution was caused by the interprovincial migration of Canadian-born individuals. According to an analysis of the 1996 census data by Beaujot and Kerr (2004, p. 148), British Columbia achieved a massive net gain of 789,500 Canadian-born lifetime migrants, resulting in a net migration rate of 21.4%. The corresponding net gains of Ontario and Alberta were 242,400 (implying a net migration rate of 2.3%) and 277,600 migrants (implying a net migration rate of 10.4%), respectively. All the remaining seven provinces were net losers of these migrants, with the province with the weakest average job creation capacity over several decades (see Table 1), namely Saskatchewan, being the greatest loser in terms of both net migration volume (-422,200 persons) and net migration rate (-43.2%).

Even more important than the interprovincial migration process of the Canadian-born has been the initial destination choices made by immigrants: the shares of the newly landed immigrants by Ontario and British Columbia have substantially exceeded their respective shares of the Canadian population. For example, between July 1, 2002 and June 30, 2003, as many as 55.2% and 16.0% of the 199,159 new immigrants landed in these two provinces, while their shares of the

[3] In 2004, the total number of seats in the House of Commons is 308: 7 for Newfoundland (abbreviated from the longer official name "Newfoundland and Labrador"), 4 for Prince Edward Island, 11 for Nova Scotia, 10 for New Brunswick, 75 for Quebec, 106 for Ontario, 14 for Manitoba, 14 for Saskatchewan, 28 for Alberta, 36 for British Columbia, and 1 for each of the three territories. Between 1952 and 2004, Ontario, British Columbia and Alberta gained 21, 14, and 11 seats, respectively, whereas New Brunswick and Saskatchewan lost 1 and 3 seats, respectively. For more information, visit www.elections.ca.

national population as of July 1, 2003 were 38.4% and 13.2%, respectively.[4] From a long-term perspective, Beaujot and Kerr's (2004, p. 148) analysis of the 1996 census data showed that 54.6% and 18.2% of the 5,037,100 foreign-born individuals in Canada resided respectively in these two provinces on the date of census. Our computation based on the newly released data of the 2001 population census reveals that 55.6% and 18.5% of the 5,448,480 foreign-born individuals in Canada resided in Ontario and British Columbia, respectively. Thus, the immigrants became even more concentrated into these two provinces from 1996 to 2001. It is useful to point out that although Alberta has been a major long-term net gainer of Canadian-born interprovincial migrants, its share of Canada's newly landed immigrants tends to be somewhat less than its share of the national population. For example, Alberta's share of the immigrants who landed between July 1, 2002 and June 30, 2003 was only 6.8%, while its share of the national population in 2003 was 10.0%. For reference, Alberta's share of Canada's foreign-born residents was 8.2% in 1996 (Beaujot and Kerr, 2004, p. 148) and 8.1% in 2001 (based on our own computation).

As a consequence of the prevalence of sub-replacement fertility in all provinces and the sharp increase in the intake of immigrants by Canada since the late 1980s, net international migration has not only contributed to more than 50% of Canada's population growth but also become more important in accounting for the variation in the growth rates of provincial populations in recent years.[5] For example, between July 1, 2002 and June 30, 2003, provincial population growth rate was much greater for Ontario (1.08%) than for Quebec (0.56%), mainly because net immigration rate was much greater for Ontario (0.72%) than for Quebec (0.35%).[6]

The undesirable effect of the over-concentration of the newly landed immigrants into

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[4] The information on landed immigrants was from CANSIM II, Table 051-0004 (last modified on July 30, 2004), whereas the information on population sizes was from CANSIM II, Table 051-0001 (last modified on July 26, 2004).

[5] Net immigration's contribution to Canada's population growth is 64.5% in 2000-2001, 65.8% in 2001-2002, 58.0% in 2002-2003, and 66.3% in 2003-2004.

[6] The data are from CANSIM II, Tables 051-0001 and 051-0004.

Ontario and British Columbia on interprovincial population redistribution could be alleviated if their post-landing migration in Canada could lead to a dispersal towards other parts of the country in a way similar to the widespread dispersal of relocating immigrants in the United States that occurred in 1995-2000 both among states and among metropolitan areas (Frey, 2004). However, an analysis of the 1991-96 interprovincial migration of immigrants, based on the 1996 census data, found that both Ontario and British Columbia were net gainers of these relocating immigrants, implying a further concentration towards these two provinces (SPPR, 2002, p. 20). Is this finding representative over a longer stretch of time? If so, does the same basic pattern hold for different categories of the immigrants? What might be the contextual reasons for the overall relocation of immigrants to be sharply different between Canada and the United States?

The main purpose of this paper is to gain insights into the post-landing interprovincial migration made by newly landed immigrants during a three year time interval after acquiring the landed immigrant status, based on the tabulations that were created by Statistics Canada from the records of a data system in which the official landing records of immigrants have been linked to their annual income tax records. To see whether the impacts of the immigrants' post-landing migration on interprovincial population redistribution can be rectified by changes in the immigration program, special attention is paid to the selectivity with respect to immigration class and educational attainment. To understand the fundamental difference between Canada and the United States, we also briefly examine the salient features of the 1995-2000 interstate migration of the immigrants in the United States. Hopefully, our findings would help to provide sensible answers to relevant questions about post-landing migrations such as those raised in the previous paragraph. We also hope that our findings would serve as useful background information for the design of immigration policies and for assessing the effectiveness of such policies.

2. DATA AND DESCRIPTIVE INDICES

The data source for our study of the post-landing interprovincial migration of immigrants is a set of multidimensional tabulations created by Statistics Canada from a longitudinal data system

called IMDB (Immigration Data Base). The IMDB was created by linking (1) the official landing records of immigrants kept by Citizenship and Immigration Canada (CIC) with (2) the records of their annual income tax returns filed to Revenue Canada. The immigrants who landed in Canada since January 1, 1980, filed at least one income tax return, and were *aged 15 or over in the tax year* are kept, for only the tax filing year(s), in the IMDB, which has been updated on an ongoing basis with the lag times of a few years. The tabulations used in this study cover all individuals in the IMDB who landed in Canada between January 1, 1980 and December 31, 1995. Note that this data system is incomplete in the sense that the immigrants who never filed an income tax return can not appear at all as an observation, and that an immigrant who filed income tax returns sporadically may appear, disappear, and then reappear as an observation in the data system. We assume that this incompleteness is unlikely to result in a systematic bias in the main patterns of post-landing migration.[7]

In these tabulations, the four Atlantic provinces (Newfoundland, Prince Edward Island, Nova Scotia, and New Brunswick) have been merged into the Atlantic region so that it is impossible for the user to identify any specific province in the region. Similarly, all territories have also been merged into one region (the North region). Thus, there are only eight geographical units for studying the post-landing migrations. For simplicity, we consider these eight geographical units as "provinces" and the migrations among them as "interprovincial migrations".

Since we found in our preliminary investigation that most of the migrations of the immigrants in the business and refugee classes occurred in the first few years after landing, we use three years as the time interval to conduct our investigation of post-landing migrations. Let x and x+3 be the landing year and the following tax year, respectively. An immigrant is defined as an interprovincial migrant if her/his *landing province* in year x is different from her/his *tax province* in

[7] Using the Public Use Microdata File of the 1996 census, we found that in the 1991-96 interprovincial migration of the immigrants who landed in 1981-90, British Columbia and Ontario are the net gainers, whereas the Atlantic region and all remaining provinces are net losers. Since this finding is consistent with our main finding from the IMDB, we believe that the incompleteness of the IMDB is unlikely to introduce significant bias to the big picture.

year x+3 (Remember that the set of four Atlantic provinces is considered as one "province" in this study so that a person relocating from Newfoundland to Nova Scotia is not counted as an interprovincial migrant). Based on this definition, the tabulations created by Statistics Canada allow us to compute both in- and out-migration flows of each province but do not contain enough information for constructing any origin-by-destination flow matrix. A further limitation of these tabulations is that neither in-migration flow nor out-migration flow can be computed for the North region so that we are constrained to find the net migration volume of the North region by comparing its number of immigrants in a landing year and its number of immigrants in the tax year three years later. Since the North region contains a very small proportion of the immigrants, we will mostly ignore it in the discussions of our findings.

All the tabulations made by Statistics Canada include the dimensions of landing year and tax year simultaneously on an annual basis. Thus, we are able to observe a detailed temporal pattern of post-landing migrations for every three-year period from 1980-83 through 1981-84, 1982-85, . . . , to 1992-95.

We use various descriptive indices to characterize the interprovincial in-, out-, and net migration of the newly landed immigrants and to show the impacts of the post-landing migration on their interprovincial distribution. Both volumes (in persons) and rates (in percentage) are used for measuring in-, out- and net migration. For the in-migration of a given province, we compute both an in-migration *ratio* (by using the number of immigrants landed in the province as the denominator) and an in-migration *rate* (by using the number of immigrants landed in the rest of Canada as the denominator). The former reflects the impact of the inflow of the relocating immigrants on the province's immigrant stock, whereas the latter represents the *propensity* of the immigrants in the rest of the system to move into the province in question. For brevity, we will use only in-migration *rate* in our characterization and explanation of the in-migration process. Since what we call "in-migration *ratio*" here is frequently called "in-migration rate" in publications that are not particularly concerned with measurement issues, we also provide the values of in-migration ratio for readers who are accustomed to using them.

To assess the redistributional impacts of the post-landing migration, the interprovincial distributions of the immigrants at landing and three years later are also measured. Dissimilarity index is used to show the extent of the change in population distribution in the three-year period after landing. It is defined as

$$D[\,x\,,\,x+3\,] = \sum_{j=1}^{8} |\,P[\,j\,,\,x\,] - P[\,j\,,\,x+3\,]\,| \,/\, 2 * 100$$

where $P[\,j,\,x]$ is the proportion of the immigrants choosing province j as the initial destination at landing and $P[\,j,\,x+3]$ is the proportion of the immigrants residing in province j three years after landing.[8] The dissimilarity index, in other words, is the percentage of the immigrants that must be relocated among the provinces in order to make the two distributions identical.

3. FINDINGS

3.1. Out-migration

We found from the IMDB that there were 915,380 immigrants who got the landed immigrant status in 1980-92 and filed an income tax return three years after landing. Among them, 103,155 were found to be interprovincial migrants (i.e. individuals whose "province" of residence three years after landing was different from the "province" of destination at landing), implying a three-year interprovincial out-migration rate of 11.3% (Panel A of Table 2). In light of the fact that the 1991-96 interprovincial out-migration rate, computed from the data of the 1996 census, was 3.2% for the Canadian-born and 3.0% for the immigrants who landed before mid-1991 (SPPR, 2001)[9], this finding clearly indicates that *within the first few years after landing, newly landed*

[8] The exact length of the time span between the time of landing (x) and the time of tax filing (x+3) is some what longer than 3 years, because the time of landing can be any date between January 1 and December 31 of year x, whereas the time of the residence in year (x+3) is at the end of that year. Thus, the "three-year" migration internal is actually about 3.5 years in length.

[9] The geographical system used to compute the1991-1996 interprovincial migration rates has 11 geographical units (the 10 provinces, plus the northern territories as one unit).

immigrants were much more likely to make long-distance migrations within Canada than were the Canadian-born and the immigrants who had resided in Canada for a longer stretch of time.[10] This finding implies that long-distance migration within Canada is an important part of the immigrants' settlement and integration process.

The immigrants who landed in the provinces that were economically weak and had very small immigrant populations were hyper-mobile: the out-migration rates ranged from 17.7% for Quebec and 26.4% for Manitoba to 38.3% for the Atlantic region and 46.6% for Saskatchewan. The difference between the somewhat lower rates of Quebec and Manitoba on the one hand and the very high rates of the Atlantic region and Saskatchewan on the other is related to the fact that the former have small but well-functioning ethnic communities such as the Haitian community in Montreal[11] and the Filipino community in Winnipeg, whereas the latter do not (SPPR, 2001).

Without large well-functioning new immigrant communities, the economically strong province of Alberta also had a rather high out-migration rate (20.0%). This high out-migration rate was partly due to the fact that Alberta's job creation capacity was substantially surpassed by that of Ontario in the 1980s and by that of British Columbia in the early 1990s.[12] Although the tabulations

[10] It is useful to note that based on the Public Use Microdata File (PUMF) of the 1986 census, Newbold (1996) in his study of interprovincial migration found that for the "non-natives" (the Canadian-born individuals whose province of residence in 1981 was different from their province of birth), the 1981-86 onward and return out-migration rates were 5.6% and 7.7%, respectively. Onward migration was defined as a migration towards a province which was not the province of birth, whereas return migration was defined as a migration back to the province of birth. The system used in that study contains 9 provinces as distinct geographical units, because Prince Edwards Island and the northern territories were assigned the same code in the PUMF and hence were removed from the study. Although the differences in geographical units and time intervals make a strict comparison impossible, our finding suggests that if we do not ignore the re-migrations towards the United States or back to the country of origin, newly landed immigrants are more prone to re-migrating than are the non-natives in Canada.

[11] Although Montreal does have large and well-functioning Italian and Greek communities, these southern European countries were no longer importance sources of the new immigrants since the 1970s.

[12] Alberta's 1980-90 employment growth rate was 1.35% per year, compared with Ontario's 2.18% per year. Alberta's 1990-95 employment growth rate was 1.45% per year, compared with British Columbia's 2.41% per year.

of the IMDB made by Statistics Canada can not be used to show the origin-by-destination flows of immigrants, it is likely that many immigrants who landed in Alberta were drawn out by Ontario and British Columbia.

With large well-developed immigrant communities and relatively strong economies, Ontario and British Columbia had the lowest out-migration rates: 5.0% and 9.7%, respectively. Since the labor market and ethnic enclaves are much larger in Ontario than in British Columbia, it is not surprising that the out-migration rate was lower for Ontario than for British Columbia.

Because the immigrants were extremely unevenly distributed at the time of landing, the interprovincial variation in out-migration rates did *not* play a major role in determining the interprovincial variation in out-migration flows. For example, Ontario sent out twice as many migrants as British Columbia did (24,055 versus 12,345), despite the fact that Ontario's out-migration rate was only half of that of British Columbia. The main determinant in this case was the fact that 52.1% of the immigrants landed in Ontario and 13.9% landed in British Columbia. Being the second most important destination at landing and having the lowest out-migration rate among the economically weak provinces, Quebec turned out to be the province that sent out the largest number of migrants (28,590).

3.2. In-migration

With respect to the abilities to attract the relocating immigrants, Ontario had by far the highest in-migration rate (11.50%), which was computed from the fact that among the 438,235 immigrants who landed in the rest of Canada, as many as 50,390 became residents of Ontario three years after landing. With the second highest in-migration rate (3.45%), British Columbia attracted the second largest number of relocating immigrants (27,185). With the third highest in-migration rate (1.33%), Alberta attracted the third largest number of them (11,060). In general, unlike the situation of out-migration, the interprovincial variation in in-migration rates played an important role in determining the interprovincial variation in in-migration volumes.

It is worth noting that despite having some well-established immigrant communities in

Montreal and a much larger labor market in the province[13], Quebec was weaker than Alberta in attracting the relocating immigrants: Quebec's in-migration rate (1.01%) and in-migration volume (7,590) were smaller than those of Alberta. Underlying this difference was Quebec's weaker economy and its French milieu.

In addition to having the highest out-migration rate, Saskatchewan had the lowest in-migration rate (0.15%) and attracted only 1,360 relocating immigrants. With a small but well-functioning immigrant community, Manitoba's in-migration rate (0.24%) and in-migration volume (2,105) were greater than those of Saskatchewan. Due to a coding problem[14], the in-migration rate (0.27%) and in-migration volume (2,390) of the Atlantic region were overstated. Even with this overstatement, the Atlantic region still appeared to have a very weak ability to attract relocating immigrants.

In terms of odds ratio[15], in-migration had a much greater interprovincial variation than did out-migration. For example, consider the contrast between Ontario (the province with the greatest powers to retain and attract migrants) and Saskatchewan (the province with the weakest powers). Ontario's odds of in-migration was 86.1 times Saskatchewan's odds of in-migration, whereas

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[13] In 1995, Quebec's share of Canada's total employment was 24%, compared with Alberta's 10%.

[14] We learned about this coding problem from the staff of Statistics Canada after we became suspicious about the net gains of some categories of relocating immigrants by the Atlantic region that we had computed from the Statistics Canada's tabulations. The coding problem occurred, because for a person who failed to indicate in her/his tax return the province of residence, a code of 0 was assigned to her/him, which was also the code for Newfoundland. Because the number of such individuals was very small, this problem is unlikely to result in a significant bias in the overall patterns of post-landing migration. So far we have not been informed by Statistics Canada whether a corrective measure has been taken.

[15] Let m[i] and m[j] be the in-migration rates (in percent) of provinces i and j, respectively. The odds ratio of the in-migration of province i to the in-migration of province j is defined as (m[i]/(100-m[i]))/(m[j]/(100-m[j])). With increasingly common use of logistic models in social sciences, odds ratio are now widely adopted as a measure for comparing the propensities of making certain choices (e.g. migration or being on welfare) between two categories of people. More importantly, Otomo and Liaw (2003) have demonstrated with Japanese data that the use of the difference in migration rates for studying the gender difference in the education effect on migration leads to a misleading conclusion, whereas the use of odds ratio does not.

Saskatchewan's odds of out-migration was 16.4 times Ontario's odds of out-migration. In other words, the provinces differed much more in their powers to attract migrants than in their powers to retain migrants. There are two major consequences of this huge difference. First, interprovincial variation in migration volume was much greater for in-migration than for out-migration. In-migration volume ranged from a minimum of 1,360 (for Saskatchewan) to a maximum of 50,390 (for Ontario), whereas out-migration volume ranged from a minimum of 6,005 (for Saskatchewan) to a maximum of 28,590 (for Quebec). Second, in-migration volume played a more important role in determining net migration volume than did out-migration volume. For example, although it had the second largest out-flow of migrants, Ontario turned out to have the largest net gain of migrants (26,335), because it had by far the largest inflow of migrants. Thus, in general, *it was the ability to attract rather than the ability to retain that was the main determinant of a province's net migration.*

3.3. Net Migration

With a net gain of 14,840 relocating immigrants, British Columbia was the second major net gainer. With a much smaller share of the immigrants at landing than that of Ontario, British Columbia, however, had a net migration rate (11.7%) that was twice the net migration rate of Ontario (5.5%), implying that the post-landing migration had a greater relative impact on British Columbia than on Ontario. Unexpectedly, the North region also turned out to be a net gainer by achieving apparently a net gain of 1,020 relocating immigrants, which implied a huge net migration rate of 87.9%. Because the cell frequencies of the North region in the multidimensional tabulations are very small and are seriously subject to the errors created by Statistics Canada's legally required rounding of the last digit of every cell frequency to either 0 or 5, the net migration volume of the North region is untrustworthy and hence will be ignored in the rest of this paper.

Alberta and all the economically weak provinces turned out to be net losers of the relocating immigrants. Quebec had the largest net loss of migrants (-21,000), whereas Saskatchewan had the most negative net migration rate (-36.0%). Quebec's net loss amounted to 13.0% of its newly landed immigrants, whereas the corresponding figures for other economically weak provinces were greater than 20%. By contrast, being the only economically strong province among the net losers,

Alberta experienced a net loss of only 7.1% of its newly landed immigrants.

The net gains of relocating immigrants by Ontario and British Columbia at the expense of other provinces in the three years after landing had a marked effect on the interprovincial distribution of the immigrants in question (Panel A of Table 2). The share of these immigrants increased by 2.9 percentage points (from 52.1% to 55.0%) for Ontario and by 1.6 percentage points (from 13.9% to 15.5%) for British Columbia. The dissimilarity index between the distribution at landing and the distribution three years later turned out to be 4.6%, which means that the size of the net transfer from the losing provinces to the gaining provinces within three years amounted to 4.6% of those immigrants who landed in Canada between 1980 and 1992 and filed an income tax return three years after landing. It is important to point out that although a dissimilarity index of 0.3 is "conventionally taken as the threshold for meaningful segregation" in studies of residential segregation of ethnic groups among very small areas such as census tracts (Alba and Nee, 2003, p. 87), it is not reasonable to apply this threshold to the subject under investigation here, because the dissimilarity index is used here to measure the change in the distribution of immigrants among very large areas (i.e. provinces) over a very short time interval of only three years.

Since the decrease in Alberta's share was relatively small (-0.7%), the post-landing interprovincial migration process caused the combined share of the immigrants by the economically weak provinces to decrease by as much as 3.9 percentage points in three years.

The pattern of the net transfers of the recent immigrants revealed by our analysis of the IMDB data turned out to be highly consistent with the pattern of the interprovincial net transfers of pre-1991 immigrants during the 1991-96 inter-census period (SPPR, 2001), which also showed that British Columbia and Ontario were net gainers, whereas the Atlantic region and all remaining provinces were net losers. In light of this consistency, it is useful to investigate whether the pattern we have uncovered is a rather persistent phenomenon. For this purpose, we divide the immigrants into two periods by the year of landing: (1) 1980-87 and (2) 1988-92. Panels B and C of Table 2 show that this pattern persisted through both periods.

An additional insight revealed by these two panels is that from the 1980-87 landing period

to the 1988-92 landing period, the attractiveness of British Columbia was strengthened substantially, whereas that of Ontario was weakened markedly. The net migration volume increased sharply from 390 to 14,450 for British Columbia and decreased substantially from 15,845 to 10,490 for Ontario. The corresponding net migration rate increased from 0.6% to 22.4% for British Columbia and decreased from 7.7% to 3.9% for Ontario.[16] Underlying this dramatic change was the sharply strengthened job creation capacity of the economy of British Columbia and the substantially reduced job creation capacity of the economy of Ontario. From the 1980-87 landing period to the 1988-92 landing period, the average annual employment growth rate (over all three-year migration intervals within each of the two landing periods) increased from 1.9% to 2.6% for British Columbia and decreased from 2.5% to -0.2% (negative) for Ontario. The link between changes in job creation capacity and changes in the net migration of the relocating immigrants can also be observed for other provinces. For the Atlantic region, the employment growth rate decreased from 1.8% to -0.0% (slightly below zero), while the net migration rate worsened from -14.7% to -33.7%. For Quebec, the employment growth rate decreased from 1.7% to -0.0%, while the net migration rate worsened from -9.3% to -15.9%. For Manitoba, the employment growth rate decreased from 1.2% to 0.0%, while the net migration rate worsened from -16.5% to -24.9%. For Saskatchewan, the employment growth rate decreased from 0.8% to -0.1%, while the net migration rate worsened from -31.2% to -43.5%. For Alberta, the employment growth rate increased from 0.9% to 1.3%, while the net migration rate improved slightly from -7.2% to -7.0%. The correlation coefficient between the change in employment growth rate and the change in net migration rate turned out to be 0.71. In short, we found evidence that *the post-landing*

[16] Our finding that the net migration rate in the1980-87 landing period was much greater for Ontario than for British Columbia is consistent with the finding of an analysis of the 1976-81 and 1981-86 interregional migration of immigrants (i.e. the foreign-born), based on the data of the 1981 and 1986 census. It was found that from 1976-81 to 1981-86, "Ontario changed from a situation of small losses for all groups to gains for all groups, particularly for those from Southeast Asia and South Asia", whereas British Columbia's position "deteriorated from one of consistent gains across the board (one to 9.4 per cent) to a mixed pattern of small gains or losses among the birth-place groups" (Moore, Ray and Rosenberg, 1990, p. 5).

migration of the immigrants within three years after landing was highly responsive to the changes in job creation capacities in different provinces.

In terms of theoretical relevance, the above findings are consistent with the ethnic enclave theory (Portes, 1995) in the sense that a region with large and well-established immigrant ethnic enclaves tends to have a strong power to retain its immigrants and also a strong power to attract immigrants who landed in other parts of the country. These findings are also consistent with the neoclassical economic theory (Courchene, 1970) in the sense that economically strong provinces tend to have net gains of relocating immigrants at the expense of economically weak provinces, and that the magnitude and orientation of the net transfers of the relocating migrations are responsive to changes in the spatial pattern of new employment opportunities in a rational way.

3.4. Selectivity by Immigration Class

The three major officially-defined classes of immigrants in Canada are: (1) economic class, (2) family class, and (3) refugee class, representing 35%, 38% and 18% of the immigrants in our sample, respectively (for more details, see Appendix Table 1).[17] The three main sub-classes within the economic class are (i) skilled workers, (ii) business immigrants (further divided into entrepreneur, investor and self-employed categories), and (iii) assisted relatives.[18] Within the

[17] In addition to these three major classes, there are a few minor classes ("post-determination refugee claimants", "deferred remover orders", "retirees", and "permit holders applying for permanent residence"), representing 0.06% of all immigrants landed in 2002 (CIC, 2003). Our additional examination of the file of landing records (LIDS) shows that since the 1980s there has been a trend of increasing share of the immigrants by the economic class and decreasing share by the family class. For the immigrants aged 15 or over at landing, the share by the economic class increased from 39% in the 1980-92 landing period to 46% in the 1993-98 landing period and 56% in the 1999-2001 landing period. The corresponding share by the family class decreased from 43% to 39% and 31%. It is interesting to note that instead of the family class, the economic class has brought in a disproportionately large share of child immigrants (those aged 0-14): 53% by the economic class versus 26% by the family class in the 1980-92 landing period. The corresponding shares in later landing periods are: 62% versus 23% in 1993-98, and 68% versus 16% in1999-2001.

[18] Within the economic class, there are also two minor categories ("live-in care givers" and "provincial/territorial nominees"), representing 1.79% of all immigrants landed in 2002 (CIC, 2003).

economic class, skilled workers and assisted relatives are assessed mainly by their potential to become productive workers in Canada, whereas business immigrants are assessed by the amount of investment funds they can bring to Canada or by their potential to help expand employment opportunities in Canada. Based on the desire for family reunification, the family class includes the close relatives of Canadian citizens and previous immigrants. The refugee class includes both refugees and asylum seekers who are accepted for humanitarian reasons. In each immigration class, principal applicants are allowed to include their immediate family members (i.e. spouse or common-law partner, and/or dependent children) in their applications.

The values of the dissimilarity index in Table 3 reveal that *the impacts of the post-landing migration on the interprovincial distribution of the newly landed immigrants differed tremendously among different immigration classes*. The values ranged from very low levels of 1.9% for the family class and 2.8% for the assisted relatives subclass to very high levels of 17.2% and 22.7% for the entrepreneur and investor subclasses.

The small redistributional impact of the post-landing migration for the family class and the subclass of assisted relatives can be explained in the following way. Many of the newly landed immigrants in these categories were sponsored or assisted by their family members or relatives who were mostly previous immigrants and tended to have relatively stable jobs and secure income.[19] With their assistance, the new immigrants would have a better chance of finding a stable employment and adjusting to the life in their local community so that the need to make post-landing migration would not be great. Even without a stable employment in the short-run, many new immigrants in these categories would still prefer to remain close to their well-established relatives for ongoing material and emotional supports.

Our reading of the related literature, our more detailed examination of the IMDB data, and

[19] In order to be successful in their efforts, those who sponsor their close family members and relatives must be able to convince the immigration officer that they have a secure job and possess assets and savings large enough to support the livelihood of the new immigrants over an extended period of time so that the risk for the new immigrants to become the burden on the welfare system is minimized.

our observation of anecdotal but probably representative cases in our own network of acquaintances suggest the following likely reasons for the extremely strong redistributional effect of post-landing migration of entrepreneur immigrants and, especially, investor immigrants. First, many of these immigrants essentially "purchased" the landed immigrant status in order to send their children to the relatively inexpensive education system in Canada or to establish a haven to which they could escape if a war or serious political disturbances were to occur in their home land (Wong, 1995; Tseng, 2000). Profitable return from their investment and business success in Canada would be welcomed but were not their main concern. They would use the service of any immigration agency to help them set up an investment arrangement or a business plan according to the official rules, as long as the agency was deemed trustworthy and not too expensive. Since they were permitted to reside and run their business anywhere in Canada either at the time of landing (for investors) or about two or three years after landing (for entrepreneurs), neither the location of the immigration agency nor the location of the intended destination written in their application was of much concern to them, as long as the application had a good chance of being accepted quickly. Second, the immigration agencies in some economically weak provinces, especially those in Quebec, were quite active in helping the applications of business class immigrants. Third, the application was less expensive and could be accepted faster, if the intended destination was one of the economically weak provinces. Fourth, most of the entrepreneur and investor immigrants were from Hong Kong, Taiwan, and South Korea (Wong, 1995 and 2004) where they, especially the investor immigrants, usually had ongoing business engagements and hence had a strong preference for residing in the Vancouver area of British Columbia where flights back to their place of origin were less time-consuming.[20] In light of these probable reasons, it is not surprising that as many as 42.9% of

[20] It is useful to note that business class immigrants were substantially less well educated than skilled workers. Most of them did not have university education and were unable to understand English. In order not to lose their landed immigrant status, they were required to reside in Canada for no less than six months each year in Canada. In Taiwan, the term "go to sit in immigrant prison" was created to convey the negative image of this kind of obliged residency. On a flight from Taipei to Vancouver, an investor immigrant who was on his way to endure the "immigrant prison" for a stretch of three months said to the first author of this paper that he deeply dislike the stay in

entrepreneur immigrants "landed" in economically weak provinces, compared with 24.5% of all classes of immigrants. The share of entrepreneur immigrants by the economically weak provinces was reduced sharply to 26.4% three years after landing. With respect to investor immigrants, British Columbia shared as many as 47.1% of them at landing and increased its share to a hefty 61.6% three years after landing. It is interesting to note that Quebec's share of investor immigrants decreased from 20.4% at landing to only 4.0% three years after landing. To investor immigrants, Quebec appeared to be a convenient stepping stone (Xu and Liaw, 2003). Actually, our more detailed examination of the IMDB data revealed that most of the out-migrations of investor immigrants from Quebec took place by the end of the landing year, suggesting that many of them never physically resided in Quebec.

For those who are concerned with the immigrants' burden on welfare and social services, the relocations of the refugee class may be of particular interest, because refugee immigrants tend to have higher usage of social assistance than the immigrants in other classes (Dempsey and Yu, 2004). We found that the interprovincial net transfer of refugee immigrants from losing to gaining provinces (7.6%) was much less than those of business immigrants but was greater than that of all classes of immigrants combined (4.6%).[21] The relatively strong propensities of refugee immigrants to relocate in both Canada and the United States have been mentioned frequently in the literature and largely attributed to the fact that refugees from overseas were not given the opportunity to select their initial destinations in the host country (SPPR, 2001; Bartel and Koch, 1991). In Canada, government-assisted refugees were sent to the destinations selected by the government, whereas privately-sponsored refugees were settled in the areas where the sponsorship organizations or groups were located (Orr, 2004). As a result, the initial settlement pattern of refugees has been

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Vancouver, because his two children were out most of the time and he could not find any one to socialize. He further said in an angry tone that if his children refuse to go back to Taiwan after finishing schooling in Canada, he would cut off the parent-child relationship!

[21] Mathematically, the dissimilarity index is equivalent to (1) the sum of the net migration volumes of all net gaining provinces divided by (2) the sum of the immigrants in all provinces.

more dispersed than those of other classes of immigrants (SPPR, 2001, p. 29). Due to the lack of a large co-ethnic community and insufficient employment opportunities in most of the provinces of their initial residence, refugee immigrants tend to have relatively high propensities to relocate and orient themselves towards Ontario and British Columbia.

It is important to mention that despite the fact that although refugee immigrants were more prone to landing in the economically weak provinces than other classes of immigrants, they had a strong tendency to land in Ontario: at landing, Ontario shared as many as 54.3% of the refugee immigrants, compared to its share of 52.1% of all classes of immigrants. What is particularly worth noting is that Ontario's share of refugee immigrants increased markedly to 60.2% three years after landing, which was greater than its share of any other class of immigrants. By contrast, British Columbia's share of refugee immigrants was unusually low both at landing and three years later (7.9% and 9.6%, respectively). This sharp difference between Ontario and British Columbia suggests that refugee sponsorship was rather inactive in British Columbia, and that refugee immigrants had a much stronger tendency than other classes of immigrants to be attracted by their co-ethnic communities, most of which were well-developed in Ontario.

Although the intensity of interprovincial net transfer of the immigrants varied tremendously among different classes of immigrants, *all classes of relocating immigrants shared the same geographical pattern of net transfer: net gains for Ontario and British Columbia versus net losses for the remaining provinces*.[22] We consider this remarkable consistency as a strong evidence that employment opportunities in the labor market and the sizes of co-ethnic communities within the provinces were the two most fundamental determinants of the post-landing interprovincial migration of the immigrants.

The unusually strong attraction of British Columbia to entrepreneur and especially investor immigrants both at landing and in post-landing relocations suggests that they continued to have a

[22] It is likely that the apparent net gain of 35 self-employed immigrants by the Atlantic region was due to the coding problem mentioned before. Thus, we ignore this minor exception.

strong attachment to their homelands in the Far East. However, it is worth noting that they are in general not similar to the Latin American "transnational entrepreneurs" in the United States who tend to be better educated, deeply engaged in both native and host communities, and quite successful in exploiting the economic complementarity between their native and host societies (Portes, Haller, and Guarnizo, 2002). An assessment by Ley (2000) revealed that business class immigrants in general had serious difficulties in carrying out their business activities in Canada and made very modest contribution to the creation of employment opportunities in Canada. With rather modest educational qualification and inability to use either English or French effectively, most of the entrepreneur and investor immigrants achieved relatively low income in Canada (Wang and Lo, 2004) and could not be expected to make significant positive contribution to the vitality of the economically weak provinces, even if they had not out-migrated.

3.5. Selectivity by Educational Attainment

An important feature of the interprovincial migration of the Canadian-born has been that it is highly selective with respect to educational attainment so that it results in much larger net transfer of university graduates from the economically weak provinces to the economically strong provinces than those with lower educational attainment (Liaw, 1998). For example, our analysis of the 1991-96 interprovincial migration of the Canadian-born young adults (aged 25-34 in 1996), based on the 1996 census data, shows that Saskatchewan had a net migration rate of -11.0% for those with at least a university degree and –2.7% for those without a university degree, and that the corresponding values of British Columbia were 43.6% and 8.6%, respectively. The strong educational selectivity has reduced not only the quantity but also the quality of human resources of the economically weak provinces, which has in turn further weakened the economic vitality there. Through the process of cumulative causation (Myrdal, 1957; Higgins and Savoie, 1997), this selectivity has been one of the main reasons for the failure of the interprovincial migration process in eliminating the persistent economic disparities. Are the new immigrants' post-landing migrations similarly selective with respect to educational attainment?

We found that the educational selectivity in the immigrants' interprovincial migration during the three years after landing was rather weak and somewhat irregular (Table 4). The dissimilarity index measuring the net impact on the interprovincial distribution of the immigrants was indeed greater for those with Bachelor's and Master's degrees (5.5%) than for those with less education (ranging between 3.8% for those with 0-9 years of schooling and 4.8% for those with 10-12 years of schooling and those with trade certificates). However, the smallest dissimilarity index (1.8%) occurred to those with a doctoral degree.[23] An important implication of this rather weak and somewhat irregular educational selectivity is that *unlike the corresponding migration of the Canadian-born, the post-landing interprovincial migration of the immigrants did not have much effect on the widening of the preexisting difference in the quality of human resources between the economically weak and strong provinces.*

We suspect that the rather weak educational selectivity in the post-landing migration of the immigrants was mainly due to the "unnatural" destination choices of (1) refugee, (2) entrepreneur, and (3) investor immigrants at landing. We have shown in the previous section that these three groups of immigrants were particularly prone to making post-landing migration. We further found from the file of landing records (LIDS) that these three groups of immigrants were much less educated than skilled workers. In short, *the educational selectivity was weakened by (1) the government's omission of the spatial pattern of economic opportunities as part of the basis for assigning refugee immigrants to various parts of Canada and for approving the sponsorships of private organizations and groups, and (2) the use of some economically weak provinces by entrepreneur and investor immigrants as an expedient stepping stone for getting a landed immigrant status.*

It is remarkable that the pattern of net gains by Ontario and British Columbia at the expense

[23] This very low dissimilarity for those with a doctoral degree probably resulted from the possibility that a high proportion of them had completed their education in the United States and other developed countries and had obtained a job at a college or university in Canada before obtaining the landed immigrant status so that their propensities to make post-landing migration in Canada were reduced.

of all other provinces prevailed through all levels of education, with the minor exception of the Atlantic region's slight net gain at the doctoral level, which was probably due to the coding problem mentioned before. Both unskilled and skilled immigrants showed the same directionality in post-landing migration– both shifted from the economically weak provinces and towards only Ontario and British Columbia among the three economically strong provinces. It seems that Ontario and British Columbia offered the greatest new employment opportunities *at all skill levels*.

4. A BRIEF LOOK AT THE INTERSTATE MIGRATION IN THE UNITED STATES

Before the migration information in the 2000 census became available, the general finding about the internal migration of the immigrants in the United States was that although the initial destination choices of the immigrants were highly concentrated in a few ports of entry, there has not been clear evidence of the spatial dispersal resulting from their internal migration, except for a few ethnic groups such as East Indians, Japanese and Koreans (Bartel and Koch, 1991). The settlement pattern of the immigrants in the United States remained highly concentrated. However, recent studies based on the data from the Current Population Surveys and the 2000 census have revealed that in the late 1990s, both the initial destination choices and the post-landing migrations of the immigrants in the United States displayed patterns of marked spatial dispersal at both state and metropolitan levels (Passel and Zimmermann, 2001; Fix and Passel, 2003; Frey, 2004).

By examining some salient features of the 1995-2000 interstate migration of the pre-1995 immigrants of the United States, we hope to uncover some reasons for the difference between Canada and the United States in the redistributional trends of the relocating immigrants.

We see in Table 5 that among the six states with the largest immigrant populations, four states (California, New York, New Jersey, and Illinois) had a net loss of immigrants as a consequence of the interstate migration in 1995-2000, whereas only two states (Texas and Florida) had a net gain. The net losses of California (-243,859) and New York (-228,991) were so much larger than the net gains of Florida (108,357) and Texas (19,198) that there was a net loss of 376,376 relocating immigrants for the set of the six most populous states. The

corresponding net migration rate turned out to be -1.9%. This is a clear evidence of *deconcentration*.

There were many states with a net gain of the relocating immigrants. These net gaining states included not only numerous states with moderate foreign-born populations but also quite a few states with very small foreign-born populations. Thus, we see a clear evidence of *widespread dispersal* of the relocating immigrants.

The major gaining states of relocating immigrants were those with attractive physical environments and rapid growth of employment opportunities, including Nevada and Arizona in the West Region, and Florida, Georgia, and North Carolina in the South Atlantic Division. These were the same states that had large net gains of US-born interstate migrants. Thus, *to a large extent, the net migration pattern of relocating immigrants was similar to that of US-born migrants.*

However, there was a sharp difference. Among the 12 states in the Midwest Region, as many as 8 states (Indiana, Michigan, Ohio, Wisconsin, Kansas, Minnesota, Missouri, and Nebraska) had a net gain of relocating immigrants, whereas only two states (Minnesota and Missouri) had a net gain of US-born migrants. In other words, *the majority of states in the "rust belt" and the agricultural heartland became net gainers of relocating immigrants, while continuing to lose US-born migrants in the late 1990s*. This difference between the immigrants and the US-born suggests that despite being the region with the weakest job-creation capacity in the late 1990s[24], the Midwest Region had many employers that were providing many jobs to the relocating immigrants. Since we also found that most of the relocating immigrants entering into these states were poorly educated, it is likely that most of these jobs were low-wage jobs that the US-born workers were probably unwilling to take (e.g. the physically demanding and risky jobs in meat packing plants (Gozdziak and Bump, 2004) and at construction sites as well as menial jobs in restaurants, hotels, supermarkets, large retail stores, and office buildings).

[24] Based on the employment data of the Bureau of Economic Analysis (www.bea.doc.gov/ bea), we found that the 1995-2000 employment growth rate was 8.76% for the Midwest Region, 9.24% for the Northeast Region, 13.16% for the South Region, and 15.90% for the West Region.

In light of these salient features in the interstate migration of the immigrants in the United States in the late 1990s, we now try to provide two main reasons for the difference between (1) the further concentration of immigrants into Ontario and British Columbia via their post-landing migration in the 1980s and 1990s and (2) the widespread dispersal of relocating immigrants in the United States in the late 1990s. First, in terms of the capacities to create employment opportunities and to improve productivity, the spatial economy of Canada has retained the dichotomy between the three economically strong provinces (Ontario, British Columbia and Alberta) and the remaining economically weak provinces since the 1950s (Liaw and Qi, 2004), whereas that of the United States has changed markedly since the 1970s-- relative stagnation in the Northeast and Midwest Regions, accompanied by rapid expansion in the South and West Regions. Thus, the relocating immigrants in Canada continued to gravitate towards Ontario and British Columbia, whereas the relocating immigrants in the United States joined the US-born individuals in shifting towards the booming states of South Region (e.g. Georgia and North Carolina) and West Region (e.g. Nevada, Arizona, and Colorado).

Second, although the immigrants of both Canada and the United States, relative to those born in the host country, were over-represented at the two extremes of educational attainment, the American immigrants were more heavily concentrated at the lower extreme than were Canadian immigrants. In the United States, a large proportion of the poorly educated immigrants were illegal immigrants who had been largely confined to the low-wage jobs in a few major port-of-entry states until 2.7 millions of illegal immigrants were legalized after the Immigration Reform and Control Act was passed in 1986 (Martin, 2003). Many legalized immigrants no longer feared the exposure to immigration authorities and migrated in the 1990s to many states (including both traditional industrial and agricultural states in the Midwest) where in addition to the availability of unskilled jobs, the prices of houses were lower so that they could even aspire to become home owners.[25] The

[25] Many of the legalization of the illegal immigrants under IRCA took place in the early 1990s. The dispersal effect of this transformation was reflected in the data of the Current Population Survey data, which revealed that "the number of immigrants settling in the forty states with the smallest immigrant populations rose by 50 per cent between 1990 and 1996" (Fix and Zimmerman, 2004, p.

importance of the interstate migration of these poorly-educated immigrants in determining the overall net transfer of relocating immigrants is reflected in the education selectivity in the 1995-2000 interstate migration of immigrants. For example, we found that for the immigrants aged 25-59, California had a *net loss* of 121,836 relocating immigrants with less than high school education and a *net gain* of 18,546 relocating immigrants with a college degree. By contrast, Michigan had a *net gain* of 5,864 relocating immigrants with less than high school education and a *net loss* of 1,294 of relocating immigrants with a college degree. Without such a large pool of unskilled and recently legalized immigrants, the widespread dispersal of the poorly-educated immigrants has not been part of the big picture in Canada.

5. CONCLUDING DISCUSSIONS

We have found that newly landed immigrants in Canada were much more prone to making long-distance migrations soon after landing than were Canadian-born individuals and immigrants who had resided in Canada for five or more years. Unfortunately, the post-landing migration of the immigrants did not lead to a dispersal of the immigrant population. On the contrary, it led to a further concentration of the immigrant population in Ontario and British Columbia which already had more than their "fair" shares of immigrants at the time of landing. This pattern of net transfer persisted through the 1980s and early 1990s, with a substantial increase in British Columbia's net gain in the early 1990s when its employment growth accelerated. The persistent net gains of Ontario and British Columbia could be attributed to the strong economies and large co-ethnic communities of these two provinces. Having a major international airport further enhanced the attractiveness of these two provinces, especially to the immigrants who retained ongoing business engagements in their home countries or had no intention of residing in Canada on a long-term basis after obtaining Canadian citizenship.

Our analysis of in- and out-migration revealed that a province's ability to achieve a net gain

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of relocating immigrants depends much more on its ability to attract them than on its ability to retain them. An important policy implication of this finding is that instead of focusing on measures to retain immigrants, the provinces with a net loss of immigrants should emphasize the active promotion of its attractive features (e.g. specific career opportunities) in other provinces.
In line with this idea, the provincial government of Saskatchewan has occasionally advertised the attractive features of its province to TV viewers in Ontario since 2003. It would be helpful if the advertisements were accompanied by more concrete measures such as recruitments of specific kinds of workers.

Unlike the very strong educational selectivity in the interprovincial migration of the Canadian-born that resulted in not only a net loss of migrants but also a decrease in the quality of human resources in the economically weak provinces, the educational selectivity in the interprovincial migration of the new immigrants within the first three years after landing turned out to be rather weak and somewhat irregular. Although this finding suggests that the post-landing migration of the immigrants was less detrimental to the economically weak provinces than was the interprovincial migration of the Canadian-born, it was probably only a short-term phenomenon resulting from the "unnatural" destination choices of the immigrants in the refugee, entrepreneur, and investor classes. We expect that as the immigrants stay longer in Canada, the educational selectivity in the internal migration of the immigrants would become similar to that of the Canadian-born.

Can the immigration program be adjusted to reduce the post-landing net transfer of immigrants into Ontario and British Columbia? Our analysis of the selectivity with respect to immigration class suggests that the answer is "yes, to some extent". Specifically, the government can increase the shares of the annual intake of immigrants by the family and the assisted relatives classes and reduce the shares of it by the refugee and business classes. But, it is worth noting that at the time of landing, the immigrants of the former class and subclass were already heavily concentrated in Ontario and, in the case of the family class, in British Columbia.

Our comparison of the situations between Canada and the United States suggests that

without a fundamental change in the spatial economy of Canada, it is unlikely that the trend of the net loss of the economically weak provinces can be reversed in the foreseeable future. But, it is not helpful to blame the immigrants for migrating in a way that resulted in problematic consequences for the economically weak provinces. The solution depends ultimately on the reduction of the wide economic gap between the economically strong and weak provinces. But, there are powerful forces, such as globalization (Sassen, 1988 and 1991) and changes in the global economy, working against this reduction. What has happened in recent years is the further strengthening of the economy of the oil-rich province of Alberta, mainly as a consequence of the rapid expansion of energy consumption in China. Having huge amounts of energy resources, zero provincial sales tax, and no public debt since 2004, Alberta is likely to change from a minor net loser to a long-term net gainer of relocating immigrants, as its immigrant communities become bigger and bigger in a process of cumulative causation.

Despite the problematic post-landing interprovincial migration of the immigrants, the Canadian government continues to emphasize the positive effects of immigration to the Canadian economy and society. To further amplify these positive effects, the Minister of CIC, Joe Volpe, announced in a news release on April 18, 2005 that Canada will allow international students at public post-secondary institutions (1) "to work off-campus while completing their studies so that they can experience the Canadian labour market and gain a wider understanding of Canadian society" and (2) "to work for two years, rather than one year, after graduation" (News Release 2005-12, www.cic.gc.ca). In an attempt to prevent too much concentration of immigrants, he also indicated in the same news release that the second initiative "will apply outside Montreal, Toronto, and Vancouver". Hopefully, our research findings would serve as useful reference materials for the future investigation on the relocations of these well-educated potential immigrants in Canada.

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Table 1. Income Levels, Employment Growth Rates, and Equalization Entitlements of the Provinces of Canada.

Province	Average Family Income		Average Market Income	Employment Growth Rate (% per year)		Equalization Entitlement ($ / person)
	1981	1995	in 1996-2000	1976-2004	1980-95	in 2004-05
Newfoundland	84	77	66	1.06	0.46	1,398
P. E. I.	76	84	76	1.60	1.35	1,776
Nova Scotia	81	80	78	1.42	1.06	1,223
New Brunswick	80	82	78	1.44	1.34	1,537
Quebec	92	90	87	1.31	0.95	500
Ontario	**106**	**111**	**113**	**1.87**	**1.46**	**0**
Manitoba	93	92	88	1.01	0.74	1,147
Saskatchewan	94	90	85	0.79	0.54	464
Alberta	**113**	**102**	**108**	**2.56**	**1.38**	**0**
British Columbia	**108**	**105**	**102**	**2.35**	**2.16**	**197**
Canada	100	100	100	1.75	1.32	-----

Note: Data on average family income are from Canada Year Book, 1988 (p. 5-39) and 1999 (p. 6-12). Data on average market income are from Statistics Canada (2002). Both income measures are expressed as index numbers. Employment growth rates are computed from the data on employment sizes from CANSIM (a time series data base maintained by Statstics Canada). Data on equalization entitlements are from www.fin.gc.ca/fedprov/eqpe.html.

Table 2. The Interprovincial Migration of the Immigrants in a three-year period after landing in Canada: from 1980-83 to 1992-95.

Province	Immigrant Population Size		In-Migration		Out-Migration		Net Migration		Population Distribution			In-migration Rate
	At Landing	3 years after landing	Volume	Rate	Volume	Rate	Volume	Rate	At Landing	3 years after landing	Change	
	(Persons)	(Persons)	(Persons)	(%)	(Persons)	(%)	(Persons)	(%)	(%)	(%)	(%)	(%)
Panel A			**ALL LANDING YEARS: from 1980 to 1992**									
Atlantic	15,835	12,155	2,390	15.1	6,070	38.3	-3,680	-23.2	1.7	1.3	-0.4	0.27
Quebec	161,855	140,855	7,590	4.7	28,590	17.7	-21,000	-13.0	17.7	15.4	-2.3	1.01
Ontario	477,145	503,480	50,390	10.6	24,055	5.0	26,335	5.5	52.1	55.0	2.9	11.50
Manitoba	33,925	27,080	2,105	6.2	8,950	26.4	-6,845	-20.2	3.7	3.0	-0.7	0.24
Saskatchewan	12,890	8,245	1,360	10.6	6,005	46.6	-4,645	-36.0	1.4	0.9	-0.5	0.15
Alberta	85,815	79,735	11,060	12.9	17,140	20.0	-6,080	-7.1	9.4	8.7	-0.7	1.33
B. C.	126,790	141,630	27,185	21.4	12,345	9.7	14,840	11.7	13.9	15.5	1.6	3.45
North	1,160	2,180	----	----	----	----	1,020	87.9	0.1	0.2	0.1	----
Total	915,380	915,380	103,155	11.3	103,155	11.3	0	0.0	100.0	100.0	0.0	----
Dissimilarity Index	----	----	----	----	----	----	----	----	----	----	4.6	----
Panel B			**LANDING YEAR: up to 1987**									
Atlantic	8,730	7,445	1,655	19.0	2,940	33.7	-1,285	-14.7	2.1	1.8	-0.3	0.40
Quebec	71,340	64,720	3,460	4.9	10,080	14.1	-6,620	-9.3	16.9	15.3	-1.6	0.98
Ontario	204,905	220,750	24,635	12.0	8,790	4.3	15,845	7.7	48.5	52.2	3.7	11.30
Manitoba	19,085	15,935	1,225	6.4	4,375	22.9	-3,150	-16.5	4.5	3.8	-0.7	0.30
Saskatchewan	7,835	5,390	870	11.1	3,315	42.3	-2,445	-31.2	1.9	1.3	-0.6	0.21
Alberta	47,985	44,535	6,130	12.8	9,580	20.0	-3,450	-7.2	11.3	10.5	-0.8	1.64
B. C.	62,320	62,710	7,715	12.4	7,325	11.8	390	0.6	14.7	14.8	0.1	2.14
North	715	1,390	----	----	----	----	675	94.4	0.2	0.3	0.2	----
Total	422,895	422,895	46,405	11.0	46,405	11.0	0	0.0	100.0	100.0	0.0	----
Dissimilarity Index	----	----	----	----	----	----	----	----	----	----	4.0	----
Panel C			**LANDING YEAR: since 1988**									
Atlantic	7,105	4,710	735	10.3	3,130	44.1	-2,395	-33.7	1.4	1.0	-0.5	0.15
Quebec	90,515	76,135	4,130	4.6	18,510	20.4	-14,380	-15.9	18.4	15.5	-2.9	1.03
Ontario	272,240	282,730	25,755	9.5	15,265	5.6	10,490	3.9	55.3	57.4	2.1	11.69
Manitoba	14,840	11,145	880	5.9	4,575	30.8	-3,695	-24.9	3.0	2.3	-0.8	0.18
Saskatchewan	5,055	2,855	490	9.7	2,690	53.2	-2,200	-43.5	1.0	0.6	-0.4	0.10
Alberta	37,830	35,200	4,930	13.0	7,560	20.0	-2,630	-7.0	7.7	7.1	-0.5	1.08
B. C.	64,470	78,920	19,470	30.2	5,020	7.8	14,450	22.4	13.1	16.0	2.9	4.55
North	445	790	----	----	----	----	345	77.5	0.1	0.2	0.1	----
Total	492,485	492,485	56,750	11.5	56,750	11.5	0	0.0	100.0	100.0	0.0	----
Dissimilarity Index	----	----	----	----	----	----	----	----	----	----	5.1	----

Note: The immigrants included in this study are restricted to those aged 15 or over in the original income tax data file.

Table 3. The Interprovincial Migration of Different Classes of Immigrants in a Three-year Period after Each Landing Year for the Landing Years of 1980, 1981, …, 1992.

		Province	Immigration Class							
			Family	Economic						Refugee
				Principal Applicants					Spouse & Dependant	
				Entrepreneur	Self-Employed	Investor	Skilled Worker	Assisted Relative		
Net Migration	Volume (persons)	Atlantic	-375	-95	35	-50	-155	-160	-625	-1,875
		Quebec	-2,420	-1,795	-380	-465	-2,300	-190	-5,685	-3,950
		Ontario	3,930	1,275	225	210	2,100	685	4,690	9,725
		Manitoba	-1,635	-105	-35	-35	-665	-335	-815	-3,010
		Saskatchewan	-650	-120	-10	-50	-395	-190	-660	-2,420
		Alberta	-1,690	-85	-30	-65	-1,010	-235	-1,010	-1,360
		B. C.	2,450	935	200	410	2,115	415	3,960	2,765
	Rate (%)	Atlantic	-7.7	-30.2	13.0	-90.9	-6.7	-34.0	-25.6	-56.7
		Quebec	-5.4	-37.7	-17.8	-80.2	-9.5	-4.1	-22.2	-14.7
		Ontario	2.1	35.7	8.1	31.1	5.0	3.0	8.0	10.8
		Manitoba	-11.8	-46.7	-8.6	-77.8	-24.1	-19.0	-22.0	-31.4
		Saskatchewan	-18.2	-61.5	-11.8	-90.9	-28.3	-36.2	-39.3	-51.2
		Alberta	-5.0	-12.4	-5.7	-48.1	-9.8	-5.5	-9.0	-7.4
		B. C.	4.2	30.4	14.4	30.6	20.1	8.1	22.2	21.2
Interprovincial Distribution	At Landing (%)	Atlantic	1.4	2.5	3.6	1.9	2.5	1.2	2.0	2.0
		Quebec	13.1	37.1	28.1	20.4	25.9	11.5	21.1	16.2
		Ontario	53.7	27.8	36.7	23.7	45.1	57.8	48.4	54.3
		Manitoba	4.0	1.8	5.3	1.6	2.9	4.4	3.1	5.8
		Saskatchewan	1.0	1.5	1.1	1.9	1.5	1.3	1.4	2.9
		Alberta	9.8	5.3	6.9	4.7	10.9	10.8	9.3	11.0
		B. C.	17.0	24.0	18.2	47.1	11.2	13.0	14.8	7.9
	3 Years after Landing (%)	Atlantic	1.3	1.7	4.0	0.2	2.3	0.8	1.5	0.9
		Quebec	12.4	23.2	23.1	4.0	23.5	11.1	16.5	13.8
		Ontario	54.9	37.9	39.7	31.2	47.5	59.6	52.3	60.2
		Manitoba	3.6	0.9	4.9	0.4	2.2	3.6	2.4	4.0
		Saskatchewan	0.9	0.6	1.0	0.2	1.1	0.8	0.8	1.4
		Alberta	9.3	4.7	6.5	2.5	9.9	10.2	8.5	10.2
		B. C.	17.7	31.3	20.9	61.6	13.5	14.0	18.0	9.6
Dissimilarity Index (%)			1.9	17.2	6.0	22.7	4.7	2.8	7.2	7.6

Note: The overall dissimilarity index for Economic-Principal applicant is 5.2%.

The investor category was a new category that first appeared in the IMDB in 1987.

Table 4. The Interprovincial Migration of Immigrants with Different Levels of Education in a Three-year Period after Each Landing Year for the Landing Years of 1980, 1981, …, 1992.

		Province	0-9 years of schooling	10-12 years of schooling	13 or more years of schooling*	Trade certificate	Non-university diploma	Bachelor's degree	Master's degree	Doctorate degree
Net Migration	Volume (persons)	Atlantic	-750	-670	-285	-495	-200	-500	-155	10
		Quebec	-2,935	-5,380	-2,095	-2,180	-1,445	-3,085	-565	-100
		Ontario	4,855	5,860	2,295	2,685	1,430	3,640	735	60
		Manitoba	-1,260	-1,455	-565	-1,040	-415	-950	-195	-15
		Saskatchewan	-975	-885	-325	-700	-320	-585	-135	-10
		Alberta	-1,060	-1,000	-490	-905	-420	-1,250	-265	-55
		B. C.	2,095	3,405	1,345	2,435	1,360	2,470	445	65
	Rate (%)	Atlantic	-37.9	-22.1	-19.5	-25.5	-15.4	-18.1	-15.7	1.7
		Quebec	-9.0	-16.0	-13.0	-12.5	-13.6	-15.2	-13.0	-5.1
		Ontario	5.2	5.7	5.6	4.5	4.1	6.3	6.7	1.6
		Manitoba	-17.1	-21.4	-20.7	-26.5	-21.6	-22.8	-25.2	-4.6
		Saskatchewan	-39.2	-38.1	-31.7	-44.2	-34.4	-32.5	-24.1	-3.3
		Alberta	-6.5	-5.9	-6.8	-7.9	-6.3	-10.8	-11.0	-4.7
		B. C.	7.9	12.6	12.1	17.5	15.4	15.1	14.4	5.6
Interprovincial Distribution	At Landing (%)	Atlantic	1.1	1.6	1.8	1.8	2.0	2.4	4.3	6.5
		Quebec	18.1	17.4	20.0	16.0	16.4	17.6	18.7	21.2
		Ontario	51.8	53.6	50.8	54.1	53.4	50.5	47.5	40.8
		Manitoba	4.0	3.5	3.4	3.6	3.0	3.6	3.3	3.5
		Saskatchewan	1.4	1.2	1.3	1.4	1.4	1.6	2.4	3.2
		Alberta	8.9	8.8	8.9	10.5	10.2	10.0	10.4	12.5
		B. C.	14.7	13.9	13.8	12.7	13.6	14.2	13.3	12.5
	3 Years after Landing (%)	Atlantic	0.7	1.2	1.5	1.3	1.7	2.0	3.6	6.7
		Quebec	16.4	14.6	17.5	14.0	14.2	15.0	16.4	20.2
		Ontario	54.5	56.6	53.7	56.6	55.7	53.8	50.9	41.7
		Manitoba	3.4	2.8	2.7	2.6	2.3	2.8	2.5	3.4
		Saskatchewan	0.8	0.7	0.9	0.8	0.9	1.1	1.8	3.1
		Alberta	8.4	8.3	8.3	9.7	9.6	9.0	9.4	12.0
		B. C.	15.8	15.7	15.5	14.9	15.7	16.4	15.3	13.3
Dissimilarity Index (%)			3.8	4.8	4.6	4.8	4.3	5.5	5.5	1.8

Note: The immigrants included in this table are restricted to those aged 25 or over in the original income tax file.

The educational categories are pre-defined in IMDB and are mutually exclusive.

* without a trade certificate, a college diploma, or a university degree.

Table 5. The Effect of the 1995-2000 Interstate Migration of the Foreign-born on the Interstate Distribution of Foreign-born Population (aged five and over in 2000).

State	Population Size		Net Migration		Population Distribution			Foreign-born Share
	In 1995	In 2000	Volume	Rate	In 1995	In 2000	Change	of 1995 State Pop.
	(persons)	(persons)	(persons)	(%)	(%)	(%)	(%)	(%)
A. States with Greatest Foreign-born Population:								
CALIFORNIA	8,137,988	7,894,129	-243,859	-3.0	28.99	28.12	-0.87	27.1
NEW YORK	3,939,585	3,710,594	-228,991	-5.8	14.04	13.22	-0.82	22.7
TEXAS	2,459,179	2,478,377	19,198	0.8	8.76	8.83	0.07	13.7
FLORIDA	2,395,205	2,503,562	108,357	4.5	8.53	8.92	0.39	17.8
NEW JERSEY	1,377,363	1,374,420	-2,943	-0.2	4.91	4.90	-0.01	18.4
ILLINOIS	1,358,802	1,330,664	-28,138	-2.1	4.84	4.74	-0.10	12.2
Sub-total	19,668,122	19,291,746	-376,376	-1.9	70.07	68.73	-1.34	20.2
B. States with Moderate Foreign-born Population:								
MASSACHUSETTS	731,064	725,632	-5,432	-0.7	2.60	2.59	-0.02	13.1
PENNSYLVANIA	528,243	529,944	1,701	0.3	1.88	1.89	0.01	4.8
WASHINGTON ST.	527,063	549,885	22,822	4.3	1.88	1.96	0.08	10.4
ARIZONA	509,729	552,926	43,197	8.5	1.82	1.97	0.15	12.3
VIRGINIA	496,520	514,663	18,143	3.7	1.77	1.83	0.06	8.1
MARYLAND	447,003	456,317	9,314	2.1	1.59	1.63	0.03	9.6
MICHIGAN	429,346	439,687	10,341	2.4	1.53	1.57	0.04	4.9
GEORGIA	403,313	467,189	63,876	15.8	1.44	1.66	0.23	5.9
CONNECTICUT	385,808	388,613	2,805	0.7	1.37	1.38	0.01	12.8
OHIO	326,292	327,163	871	0.3	1.16	1.17	0.00	3.2
NORTH CAROLINA	293,932	340,119	46,187	15.7	1.05	1.21	0.16	4.4
COLORADO	280,332	311,458	31,126	11.1	1.00	1.11	0.11	7.8
OREGON	232,013	247,180	15,167	6.5	0.83	0.88	0.05	7.9
HAWAII	218,551	204,509	-14,042	-6.4	0.78	0.73	-0.05	18.9
NEVADA	216,683	276,087	59,404	27.4	0.77	0.98	0.21	14.5
MINNESOTA	193,310	207,383	14,073	7.3	0.69	0.74	0.05	4.5
WISCONSIN	168,462	171,283	2,821	1.7	0.60	0.61	0.01	3.6
INDIANA	150,872	161,991	11,119	7.4	0.54	0.58	0.04	2.8
NEW MEXICO	139,735	138,132	-1,603	-1.1	0.50	0.49	-0.01	8.5
MISSOURI	131,398	135,108	3,710	2.8	0.47	0.48	0.01	2.7
LOUISIANA	124,359	121,277	-3,082	-2.5	0.44	0.43	-0.01	3.1
TENNESSEE	124,120	138,206	14,086	11.3	0.44	0.49	0.05	2.5
UTAH	115,692	125,544	9,852	8.5	0.41	0.45	0.04	6.3
OKLAHOMA	115,605	116,805	1,200	1.0	0.41	0.42	0.00	3.8
RHODE IS.	115,431	116,496	1,065	0.9	0.41	0.42	0.00	12.6
KANSAS	109,426	115,141	5,715	5.2	0.39	0.41	0.02	4.6
SOUTH CAROLINA	100,687	109,806	9,119	9.1	0.36	0.39	0.03	2.9
ALABAMA	89,697	90,924	1,227	1.4	0.32	0.32	0.00	2.3
IOWA	68,624	67,310	-1,314	-1.9	0.24	0.24	0.00	2.6
Washington, D.C.	67,415	58,141	-9,274	-13.8	0.24	0.21	-0.03	12.2
Sub-total	7,840,725	8,204,919	364,194	4.6	27.93	29.23	1.30	6.0
C. States with Smallest Foreign-born Population:								
KENTUCKY	66,003	68,790	2,787	4.2	0.24	0.25	0.01	1.9
IDAHO	58,379	59,268	889	1.5	0.21	0.21	0.00	5.3
ARKANSAS	58,360	64,405	6,045	10.4	0.21	0.23	0.02	2.5
NEBRASKA	53,938	59,420	5,482	10.2	0.19	0.21	0.02	3.6
NEW HAMPSHIRE	50,692	51,036	344	0.7	0.18	0.18	0.00	4.7
DELAWARE	42,750	45,254	2,504	5.9	0.15	0.16	0.01	6.4
MAINE	41,410	40,927	-483	-1.2	0.15	0.15	0.00	3.6
ALASKA	40,975	40,116	-859	-2.1	0.15	0.14	0.00	7.1
MISSISSIP	39,509	39,763	254	0.6	0.14	0.14	0.00	1.6
WEST VIRGINIA	23,921	22,311	-1,610	-6.7	0.09	0.08	-0.01	1.5
VERMONT	21,598	21,744	146	0.7	0.08	0.08	0.00	4.0
MONTANA	19,441	19,896	455	2.3	0.07	0.07	0.00	2.4
NORTH DAKOTA	15,104	12,749	-2,355	-15.6	0.05	0.05	-0.01	2.5
WYOMING	14,359	13,254	-1,105	-7.7	0.05	0.05	0.00	3.1
SOUTH DAKOTA	13,257	12,945	-312	-2.4	0.05	0.05	0.00	1.9
Sub-total	559,696	571,878	12,182	2.2	1.99	2.04	0.04	2.9
United States	28,068,543	28,068,543	0	0.0	100.00	100.00	0.00	11.4

Data Source: The PUMS of the 2000 Census of the United States.

Appendix Table 1. The Volumes and Compositions of Immigrants Landed in Canada through 1980-1992: By Class.

	Province	Family	Economic: Principal Applicant						Economic: Spouse & Dependant	Refugee	Retired & Other	Total
			Entrepreneur	Self-Employed	Investor	Skilled Worker	Assisted Relative	Other				
Volume (Persons)	Atlantic	4,850	315	270	55	2,315	470	830	2,440	3,305	945	15,795
	Quebec	45,130	4,760	2,135	580	24,335	4,585	9,885	25,615	26,805	18,005	161,835
	Ontario	184,815	3,570	2,790	675	42,380	22,975	19,400	58,625	89,770	52,180	477,180
	Manitoba	13,875	225	405	45	2,760	1,760	770	3,705	9,585	815	33,945
	Saskatchewan	3,580	195	85	55	1,395	525	415	1,680	4,725	255	12,910
	Alberta	33,630	685	525	135	10,265	4,275	2,945	11,245	18,260	3,840	85,805
	B. C.	58,565	3,075	1,385	1,340	10,505	5,150	4,135	17,870	13,030	11,740	126,795
	Total	344,445	12,825	7,595	2,885	93,955	39,740	38,380	121,180	165,480	87,780	914,265
Compositions (%)	Atlantic	30.7	2.0	1.7	0.3	14.7	3.0	5.3	15.4	20.9	6.0	100.0
	Quebec	27.9	2.9	1.3	0.4	15.0	2.8	6.1	15.8	16.6	11.1	100.0
	Ontario	38.7	0.7	0.6	0.1	8.9	4.8	4.1	12.3	18.8	10.9	100.0
	Manitoba	40.9	0.7	1.2	0.1	8.1	5.2	2.3	10.9	28.2	2.4	100.0
	Saskatchewan	27.7	1.5	0.7	0.4	10.8	4.1	3.2	13.0	36.6	2.0	100.0
	Alberta	39.2	0.8	0.6	0.2	12.0	5.0	3.4	13.1	21.3	4.5	100.0
	B. C.	46.2	2.4	1.1	1.1	8.3	4.1	3.3	14.1	10.3	9.3	100.0
	Average	37.7	1.4	0.8	0.3	10.3	4.3	4.2	13.3	18.1	9.6	100.0

Note: The immigrants included in this study are restricted to those aged 15 or over in the original income tax data file.

The investor category was a new category that first appeared in the IMDB in 1987.

Number	Title	Author(s)
(2003)		
No. 380:	Population Aging, Productivity, and Growth in Living Standards	W. Scarth
No. 381:	The Transition from Good to Poor Health: An Econometric Study of the Older Population	N.J. Buckley F.T. Denton A.L. Robb B.G. Spencer
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