Earnings of Immigrant Classes in the Early 1980s in Canada: A Reexamination

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Il est généralement admis que les immigrés, tel que des réfugiés, acceptés pour des raisons humanitaires ont de moins bonnes performances que les immigrés sélectionnés pour leurs compétences. Récemment, Statistiques Canada a mis en place la *Longitudinal Immigration Database* (IMBD) qui procure une occasion unique pour vérifier cette affirmation. En utilisant un sous-échantillon de l'IMBD, cet article montre que les revenus des différentes catégories des immigrés convergent rapidement au fil du temps. Du point de vue politique, la principale conclusion est que l'âge d'entrée au Canada est probablement plus importante que toutes les autres caractéristiques rapportées au moment de l'arrivée.

It is widely believed that immigrants admitted on compassionate grounds such as refugees tend to perform poorly compared with immigrants selected for their skills. Recently, Statistics Canada has assembled a longitudinal Immigration Database (IMDB) which provides a unique opportunity to examine whether the above view is correct. Relying on a subsample of male immigrants drawn from IMDB, the present study finds evidence of a rapid convergence in earnings among immigrant classes over time. From a policy perspective, the main conclusion is that age at entry is probably more important than many of the other immigrant attributes reported at landing.

INTRODUCTION

Immigrants to Canada are admitted under various classes: family class, assisted relatives, independent class, business class, Convention refugees, and the designated class. The family class includes the immediate members of the family, whereas assisted relatives include other relatives. Convention refugees refer to those who have fled their home countries in well-founded fear of persecution and who are in need of resettlement. The designated class also consists of people in refugee-like situations but who do not come under the strict United Nations definition of a refugee. The business class includes entrepreneurs, investors, and self-employed persons. While a detailed discussion of these classes is deferred to the next section, the important point to note is that the family class, Convention refugees, and the designated class are admitted under humanitarian considerations, whereas the independents, business immigrants, and assisted relatives are required to pass a selection test to determine how well they would perform in the Canadian economic environment. Thus, one would normally expect immigrants

who are subject to the selection system to fare better than those who are admitted on humanitarian or compassionate grounds.

The purpose of this study is to find out whether the above perception is correct, using administrative data on a sample of immigrants who landed during the period 1981-1984. Note that the term "landing," which appears throughout the paper, refers to the acquisition of permanent resident status, which is not quite the same as arrival. The study is restricted to only four immigrant classes: independents, assisted relatives, Convention refugees, and the designated class. Two very important immigrant classes, namely, the family and business classes are left out because they are not covered in the subsample available for this study. The exclusion of these two classes is a serious limitation since they accounted for over half of the immigrant landings during the 1981-84 period.[1]

It is useful to take a quick look at the raw data to find out a little bit about the earnings behaviour of the four immigrant classes mentioned above. This is shown in Table 1 which tracks the real earnings of a sample of immigrants who landed between 1981 and 1984, from the first tax year since their landing (for example, in the case of the 1981 landing cohort, the first full tax year would be 1982) up to 1988, which is the last year for which the data are available. These are male immigrants (principal applicants only) in the 25-64 age bracket who were in paid employment, reporting positive earnings in each year. Self-employed persons have been left out of this analysis. The sample used here is drawn from a larger longitudinal parent sample called the Immigration Database (IMDB), which will be discussed later. The table shows that the independents have consistently been the topmost income earners, but they have experienced the smallest increase in earnings (second panel). In contrast, the designated class reported the most rapid growth in earnings. They were initially in third or fourth place but were able eventually to move up to second place in three

of the four landing cohorts under consideration. Assisted relatives have also experienced strong increases in earnings but not as large as those made by the designated class. As a result, although assisted relatives always started out as the second highest earners, they often fell to third place by the end of the period under review. Convention refugees made only modest wage gains, which meant that they were relegated to last place throughout. A comparison of the first year earnings of the various landing cohorts indicates that, whereas the independents experienced either no decline or only a small decline, in the case of the other classes, each cohort has started at a lower level of earnings than the preceding cohort. As a result, successive landing cohorts of immigrants belonging to these other classes often started at a somewhat greater earnings disadvantage relative to the independents than the cohort preceding it. Yet, because of their strong performance, the designated class and the assisted relatives were able to narrow the earnings gap between themselves and the independents over time (third panel). By comparison, in the case of the Convention refugees, the rate of convergence to the earnings level of the independents was painfully slow.

Overall, then, a preliminary look at the data reveals that most immigrants, with the exception of the Convention refugees, have done reasonably well. Consequently, the earnings differentials among these immigrant groups have narrowed over time. Thus, the question arises as to why this is so, and to what extent the attributes reported at landing can account for the success of these immigrants.

INSTITUTIONAL BACKGROUND ON IMMIGRANT CLASSES

Among the objectives of immigration policy, the more important ones are those relating to family reunification, the fulfillment of Canada's international legal obligations with respect to refugees, and the promotion of national and regional economic

T<small>ABLE</small> 1

Real Employment Earnings of the 1981 to 1984 Immigrant Landing Cohorts over the Tax Years, 1982-1988

Landing Year/Class	Number of Observations	1982	1983	1984	Tax Year 1985	1986	1987	1988
		Average Real Employment Earnings (1986 dollars)						
1981								
Con.Refug	64	16,857	18,249	19,334	21,074	22,039	23,093	24,187
Desig.Class	494	14,645	16,728	19,586	22,407	24,697	26,793	28,787
As.Relativ	574	17,687	19,286	21,656	23,332	25,308	27,163	29,122
Indepen	1611	29,832	30,875	33,239	35,548	37,211	38,574	39,816
1982								
Con.Refug	153		13,350	14,756	16,289	17,727	18,860	20,044
Desig.Class	822		13,045	14,969	17,710	20,503	23,507	26,081
As.Relativ	464		16,691	18,078	20,059	22,192	23,785	25,167
Indepen	1452		28,698	32,188	34,956	36,718	38,216	39,465
1983								
Con.Refug	330			12,373	13,324	14,434	15,493	16,727
Desig.Class	486			12,541	14,915	17,701	20,778	24,264
As.Relativ	217			14,811	16,898	19,223	21,541	23,465
Indepen	556			27,610	30,862	32,801	34,424	35,412
1984								
Con.Refug	491				9,310	10,165	10,901	11,778
Desig.Class	501				11,409	13,603	15,873	18,226
As.Relativ	340				13,091	14,447	15,905	17,386
Indepen	466				27,620	29,498	31,041	32,497

		Year-to-Year Change (%)						
		1982 -83	1983 -84	1984 -85	1985 -86	1986 -87	1987 -88	*Average Annual Change*
1981								
Con.Refug		8.26	9.23	5.72	4.58	4.78	4.74	6.22
Desig.Class		14.22	17.09	14.40	10.22	8.49	7.44	11.98
As.Relativ		9.04	12.29	7.74	8.47	7.33	7.21	8.68
Indepen		3.50	7.65	6.95	4.68	3.66	3.22	4.94
1982								
Con.Refug			10.53	10.39	8.83	6.39	6.28	8.48
Desig.Class			14.75	18.31	15.77	14.65	10.95	14.49
As.Relativ			8.31	10.96	10.63	7.18	5.81	8.58
Indepen			12.16	8.60	5.04	4.08	3.27	6.63

TABLE 1 (CONT'D.)

	Year-to-Year Change (%)						Average Annual Change
	1982 -83	1983 -84	1984 -85	1985 -86	1986 -87	1987 -88	
1983							
Con.Refug			7.69	8.33	7.34	7.96	7.83
Desig.Class			18.93	18.68	17.38	16.78	17.94
As.Relativ			14.09	13.76	12.06	8.93	12.21
Indepen			11.78	6.28	4.95	2.87	6.47
1984							
Con.Refug				9.18	7.24	8.05	8.16
Desig.Class				19.23	16.69	14.82	16.91
As.Relativ				10.36	10.09	9.31	9.92
Indepen				6.80	5.23	4.69	5.57

As a % of Earnings of Independent Class

1981	1982	1983	1984	1985	1986	1987	1988
Con.Refug	56.5	59.1	58.2	59.3	59.2	59.9	60.7
Desig.Class	49.1	54.2	58.9	63.0	66.3	69.5	72.3
As.Relativ	59.3	62.5	65.2	65.6	68.0	70.4	73.1
1982							
Con.Refug		46.5	45.8	46.6	48.3	49.4	50.7
Desig.Class		45.5	46.5	50.7	55.8	61.5	66.1
As.Relativ		58.2	56.2	57.4	60.4	62.2	63.8
1983							
Con.Refug			44.8	43.2	44.0	45.0	47.2
Desig.Class			45.4	48.3	54.0	60.4	68.5
As.Relativ			53.6	54.8	58.6	62.6	66.3
1984							
Con.Refug				33.7	34.5	35.1	36.2
Desig.Class				38.2	49.1	53.8	54.0
As.Relativ				40.4	47.4	50.5	50.7

Notes: The estimation sample includes all persons in the original subsample who satisfied the following criteria: they had to be male immigrants (principal applicants only) in the 25 to 64 age group, who were in paid employment, reporting positive earnings in each year and who were not in self-employment (i.e., zero earnings from self-employment). Nominal earnings data from tax (T1) files are converted into real terms using the GDP price deflator.

Sources: The immigrant sample is drawn from a larger longitudinal parent sample referred to as the Immigration Database assembled at Statistics Canada. Details on this data source are given in the text.The data on the GDP price indices are from *National Income and Expenditure Accounts* Annual Estimates 1982-1993(Cat.13-201 Annual), pp. 8-9.

prosperity. The immigrant class structure mentioned earlier is closely related to the attainment of these objectives. Individuals qualifying under the family class are admitted for reasons of family reunification, whereas the independents and the business class are admitted solely for economic considerations. Assisted relatives are admitted for both economic and family reunification considerations, while the admission of Convention refugees and the designated class is directly linked to the fulfillment of Canada's international legal obligations.

The family class includes spouses, fiancé(e)s, dependent children, parents, and grandparents, whereas assisted relatives include brothers and sisters, children over 21 years of age, uncles and aunts, and nephews and nieces.[2] During the period under review, a major requirement governing assisted relatives was that they be sponsored by a relative living in Canada. In addition, assisted relatives are required to pass a selection test, which is the major difference between themselves and the family class. The independents are those who apply on their own without a Canadian sponsor and who have to pass a selection test. Examples of individuals admitted under the designated class include the Indo-Chinese (Vietnam, Kampuchea, and Laos), self-exiled persons from Central and Eastern Europe (e.g., Hungary, Poland, Russia, and Czechoslovakia), and political prisoners and oppressed persons from Chile, El Salvador, and Guatemala (Marrocco and Goslett 1985, pp. 287-96).

The selection or the "points" system used in the assessment of independents and assisted relatives came into existence in 1967, but has undergone a series of revisions at various times. For the purpose of this study, the selection criteria and the points awarded to them are those introduced in 1978. These criteria cover a wide range.[3] Those relating to independents included not only the basic factors as age, education, and French and English language proficiency, but also other factors such as intended occupation, personal suitability, previous work experience (in the intended occupation), specific vocational preparation (skills required to pursue the candidate's intended occupation), pre-arranged employment, designated occupation (which refers to occupations in heavy demand), location (designated areas that were believed to experience labour shortages carried bonus points), and the presence of a relative in Canada. Table 2 shows the allocation of points. As can be seen from the table, there were some important differences in the way that assisted relatives and independents were assessed. Whereas independents were assessed according to the criteria mentioned earlier, the list of selection factors governing assisted relatives was much shorter. Of the factors they were exempted from, the most important ones were language proficiency and pre-arranged employment. In addition, since assisted relatives received bonus points (ranging from 20 to 35 points depending on the relationship to the person sponsoring them), they needed to score many fewer points than the independents on the other selection factors in order to qualify for admission. In view of the lenient treatment given to assisted relatives, particularly the language exemption, the initial earnings disadvantage that this group had experienced relative to the independents should not come as a big surprise. What is puzzling, however, is why the assisted relatives were able to erase a considerable portion of this earnings differential over time. The same is also true for the designated class, whose success is even more baffling since it did not come under the selection system at all.

Several other aspects of the points system, as it operated during the period of the four immigrant landings covered in this study, 1981-84, deserve mention. First, the assessment was made only on the person applying for the visa (the principal applicant); the spouse and other dependents were not subject to the selection system. Second, with respect to education, points were awarded for only primary and secondary levels. No extra points were given for university education. Third, effective May 1982, the independents were required to have a pre-arranged job

TABLE 2
The Points Awarded to Independents and Assisted Relatives, 1978

Factor	*Range of Points Awarded*
	(a) Independent Applicants
Education	0-12
Specific Vocational Preparation	0-15
Experience	0-8
Occupational Demand	0-15
Arranged Employment	0 or 10
Location[1]	5
Age[2]	10
Official Language Proficiency	0-10
Personal Suitability	0-10
Relative in Canada	5
Potential Maximum Points	100
Minimum Pass Mark	50 out of 100
	(b) Assisted Relatives
Education	0-12
Specific Vocational Preparation	0-15
Experience	0-8
Occupational Demand	0-15
Age[2]	0-10
Personal Suitability	0-10
Potential Maximum Points	70
Minimum Pass Mark	20-35 out of 70

Notes:

[1] The five points were awarded only to those individuals who were willing to go to locations designated by the minister of immigration as experiencing a labour market shortage.

[2] Ten points were given to those in the 18 to 35 age bracket. For those over 35 years, one point was deducted for each year by which the person exceeded 35 years of age.

Source: Adapted from Canada. Employment and Immigration Canada (1985).

offer in order to qualify for admission. However, it is likely that some of the applications of independents who landed subsequently may have either been processed or were being processed before May 1982. Because of this, we included many of the other selection variables in the earnings equation of the independents to see whether these factors still had an impact on their performance.

SUMMARY OF PREVIOUS FINDINGS

A survey of the literature reveals that research on the economic performance of immigrant classes is quite limited. The main reason for this neglect is the lack of relevant data. For example, the census, which is the main source of data used in most studies, does not contain any

information on immigrant classes. This means that a specially constructed database is needed for doing research in this area.

Many of the early Canadian studies that have addressed the issue of economic adaptation of immigrant classes have generally confined themselves to just one immigrant class and have not made comparisons with other classes.[4] The only exception we have been able to find is a study by Samuel and Woloski (1985), who used a longitudinal database to examine the relative economic performance of the immigrant classes who landed in 1979. The authors considered the unemployment experience as well as the real earnings of four immigrant classes over a three-year period: 1980 to 1982. The four classes were: family class, independents, assisted relatives, and combined Convention refugees and designated class. However, the income variable in their analysis was neither employment earnings nor total income. Instead, it was a measure of insurable earnings derived from unemployment insurance records. Unfortunately, as the authors themselves have acknowledged, a major problem with this variable is that it is subject to maximum and minimum levels for a given year. As a result, earnings that exceed the maximum are coded at that maximum, while earnings falling below the minimum are coded as zero. Hence, a discrepancy could arise between insurable earnings and actual earnings. Subject to this important limitation, the main contribution of the study was to demonstrate that the two "selected" immigrant classes — independents and assisted relatives — have earned consistently more than the other classes that are admitted on humanitarian grounds. The study also found that the independents have always outperformed assisted relatives. No formal analysis was undertaken on the factors determining the earnings of the different immigrant classes.

While the foregoing study is the only one to make a direct comparison of immigrant classes using longitudinal data, there are a few other Canadian studies that have addressed the issue of the effectiveness of the immigrant selection system, and in so

doing, have provided indirect evidence on the economic adjustment of immigrant classes. For example, Duleep and Regets (1992) tried to examine whether the Canadian immigrant selection system, which places heavy emphasis on economic criteria is more effective than the US immigration system, which is largely based on family reunification, by comparing the experience of immigrants in the two countries. The study looked only at immigrants from Asia and Europe, using the 1980 US census and the 1981 Canadian census. The authors found that although immigrants to Canada were younger at the time of arrival and reported greater language proficiency than those who entered the United States, this did not necessarily translate into an advantage in terms of education and earnings, once they controlled for observable characteristics. In other words, immigrants admitted for reasons of family reunification were found to do as well as those admitted on economic grounds. Hence the authors concluded that the Canadian immigrant selection system is no more effective than the US system. However, as Green and Green (1995) have argued, the above conclusion may be somewhat premature because the study is based on a single census for each country and therefore, is unlikely to capture the effect of different policy regimes on immigrant performance.

Borjas (1993) also made a comparison of the performance of immigrants in Canada and the United States. However, unlike Duleep and Regets, his analysis dealt with immigrants from all countries and was based on pooled data from two census years. He found that immigrants to Canada were somewhat more educated and had higher entry earnings than those coming to the US, which in turn was interpreted as evidence that immigrants admitted on economic grounds tend to be more successful than those admitted for family-based reasons.

More recently, Green and Green (1995) and Green (1995) have looked at the effects of changes in Canadian immigration policy on the occupational composition of immigrants. Their main focus was

on the 1967 changes to the *Immigration Act* which ushered in a regulatory system, including the points system. They found that the points system contributed to a shift in the occupational composition from less skilled categories such as labourers toward professionals. Despite this, the authors argued that the effectiveness of the points system was limited because of the large number of other characteristics the points system sought to control.

As in the case of Canada, there is very little research on the economic adjustment of immigrant classes even in the United States. The pioneering studies on the subject have been done by Duleep and Regets (1992, 1994, 1996, 1997). They have tried to compare the earnings profiles of immigrants admitted for humanitarian reasons (mainly family-based immigrants) with those of immigrants brought in for their skills, relying on census data matched with Immigration and Naturalization Service Information on admission criteria for country of origin/ immigrant cohorts. Their main findings are as follows. First, although recent immigrants start with low earnings, this initial disadvantage is more than offset by very rapid subsequent growth in earnings. As a result, their earnings tend to converge on the native-born level over time. This finding contradicts the earlier results reported by Borjas (1988) which showed no convergence. Second, Duleep and Regets found that, while the declines in admissions on the basis of occupational skills and the corresponding increases in family-based admissions have contributed to a decrease in initial earnings, the same factors have also produced a rapid increase in earnings growth. This leads the authors to reject the argument that the increased admissions of family-based immigrants (and the concomitant reduction in the admissions of skilled immigrants) are responsible for a deterioration in the economic performance of immigrants. Third, the authors also found that the earnings of demographically comparable immigrants, regardless of their country of origin, converge with time. The main policy implication of the Duleep-Regets analysis is to cast doubt on the usefulness of recent policy initiatives undertaken in the United States favouring skilled immigrants.

To sum up, the foregoing survey reveals that even the few studies that have been done on the subject are divided on whether immigrants selected for their skills consistently outperform those admitted on compassionate grounds.

ADMINISTRATIVE DATA TO DETERMINE IMMIGRANT OUTCOMES

As mentioned earlier, the present study is based on a subsample of a larger database (IMDB) assembled at Statistics Canada. This is a 10-percent random subsample created by Statistics Canada with the help of Citizenship and Immigration during the first phase in the production of IMDB to establish the representativeness of the subsample, that is, whether the data from the subsample were broadly consistent with census data in terms of a number of indicators such as age, education, earnings, etc. At the time the analysis for this paper was done, the full IMDB was not available to the public. Thus, we were unable to obtain immigrant characteristics from the parent sample. Nevertheless, a brief description of the salient features of the parent sample is in order.

IMDB was constructed by linking the landing files of immigrants who landed during the 1981-88 period with their tax files. To be included in this database, the following requirements have to be satisfied. The immigrant must have landed during the 1981-88 period, and should have submitted at least one tax return after arrival. However, this does not necessarily mean that all of the immigrants included in the data set had arrived during that period. In fact, the evidence reveals that about 15 percent of the immigrants included in IMDB had submitted a tax return before their landing, which in turn suggests that they must have arrived before being granted landed status. Overall, the total coverage of IMDB is over 400,000 persons, which is about 38 percent of all immigrant landings during 1981-88.

IMDB contains data on principal applicants, spouses, and other dependents belonging to all

immigrant classes. These data relate only to individuals and not to families. One item missing in the database is a native-born sample to serve as a reference group to measure the economic performance of immigrants. Hence, in the empirical analysis presented later on, we decided to use the independent class as the reference group.

The immigrant landing data used in the construction of IMDB have come from several sources, the most important being the Immigrant Visa and Record of Landing files which contain data on such factors as the country of last permanent residence, immigrant class, education, official language proficiency, intended occupation, destination, etc. All of these are attributes recorded at the time of landing. Attributes acquired since landing are not found in the IMDB. Another important data source is the Immigrant Assessment Record, which gives the points awarded to principal applicants belonging to the independent and assisted relatives classes. A third data source is temporary visas issued to students, visitors, temporary workers, etc. This information is used in the IMDB only if the temporary visa holder subsequently became a landed immigrant.

The tax information is collected from the personal income tax form (T1), which provides data on all sources of income (e.g., employment earnings, income from self-employment, etc.) as well as other factors such as the province of residence and the postal codes, which would be useful in future research on geographical mobility.

The foregoing relates to the parent database from which the subsample used in this study has been derived. The subsample used here covers the 1981 to 1984 landing cohorts and consists of 9,021 male immigrants (see Table 1). Of these, 45.3 percent are independents, 37 percent are Convention refugees and members of the designated class, and the remaining 17.7 percent are assisted relatives. Of the subsample, 30.4 percent landed in 1981, 32 percent in 1982, 17.6 percent in 1983, and the remaining 20 percent in 1984. There are two noteworthy

differences between this subsample and the parent IMDB. First, as mentioned earlier, the subsample excludes the family and business classes, whereas IMDB includes all classes. Second, the subsample deals only with principal applicants, whereas the IMDB includes spouses and other dependents as well.

We now take a look at certain key attributes of immigrants by class and landing cohort (Table 3). The sample used here is exactly the same as in Table 1. Table 3 shows that immigrants irrespective of their class tend to be in their early- to mid-thirties at the time of landing. Differences in the number of years of schooling among immigrant classes are relatively minor, with the independents having a slight advantage over others. However, in the case of university education, the gap between the independents and other groups is much wider. With regard to the other groups, the designated class is slightly ahead of the Convention refugees, whereas the assisted relatives are generally at the bottom. In terms of the level of specific vocational preparation, the differences again are minor, with the independents in first place by a slight margin and Convention refugees consistently in fourth place. In terms of English proficiency, independents rank first, whereas the designated class is in last place. Convention refugees are ahead of assisted relatives in all but one of the landing cohorts. It is also interesting to note that the proportion of allophones (people who speak neither English nor French) is lowest among the independents, whereas in the case of the other classes, it is quite high. The level of French and bilingual proficiency is low among all immigrants, but even here, the independents generally report higher levels than the rest. The main beneficiaries of pre-arranged employment are the independents, whereas in the case of the other groups it is either insignificant or non-existent. As a result, in the subsequent empirical analysis we have included pre-arranged employment only in the regressions relating to the independents. The majority of independents have come from traditional source countries such as Europe and the United States. In the case of the

Key Attributes of Immigrants, by Class and Landing Year

Immigrant Class	Landing Years			
	1981	*1982*	*1983*	*1984*
1. Age at Landing (years)				
Conv. Refugees	34.60	32.77	33.84	32.85
Desig. Class	32.93	32.62	33.84	32.82
Assisted Relatives	34.77	34.41	36.10	37.43
Independents	33.62	34.03	34.56	34.61
2. Schooling (number of years)				
Conv.Refugees	11.94	13.22	12.79	11.91
Desig.Class	12.25	13.00	12.35	11.66
Assisted Relatives	11.10	12.04	11.35	10.95
Independents	13.91	14.61	14.37	14.85
3. University Graduates (%)				
Conv.Refugees	16.13	22.37	18.29	12.07
Desig. Class	19.23	24.45	20.70	14.97
Assisted Relatives	12.22	14.50	15.35	13.53
Independents	33.10	40.81	42.23	43.32
4. Specific Vocational Preparation				
Conv. Refugees	4.03	4.04	3.99	3.42
Desig.Class	4.97	5.45	4.84	4.10
Assisted Relatives	5.63	5.34	4.83	3.58
Independents	6.43	6.51	5.74	5.16
5. English Proficiency (%)				
Conv. Refugees	40.0	51.0	40.0	35.0
Desig. Class	13.0	20.0	17.0	13.0
Assisted Relatives	54.0	51.0	27.0	23.0
Independents	75.0	75.0	67.0	73.0
6. French Proficiency (%)				
Conv. Refugees	0	4.0	3.0	3.0
Desig. Class	5.0	2.0	2.0	4.0
Assisted Relatives	2.0	2.0	1.0	4.0
Independents	9.0	6.0	9.0	5.0
7. Bilingual Proficiency (%)				
Conv. Refugees	8.0	5.0	2.0	2.0
Desig. Class	3.0	2.0	3.0	3.0
Assisted Relatives	3.0	2.0	3.0	3.0
Independents	7.0	6.0	10.0	9.0

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Immigrant Class	Landing Years			
	1981	*1982*	*1983*	*1984*
8. Neither English Nor French Proficiency (%)				
Conv. Refugees	52.0	41.0	55.0	61.0
Desig. Class	79.0	76.0	78.0	81.0
Assisted Relatives	42.0	45.0	70.0	71.0
Independents	9.0	12.0	14.0	13.0
9. Prearranged Employment (%)				
Conv. Refugees	0	0	0	0
Desig. Class	0	0	0	0
Assisted Relatives	3.7	1.9	1.8	1.2
Independents	46.4	50.5	38.0	41.9
10. From Europe, U.S., Australia and New Zealand (%)				
Conv. Refugees	11.2	19.1	8.2	8.8
Desig. Class	60.7	80.8	64.2	58.3
Assisted Relatives	38.9	40.3	40.9	16.5
Independents	61.9	60.2	59.1	56.5
11. From West Asia and Africa (%)				
Conv. Refugees	33.9	39.5	43.9	42.9
Desig. Class	0.6	0.5	1.0	1.2
Assisted Relatives	26.0	14.2	10.2	9.9
Independents	15.1	15.3	14.3	22.4
12. From South, Southeast, and East Asia (%)				
Conv. Refugees	11.3	7.2	1.9	2.1
Desig. Class	38.3	18.4	30.4	37.1
Assisted Relatives	27.9	34.9	36.8	66.8
Independents	10.6	14.0	14.8	12.1
13. From South and Central America, incl. the Caribbean (%)				
Conv. Refugees	43.6	34.2	46.0	46.2
Desig. Class	0.4	0.4	4.4	3.4
Assisted Relatives	7.2	10.6	12.1	6.8
Independents	12.5	10.5	11.9	9.1

Note: The level of specific vocational preparation(SVP) of each immigrant is assessed in a very subjective manner according to the degree of complexity of the skills needed to practise his or her intended occupation in Canada. On the basis of this, each immigrant who went through the selection system was assigned a value ranging from 0 to 10 for his or her level of SVP. For those who did not go through the selection system, their level of SVP was given an imputed value, depending on what they declared as their intended occupation on the landing records.

Source: Based on a subsample of Statistics Canada's longitudinal Immigration Database (IMDB).

designated class, the main source countries are Southern and Eastern Europe, whereas in the case of assisted relatives, the main sources are generally Europe and Asia (excluding West Asia). Convention refugees are mainly from Africa and West Asia (including the Middle East) and South and Central America (including the Caribbean). Incidentally, the term "country of origin" refers to the country where the immigrant was previously a permanent resident, which may not necessarily be the same as country of birth.

On the basis of Table 3, one would expect the independents to be the topmost earners because they report the highest endowments in most categories, especially in English proficiency and university education. With regard to the other groups, however, it is not clear *a priori* what effect the endowment differences would have on their labour market performance. Hopefully, regression analysis would be able to shed light on this issue.

CONCEPTUAL FRAMEWORK

In their work on immigrant behaviour in Canada, Chiswick and Miller (1988) present an analytical framework on immigrant adjustment in the labour market, which is relevant to the present study. Their discussion is based on two key determinants of immigrant adjustment — skill transferability and the motivation for migration. Using these two building blocks, these authors present a four-way classification to determine the earnings behaviour of immigrants after their arrival (Table 4). In terms of the present study, cell (A) in the table would consist mainly of the independents because of their transferable skills and because they migrated for economic considerations. By the same token, Convention refugees and the designated class would generally be in cell (D), because of their low skills and because they were admitted on non-economic grounds. In the case of the assisted relatives, we have already found that their skills are generally low.

TABLE 4

Determinants of Labour Market Adjustment of Immigrants Relative to the Native-Born

Motive for Migrating	Skill Transferability	
	High	*Low*
Economic	(A) 1. Easy adjustment 2. Larger effect of preimmigration skills 3. Flattest gradient with duration of residence	(B) 1. Lower attainment 2. Lowest effect of preimmigration skills 3. Steeper gradient with duration of residence
Non-economic	(C) 1. Lower attainment 2. Lower effect of preimmigration skills 3. Steeper gradient with duration of residence	(D) 1. Lowest attainment 2. Lower effect of preimmigration skills 3. Steepest gradient with duration of residence

Source: Chiswick and Miller (1988, p. 189).

Thus, depending on whether they came mainly for economic or non-economic reasons, they would be either in cell (B) or cell (D). Chiswick and Miller argue that those who came for economic reasons and are highly skilled would start with relatively high earnings, but would experience slow growth in earnings thereafter. By comparison, those who came with low skills and for non-economic considerations would initially earn low wages but would invest heavily in skill development because of its high pay-off. This means that their earnings would rise rapidly over time, thus enabling them to narrow the wage gap between themselves and the highly skilled group. If this is true, we should see a convergence of earnings of other groups to the level of the independents.

To test the above hypothesis regarding the convergence of earnings, we did an analysis of three immigrant groups who landed during the years from 1981 to 1984. The three groups are the independents (IND), assisted relatives (ASSIS), and the combined Convention refugees and the designated class (DESCON). The latter two categories had to be merged for the regression analysis because of insufficient data in the Convention refugee group. Regressions were run separately for each of these groups, pooling together the four landing cohorts and the tax years — that is, from the first full tax year since landing up to 1988. The sample used is exactly the same as in Tables 1 and 3.

The method of analysis is a regression of the following type, which has been widely used in previous studies:[5]

(1) $\ln E_{it} = \beta X_{it} + \mu_{it}$,

where $\ln E_{it}$ is the natural logarithm of annual real (in 1986 dollars) employment earnings of the i th individual at time t, X_{it} is a row vector of productivity-related and other control variables, β is a vector of coefficients, μ_{it} is an error term. Note that, since we are working with panel or longitudinal data on

individual immigrants, the regression error has two distinct dimensions i and t for observations across time periods t on a given individual i. The maintained error structure assumptions used here are that the errors are spherical with zero mean for all i and t, constant uniform variance across all i and t, and zero covariances both across individuals for a given year t and across periods for each individual i. Although these assumptions are quite strong, our justification for using this approach is that we have very few panel observations per individual and each year's observation is important so that we do not wish to lose a time-series observation by taking first differences in the variables for each individual (which is the standard way of eliminating any person-specific fixed effects that may be present in the data).

The explanatory variables used in the OLS analysis are given in Appendix Table A1. The variables used are fairly standard and do not require further discussion, except in a few instances. A new variable used here is specific vocational preparation (SVP) which is based on an assessment made by the interviewing officer, to find out how well the person could undertake work in his intended occupation (see the note at the bottom of Table 3). The cohort dummy variables were included in the regression to find out whether there has been a decline in unobservable quality among the more recent cohorts, as claimed by some, including Borjas (1988). Similarly, a number of variables dealing with the interaction between pre-arranged employment and years of residence were included to test whether the impact on earnings is felt only in the initial years or whether it lasts for several. The other interaction of interest is between the educational categories and the country of origin. The reason for including these interaction terms is to find out whether employers tend to discount educational qualifications obtained from Third World countries relative to those obtained in Europe and the United States, Australia, and New Zealand. One problem we ran into with these interaction terms is that, in the case of assisted

relatives, there are zero observations on MAs and PhDs from South and Central America. Hence the interaction term for these two degrees was dropped from the ASSIS regression.

The foregoing discussion pertains to the first stage of the analysis. In the next stage, we try to find out how much of the earnings differential is attributable to differences in the observed characteristics of immigrants between the various classes. For this purpose, we use Oaxaca's (1973) decomposition method which has been widely used in the literature. The differences in earnings between, for example, the independents and the assisted relatives can be written as:

$$(2)\ \ln E_j - \ln E_a = \beta_j (X_j - X_a) + (\beta_j - \beta_a) X_a$$

where subscripts j and a denote the independents and assisted relatives respectively. The first term on the right-hand side of equation (2) represents the contribution of differences in immigrant characteristics between the two groups, which is the main focus of our analysis. The second term on the right-hand side is essentially an unexplained residual, representing the differences in the regression coefficients or market earnings structure between groups.

EMPIRICAL RESULTS

We first discuss the regression results obtained without the interaction terms mentioned earlier (Table 5). Most of the coefficients are significant and have the expected sign, and the explanatory power of the equations is also reasonably good. A key result common to all immigrant classes is that earnings tend to increase with the length of stay in Canada, although at a diminishing rate. The evidence also shows that ASSIS and DESCON experience a faster rate of growth in earnings than the independents, as they spend more time in this country.

The results pertaining to the cohort variables are mixed. While they are generally not individually

significant in the case of the independents, they are highly significant and negative for the other two groups. Further, in the case of ASSIS and DESCON, the differences in the coefficients are also significant, which suggests that the starting wages of each successive cohort were significantly lower than those of the preceding cohort. The most serious deterioration in entry earnings is observed in the case of the DESCON. Whereas the entry earnings of the DESCON who landed in 1982 was about 15 percent lower compared with the 1981 cohort, the initial earnings disadvantage of the 1983 and 1984 cohorts was much greater, ranging from 24 to 29 percent over this weak labour market period. The ASSIS also experienced a considerable initial earnings disadvantage relative to the 1981 cohort, ranging from 6 to 19 percent. Given the size of these initial earnings disadvantages, it would be interesting to find out whether the ASSIS and DESCON immigrants were able to overcome these initial obstacles and achieve parity in earnings with the independents. As shown in Table 6, both the ASSIS and DESCON have done quite well since landing. For example, the 1981 DESCON on landing earned only about 50 percent of the amount earned by the independents who landed in the same year. However, in ten years their earnings were estimated to rise to 85 percent of the earnings of the independents. The largest differential in entry earnings (relative to the independents) was experienced by the DESCON who landed in 1984. Immediately after landing, their earnings amounted to only about 36 percent of those received by the independents who landed the same year. However, in ten years, the earnings ratio was estimated to narrow to 61 percent. Similarly, the ASSIS have also experienced a considerable amount of convergence in earnings, although at a slightly lower pace than the DESCON.

Up to now, no mention has been made of the country of origin of immigrants. However, the evidence reveals that immigrant earnings vary by country of origin. Those from Africa, South and Central America, and Asian countries earn significantly less than those from Europe and the United States, and

TABLE 5

Results of Pooled Regression Analysis (Without Interaction Variables)

Coefficient	IND	ASSIS	DESCON
EXP	0.0257 (13.84)***	0.0147 (4.897)***	0.0333 (10.15)***
EXP2	-0.0006 (12.37)***	-0.0005 (8.230)***	-0.0009 (12.12)***
TRDC	0.1101 (8.686)***	0.0787 (4.186)***	0.0313 (1.916)*
SOME	0.1723 (8.549)***	0.0126 (1.048)	0.0378 (2.187)**
BA	0.3278 (22.18)***	0.0340 (1.965)**	0.1627 (6.081)***
MAP	0.3843 (22.55)***	0.3176 (5.368)***	0.3830 (8.326)***
YRC	0.0512 (12.67)***	0.0764 (11.54)***	0.1136 (18.82)***
YRC2	-0.0001 (6.630)***	-0.0001 (6.521)***	-0.0001 (11.70)***
ENG	0.2678 (17.49)***	0.1443 (8.700)***	0.1504 (7.533)***
FREN	-0.0326 (1.452)	0.1213 (1.562)	0.0894 (2.016)**
BIL	0.2535 (11.85)***	0.0351 (0.752)***	0.1683 (3.515)***
MARIT	0.2341 (22.35)***	0.2134 (12.04)***	0.1834 (11.18)***
SVP	0.0231 (12.20)***	0.0134 (4.055)***	0.0045 (1.498)
WAF	-0.1669 (12.60)***	-0.0798 (3.774)***	-0.5149 (19.14)***
SCA	-0.3371 (20.94)***	-0.2701 (9.999)***	-0.3736 (14.45)***
ESE	-0.2403 (17.06)***	-0.3137 (17.34)***	-0.3134 (12.96)***
ARRE	0.1773 (18.04)***		
ATLP	-0.0691 (6.446)***	-0.1021 (2.698)***	-0.2308 (13.56)***
BC	-0.1627 (10.93)***	-0.1478 (6.429)***	-0.1977 (10.51)***
QUE	-0.1224 (8.449)***	-0.2933 (12.85)***	-0.2880 (11.68)***
CO82	0.0021 (0.963)	-0.0621 (3.014)***	-0.1500 (5.212)***
CO83	-0.0682 (3.807)***	-0.1390 (6.472)***	-0.2237 (8.942)***
CO84	-0.0081 (1.360)	-0.1877 (10.540)***	-0.2884 (5.050)***
CONSTANT	9.2173 (284.6)***	9.2173 (185.6)***	9.0213 (178.6)***
R^2 (adj)	0.2725	0.1955	0.1581
No. of Persons	4085	1595	3341
No. of Obs	24633	9247	17804

Notes:
t-statistics are given within parentheses.
* represents significance at the 0.10 level.
** denotes significance at the 0.05 level; and
*** denotes significance at the 0.01 level;
Source: Author's compilation.

this applies to all immigrant classes. The worst affected are the DESCON from Africa and West Asia whose earnings are less than half the amount earned by DESCON from traditional source countries (mainly Eastern and Central Europe in this case). The plight of DESCON from South and Central America (including the Caribbean) and Asia (excluding West Asia) is only slightly better. They face a relative earnings disadvantage of more than 30 percent. The situation is equally grim for ASSIS from South and Central America and Asia (excluding West Asia), and even for the independents from South and Central America, and South, Southeast and East Asia. While it is not clear why these immigrants are paid less than those from traditional source countries, these findings have some relevance to the current situation since many of the recent DESCON are from Third World countries. For example, over the three most recent years for which the data are available — 1992, 1993, and 1994 — the leading source countries in Asia, Africa, and South and Central America have accounted for 82 percent, 86 percent, and 70 percent[6] respectively, of the total DESCON inflows to Canada. Thus, it is not clear *a priori* whether the optimistic scenario painted earlier applies to recent DESCON arrivals. In the case of the ASSIS, however, European countries have continued to be a major source region, accounting for a third of the inflow during the 1992-94 period, although there was a significant reduction in 1994.[7]

The other regression results presented in Table 5 are fairly standard and do not contain too many surprises. Experience recorded at the time of landing has a significantly positive effect on earnings but its magnitude is significantly lower than that of Canadian experience (YRC), which is exactly what one would expect. Similarly, with regard to education, the evidence yields the familiar result that it pays to have a university degree. Indeed, the higher the degree, the greater the earnings. Those with some university education but without a degree also tend to earn significantly more than those with only elementary and secondary education, except in the case of ASSIS, where the coefficient is positive but

lacks significance. Even if one is not able to attend university, it would be desirable to have a trade certificate or have vocational skills, since people with such qualifications often tend to earn significantly more than the reference group.

As to be expected, knowledge of English tends to enhance immigrant earnings. Compared with allophones, the earnings advantage of those who are fluent in English ranges anywhere from 14 to 27 percent, depending on the immigrant class. Bilingual proficiency is another factor which is significant for all immigrant groups. However, in the case of French proficiency, it was found to be significant only in the case of the DESCON.

Both pre-arranged employment and married status[8] have a positive influence on earnings. The province of residence also makes a big difference to earnings. Compared with residents in Ontario, those living in other provinces earn significantly less.

We now discuss the regression results obtained after including the two sets of interaction variables, that is, the interaction between country of origin and education and the interaction between pre-arranged employment and years of residence in Canada (Table A2). The inclusion of these interaction variables does not seem to alter the main findings reported earlier. As a result, the earnings profile with respect to years of residence in Canada generated from the model with the interaction variables (Table A3) is quite similar to the one presented earlier (Table 6). This being the case, we need to discuss only the interaction terms. With regard to pre-arranged employment, which applies only to the independents (the $ARRE.YRC_i$ terms), the evidence shows that its effect is highly significant in the initial years, but tends to peter out after four years. The evidence on the other set of interaction terms is not so clear-cut, which means that we are unable to conclude that educational qualifications obtained from Third World countries tend to be systematically undervalued relative to those acquired in such places as Europe and the United States.

T<small>ABLE</small> 6

The Earnings/Years of Residence in Canada Profile of Immigrants (based on model without interaction terms)

Cohort	YRC (1)	IND (2)	ASSIS (3)	Ratio(%)[1] (4)	DESCON (5)	Ratio(%)[2] (6)
			(in 1986 dollars)			
1981	0	28,461	17,017	59.8	14,190	49.9
	2	31,364	19,610	62.5	17,408	55.5
	4	34,563	22,599	65.4	21,356	61.8
	6	38,089	26,043	68.4	26,200	68.8
	8	41,974	30,012	71.5	32,142	76.6
	10	46,255	34,586	74.8	39,432	85.2
1982	0	28,521	15,960	56.0	12,062	42.3
	2	31,430	18,393	58.5	14,798	47.1
	4	34,636	21,196	61.2	18,154	52.4
	6	38,169	24,426	64.0	22,271	58.3
	8	42,062	28,148	66.9	27,322	65.0
	10	46,352	32,438	70.0	33,519	72.3
1983	0	26,520	14,652	55.2	11,016	41.5
	2	29,225	16,885	57.8	13,514	46.2
	4	32,206	19,458	60.4	16,580	51.5
	6	35,491	22,424	63.2	20,340	57.3
	8	39,111	25,841	66.1	24,953	63.8
	10	43,100	29,779	69.1	30,612	71.0
1984	0	28,230	13,823	49.0	10,098	35.8
	2	31,109	15,930	51.2	12,388	39.8
	4	34,283	18,357	53.5	15,198	44.3
	6	37,779	21,155	56.0	18,645	49.4
	8	41,633	24,379	58.6	22,873	54.9
	10	45,880	28,094	61.2	28,061	61.2

Notes: The above estimates were computed from the regressions reported in Table 5 by setting all variables except the cohort variables and YRC to their mean values.

[1] Column (4) shows the ratio of (predicted ASSIS earnings/ predicted IND earnings)x 100.
[2] Column (6) shows the ratio of (predicted DESCON earnings/ predicted IND earnings) x 100.

Source: Author's compilation.

We have also estimated the contribution of endowments to the earnings differentials among the three immigrant categories. We have done this only for the model without the interaction terms, since as we saw before, the results are virtually the same with or without the interaction terms. The results of the decomposition exercise show that in the case of IND and ASSIS, the superior endowments of the former can account for less than a third of the earnings differential between these two groups (see column (1) in Table 7). The factors contributing to the wage advantage of IND are their education and language skills (mainly English), and to a lesser extent, their country of origin — the majority of them are from Europe, the United States, Australia, and New Zealand (see Table 3). The only minor advantage enjoyed by ASSIS over IND is in vocational training. A similar decomposition of the earnings of IND and the DESCON shows that endowment differences again explain only about a third of the earnings differential (column(2)). As in the previous comparison, the two factors favouring the independents are language and education. Note, however, that English proficiency provides a much greater relative advantage to IND than in the previous comparison, accounting for almost one-half of the overall contribution of endowment differences to the earnings differential. In the third comparison which deals with ASSIS and DESCON, the contribution of endowment differences to the earnings differential is somewhat higher than in the case of the other two comparisons — about one-half (col-

TABLE 7

Decomposition of Earnings Differentials

	IND & ASSIS	IND & DESCON	ASSIS & DESCON
		(%)	
	(1)	(2)	(3)
Earnings differential	57.00	85.40	28.40
Endowment differential	18.03	30.10	13.70
	(31.63%)	(35.2%)	(48.20%)
-experience	-1.09	-0.71	-2.11
-education	9.14	5.89	-1.49
-YRC	0.44	1.65	1.81
-language	9.05	15.01	3.11
-marital	-0.09	1.99	1.89
-vocational skills	-4.26	3.77	0.67
-country	5.38	2.35	6.49
-province	-0.65	-0.77	0.17
-cohort	0.11	0.92	3.15

Note:
A positive sign means a wage advantage for the reference group — that is, IND in columns (1) and (2) and ASSIS in column (3); a negative sign means a wage advantage for the other group in each comparison.

Source: Author's compilation.

umn (3)). One big difference between this case and the other two cases is that neither language nor education provide a special advantage to ASSIS. The only factor that gives them an advantage over the DESCON is their country composition. This in turn can be explained by the differential impact of ESE (East, Southeast, and South Asia), which favours the ASSIS.[9] If we leave out ESE, the country of origin ceases to be an important factor in the contribution of endowment differences to the earnings differential between these two immigrant classes. On balance then, the main message emerging from Table 7 is that immigrant attributes reported at landing account for only a small proportion of the earnings differentials among the various immigrant classes.

CONCLUSIONS

The results reported here are based on a pooled analysis of four Canadian immigrant landing cohorts — 1981, 1982, 1983, and 1984. Only three immigrant classes were examined. They are the independents, assisted relatives, Convention refugees, and the designated class, the last two being combined into one group. The analysis is based on a subsample of a larger parent sample called the Immigration Database. Only male principal applicants are examined. The immigrant attributes included are those reported at the time of landing, which means that many other characteristics such as motivation, access to networks, and Canadian education have not been taken into account. The results are not adjusted for selectivity into the estimation sample because of the paucity of exogenous selectivity regressors apart from earnings determinants in the database.[10]

The findings of the study can be stated as follows. First, the principal finding of the analysis is that there has been considerable convergence in earnings between immigrant classes during the period examined. Although the Convention refugees and the designated class (DESCON) and assisted relatives (ASSIS) initially experienced a significant earnings disadvantage compared with the independents, they have been able to narrow the earnings gap to a significant extent over time. The progress made, especially by the DESCON, is extremely commendable in view of the fact that many of them did not speak English at the time of landing.

Second, the study finds that endowment differences or more precisely, immigrant attributes recorded at the time of landing, account for only a small portion of the earnings differentials that exist among the various classes. This implies that one has to look at some of the omitted or unobserved factors. For example, it may be that these groups have more motivation and initiative than others, which in turn have enabled them to overcome major obstacles to progress. Unfortunately, there is currently no evidence to substantiate this and other claims. Thus, there is an urgent need for further evidence in this area.

Third, it is important to note that not all members of DESCON and ASSIS have been equally successful. The most successful among them are those from Europe, whereas many of those from Third World countries have fared poorly. Even the independents from the latter countries do not seem to be an exception to this. This has relevance to the current situation as far as the DESCON is concerned, since the vast majority of them who have come recently are from Third World countries. It is not clear *a priori* as to whether the optimistic scenario painted earlier applies to these immigrants.

The analysis presented here has major implications for policy. Given that the evidence indicates rapid convergence in earnings and the relative lack of importance of many of the immigrant characteristics reported at landing, it follows that the younger the immigrant at the time of landing, the greater his chances of doing well in this country. Hence there is a strong indication that age at landing is probably the single most important observable determinant of an immigrant's ultimate success.

NOTES

[1]The actual landing figures are as follows:

	1981	1982	1983	1984
	(as a percentage of the total inflow)			
Family Class	39.7	41.2	54.6	49.7
Business Class	6.3	7.1	9.3	9.7

Source: Canada. Employment and Immigration Canada, 1984, p. 48.

[2]For more details, see Marrocco and Goslett (1985, pp. 221-24).

[3]The author is deeply indebted to Jean Bergeron of Citizenship and Immigration Canada for supplying some of the background material used in this section as well as for helpful discussions on a number of issues.

[4]See, for instance, Neuwirth (1989*a* and 1989*b*) and Samuel (1984). Other studies are cited in Samuel and Woloski (1985).

[5]Recent studies which have used this approach include Beach and Worswick (1993); Baker and Benjamin (1994); Bloom, Gunderson and Grenier (1994); and Nakamura and Nakamura (1992).

[6]The detailed breakdown of the supply of DESCON by source area is as follows:

	Africa & Middle East	Asia & Pacific	South & Central America	Europe
	(%)			
1992	37.0	26.8	14.2	21.5
1993	39.2	29.7	12.8	17.9
1994	27.2	28.1	8.8	35.6

Note: Due to coding errors, the totals do not add up to 100. These data are from Citizenship and Immigration Canada (unpublished).

[7]The actual percentages for these countries are as follows: 35.1 percent in 1992, 39.6 percent in 1993, and 16.5 percent in 1994. These figures are also taken from the same data source as those mentioned in the previous note.

[8]Some writers such as Nakosteen and Zimmer (1987) have shown that marital status is an endogenous variable. However, to keep the analysis simple, we have ignored this complication.

[9]More specifically, in the case of ESE, $_aX_a = -0.0115$ and $_aX_d = -0.0688$, so that $(_aX_a - _aX_d) = 0.0573$. Thus, while both bracketed terms are negative, the second term dominates the first.

[10]In earlier work, we tried to make an adjustment for selectivity bias, but were inhibited by the limited number of variables that could reasonably and autonomously explain inclusion in the sample and that were available in the database.

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APPENDIX

T<small>ABLE</small> A1
Variables Used in the Regression Analysis

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lnE	real earnings in logs (dependent variable);
EXP	experience at the time of landing, using Mincer's proxy(Age at landing — years of education — 6);
EXP^2	a quadratic term to reflect diminishing returns to experience;
YRC	years of residence in Canada;
YRC^2	a quadratic term to capture diminishing returns to YRC;

The following are 0-1 dummy variables:

TRDC	trade certificates and non-university diplomas (all of these educational qualifications refer to those recorded at the time of landing);
SOME	some university education;
BA	bachelor's degree;
MAP	master's and PhDs ; (ref. group: elementary and secondary education);
ENG	English proficiency (this plus all of the other language variables refer to those reported at landing);
FRE	French proficiency;
BIL	Bilingual proficiency; (ref. group: allophones)
MARIT	being married at the time of landing;
SVP	specific vocational preparation;
WAF	West Asia (incl. Middle East) and Africa (these are countries of last permanent residence, as distinct from places of birth);
SCA	South and Central America (incl. the Caribbean);
ESE	East, Southeast and South Asia; (ref group: Europe, the U.S., Australia and New Zealand)
ATLP	Prairies and the Atlantic provinces (i.e., province of residence during tax year);
BC	British Columbia;
QUE	Quebec; (ref group: Ontario).
ARRE	pre-arranged employment;
CO82	those who landed in 1982;
CO83	those who landed in 1983;
CO84	those who landed in 1984; (ref. group: the 1981 landing cohort)
ARRE.YRC	a series of interaction terms between prearranged employment and each year of residence in Canada (ref group: interaction between ARRE and last year of residence which is 1988);
TRDC.WAF	interaction between trade certificates and West Asia and Africa. Similar interaction terms for all other country groups and other educational categories; (reference group in all cases; the respective interaction term with Europe, the US, Australia and New Zealand).

TABLE A2

Results of Pooled Analysis (With Interaction Variables)

Coefficient	IND	ASSIS	DESCON
EXP	0.0262 (14.08)***	0.0139 (4.618)***	0.0340 (10.34)***
EXP2	-0.0006 (12.61)***	-0.0005 (7.930)***	-0.0010 (12.36)***
TRDC	0.1325 (7.856)***	0.0971(3.747)***	0.0890 (2.861)***
SOME	0.2023 (7.544)***	0.0292 (0.494)	0.1308 (2.432)**
BA	0.3727 (19.24)***	0.0825 (1.757)*	0.2431 (6.624)***
MAP	0.3737 (17.69)***	0.2897 (3.056)***	0.4699 (8.472)***
YRC	0.0504 (11.75)***	0.0758 (4.506)***	0.1099 (5.86)***
YRC2	-0.0001(2.648)***	-0.0001(2.945)***	-0.0001 (3.72)***
ENG	0.2778 (17.61)***	0.1585 (9.310***	0.1468 (7.290)***
FREN	0.0052 (1.216)	0.1415 (2.734)**	0.0916 (2.044)**
BIL	0.2603 (12.00)***	0.0461 (0.967)	0.1595 (3.289)***
MARIT	0.2298 (21.97)***	0.2118 (11.93)***	0.1837 (11.19)***
SVP	0.0224 (11.75)***	0.0118 (3.562)***	0.0042 (1.385)
WAF	-0.1391(3.615)***	-0.0817 (3.585)***	-0.5357 (11.30)***
SCA	-0.3250 (13.20)***	-0.2993 (7.885)***	-0.2507 (6.551)***
ESE	-0.2506 (8.376)***	-0.2804 (11.20)***	-0.2399 (7.158)***
ATLP	-0.0669 (6.236)***	-0.1026(5.500)***	-0.2266 (13.31)***
BC	-0.1580 (10.60)***	-0.1495(6.477)***	-0.2941(10.38)***
QUE	-0.1239 (8.545)***	-0.2911(12.66)***	-0.2855 (11.58)***
CO82	0.0017 (0.182)	-0.0593 (3.178)***	-0.1368 (5.052)***
CO83	-0.0563 (3.435)***	-0.1356 (6.588)***	-0.2043 (4.687)***
CO84	-0.0059 (0.215)	-0.1865 (10.482)***	-0.2678 (5.652)***
TRDC.WAF	-0.1164 (3.397)***	-0.0909 (1.764)*	0.1422 (4.264)***
SOME.WAF	-0.2176 (3.791)***	-0.3759 (3.006)***	-0.0776 (3.901)***
BA.WAF	-0.1423 (4.175)***	-0.0439 (0.626)	0.0112 (0.171)
MAP.WAF	-0.0115 (0.291)	0.0598 (0.430)	-0.2214 (1.75)*
TRDC.SCA	0.0174 (0.500)	0.0154 (0.263)	-0.1105 (1.926)*
SOME.SCA	0.0001(0.001)	0.0717 (0.705)	-0.4882 (5.820)***
BA.SCA	-0.1185 (2.760)***	0.2755 (2.244)**	-0.4627 (4.454)***
MAP.SCA	0.1908 (2.299)**		-0.1426 (0.710)
TRDC.ESE	-0.0054 (0.128)	0.0014 (0.0308)	-0.1811(3.139)***
SOME.ESE	0.0514 (0.920)	-0.1927(2.732)**	-0.1200 (1.431)
BA.ESE	-0.0391(1.035)	-0.1097 (1.945)**	-0.1229 (1.533)
MAP.ESE	0.1019 (2.364)**	0.0049 (0.035)	0.1638 (0.829)
ARRE.YRC1	0.2767(8.025)***		
ARRE.YRC2	0.2023 (5.772)***		
ARRE.YRC3	0.1563 (4.371)***		
ARRE.YRC4	0.1079 (3.060)***		
ARRE.YRC5	0.0610 (1.813)*		
ARRE. YRC6	0.0050 (0.159)		
CONST	9.2225 (241.4)	9.3273 (18.30)***	8.9675 (164.4)***
R^2 (adj)	0.2757	0.1974	0.1611

Note: For number of observations and other points, see notes at the bottom of Table 6.

TABLE A3
Earnings Profile With Respect to Years in Canada (based on model with interaction terms)

Landing Cohort	YRC	IND	ASSIS	Ratio[1] (%)	DESCON	Ratio[2] (%)
			(in constant 1986 dollars)			
	(1)	(2)	(3)	(4)	(5)	(6)
1981	0	28,422	16,993	59.79	14,003	57.34
	2	31,276	19,562	62.55	17,075	54.59
	4	34,416	22,520	65.43	20,822	60.50
	6	37,871	25,925	68.46	25,390	67.04
	8	41,673	29,845	71.62	30,960	74.29
	10	45,857	34,358	74.92	37,753	82.33
1982						
	0	28,470	15,985	56.15	12,087	42.46
	2	31,328	18,402	58.74	14,739	47.05
	4	34,474	21,184	61.45	17,973	52.13
	6	37,935	24,387	64.29	21,916	57.77
	8	41,744	28,075	67.26	26,724	64.02
	10	45,935	32,320	70.36	32,587	70.94
1983						
	0	26,822	14,689	54.76	11,142	41.54
	2	29,515	16,910	57.29	13,587	46.03
	4	32,478	19,466	59.94	16,567	51.01
	6	35,739	22,410	62.70	20,202	56.53
	8	39,327	25,799	65.60	24,635	62.64
	10	43,276	29,699	68.63	30,040	69.41
1984						
	0	28,254	13,824	48.93	10,253	36.29
	2	31,091	15,914	51.19	12,503	40.21
	4	34,212	18,320	53.55	15,246	44.56
	6	37,647	21,090	56.02	18,590	49.38
	8	41,427	24,279	58.61	22,669	54.72
	10	45,586	27,950	61.31	27,643	60.64

Notes: These estimates were computed from the regressions reported in Table A2 by setting all variables except the cohort variables and YRC to their mean values.

[1]Column (4) shows the ratio of (predicted ASSIS earnings/ predicted IND earnings) x 100.
[2]Column (6) shows the ratio of (predicted DESCON earnings/predicted IND rearnings) x100.