Preliminary and Incomplete: Please do not quote

THE NEW MIGRATION: GLOBAL LABOUR MARKETS AND RETURN MIGRATION

Abdurrahman Aydemir and Chris Robinson*

October 2003

* Abdurrahaman Aydemir is a Senior Economist in the Family and Labour Studies Division, Statistics Canada and Chris Robinson is the CIBC Chair in Human Capital and Productivity at the University of Western Ontario. The authors wish to thank Audra Bowlus for helpful discussions. This paper represents the views of the authors and does not necessarily reflect the opinion of Statistics Canada.

1. Introduction

Immigration is an important issue in many developed countries. In the various recent policy debates two issues are often prominent in the discussion. First, is the role that immigration can play in avoiding population decline or stagnation which is implied by the low fertility rates in developed countries. The total fertility estimates for 2002 are well below replacement for many developed countries such as Australia (1.77), Canada (1.60), Germany (1.39), France (1.74), Italy (1.19), Japan (1.42), Sweden (1.54) and the UK (1.73) and approximately equal to it for the US (2.07).[1] Immigration is a possible source of population increase to make up for the low domestic fertility rates both immediately in the form of the new immigrants themselves and in the future from the typically higher fertility rates among immigrant populations compared to native born in the developed countries. This role of immigration has received considerable attention, for example, in Canada.

The second issue is the role selective immigration can play in raising living standards in the host country by increasing the supply of highly skilled workers. In countries such as Canada that face a brain drain of emigrants to the US, it is often argued that skilled immigration can more than make up for this brain drain. The US which does not have its own brain drain problem also has a large number of highly skilled immigrants arriving each year, though there is considerable debate over the average skill level of immigrants in recent years. It is generally recognized that immigrants are not randomly selected individuals from their countries of origin. They differ from non-migrants in terms of both observed and unobserved characteristics. These selection effects come from the behaviour of the migrants themselves and on the behaviour of the host country in the selectivity implied by its immigration rules.

The contribution that immigrants make to the host country in either of these roles depends

---

[1]Source: *The World Factbook*, Washington DC, Central Intelligence Agency 2002; Bartleby.com, 2002.

both on the numbers and skill levels of immigrants that come in to the host country - an issue that has been studied extensively; on how long they stay - an issue that has received less attention; and on who stays - an issue that has received attention only recently. However, the issue of return or onward migration, and particularly who stays, is increasingly recognized as an important issue requiring further study. It is important because it can have a major impact on the net addition made to a host country's population by immigration.[2] It also affects, via the selective nature of the process, the quality of the immigrant stock and ignoring it results in substantial biases in studies of immigrant assimilation.[3]

In addition, evidence on out-migration is important for the design of immigration policy and has important implications for the payoff to the costs incurred for settlement and assimilation. Canada, for example, is a major host country and incurs substantial settlement and assimilation costs. To the extent that large numbers of immigrants return to their country of origin or use Canada as a stepping stone to the U.S. the return to these costs will be reduced. If immigration policy is designed to attract permanent immigrants to Canada it is important to understand the determinants of return or onward migration. Evidence on trends in out-migration is essential to keep policy up to date.

The literature on return migration has raised awareness that migration is not a permanent move for many migrants. However, return migration itself has often been taken as permanent, if only because of the data limitations in treating it differently. In the increasingly global labour market it may be more appropriate to treat international migration more like internal migration. Individuals may move around from place to place for job related or other reasons several times in a lifetime. Barriers to international labour movement have been reduced substantially in recent years. In North America the NAFTA provisions have made movement much easier. There is considerable evidence that it has stimulated a brain drain of Canadians to the United States,

---

[2]Warren and Peck (1980) drew attention to the importance of the magnitude of return migration for an accurate picture of the net addition made to the U.S. population by immigrants.

[3]See Jasso and Rosenzweig (1982) and Borjas and Bratsberg (1996) .

though the literature contains no evidence on whether this is permanent, or part of an increased flow back and forth.

The previous literature, briefly reviewed below, has already provided evidence of the magnitude of return migration in several countries and a start has been made on modeling the process and testing hypotheses regarding the important determinants. Thus far, the effort has been largely confined to "cross section" regression approaches. There have been, however, large changes in immigration patterns, particularly in the source country patterns for migration to developed countries such as Canada and the United States. Changes over time in the characteristics of immigrants and the speed of their assimilation have been the subject of much debate, but despite the strong connection, changes in the make up of return or onward migration have not been investigated. The lack of data has also prevented much analysis of whether international migration is increasingly more like internal migration and not a once-for-all move with possibly a return should the move prove to have been a mistake.

In this paper we investigate changes over time in both the extent of return migration and the selectivity of return migrants using both newly available administrative and census data from Canada. These data sets contain a rich set of variables, including category of immigrant, and provide a unique set of longitudinal data at the individual level on immigrant earnings. In addition, the longitudinal nature of the data makes possible the investigation of evidence on the nature of the migration as it relates to the global labour market. In particular, evidence is presented on the extent of multiple moves among immigrants in Canada suggesting that neither initial nor return migration is permanent, but both are the kind of "temporary" phenomena observed in worker movement across job locations in internal migration. The longitudinal nature of the data set also makes it possible to examine business cycle effects on return migration, hitherto unexamined. In particular, it is possible to investigate whether a downturn in the business cycle causes a loss of skilled immigrants through return migration.

The policy debate in Canada has pointed to immigration as possible compensation for the brain drain to the U.S. In other work we are investigating the extent to which native born

Canadian migrants to the U.S. are increasingly being drawn from the upper tail of the wage distribution in Canada. In this paper the analysis is focused on changes in the numbers, the timing and the selectivity patterns of return or onward migration. The plan of the paper is as follows. In section 2 the previous research on return migration is reviewed. It documents the importance of return migration and the variation in return migration by source country of the immigrant. In section 3 the data sets used in the analysis are described. Section 4 presents estimates of the fraction of immigrants retained in Canada from a variety of cohorts. This evidence shows a large amount of return migration and substantial variation in magnitudes over time and by various characteristics including class of immigrant and source country. Section 5 documents the global labour market phenomenon of repeat migration. A multivariate analysis is undertaken in Section 6 to examine the partial effects of the potential determinants of return migration. Some conclusions and an outline of future work are given in section 7.

2. Previous Research on Return Migration

Empirical studies of out-migration of immigrants have been hampered by the lack of longitudinal data on immigrants that would directly identify leavers. Many studies use repeated cross section data, such as a national census, and focus on obtaining estimates of the amount of out-migration. Warren and Peck (1980) for example, use the US censuses for 1960 and 1970, together with Immigration and Naturalization Service (INS) statistics on aliens admitted for permanent residence, to estimate total emigration in the period 1960 - 1970, and the fraction of immigrants admitted between 1960 and 1970 that had emigrated by 1970. Their estimates show that more than one million foreign born persons left the United States in the decade. They conclude that the "implications of substantial foreign born emigration for U.S. population growth are obvious. Rather than 400,000 persons being added to the U.S. population each year (the level of net immigration currently used by the Census Bureau in its population projections), the real addition is probably closer to 250,000 each year."[4]

[4]Warren and Peck (1980), p. 79.

Jasso and Rosenzweig (1982) was able to use the U.S. Alien Address Report Program which simulates a longitudinal research design. Combining this with mortality records and survey data, Jasso and Rosensweig (1982) obtain estimates of cumulative net rates of emigration for the 1971 legal immigrant cohort at about eight years after entry. An important feature of these estimates is that they were obtained by country of origin which permits some consideration of some, possibly very important, selection effects in emigration. Like the earlier literature, Jasso and Rosenzweig (1982) estimate large emigration rates: "The emigration rate for the entire cohort could have been as high as 50 percent. Canadian emigration was probably between 51 and 55 percent. Emigration rates for legal immigrants from Central America, the Caribbean (excluding Cuba), and South America were at least as high as 50 percent and could have been as high as 70 percent. On the other hand, emigration rates for Koreans and Chinese could not have exceeded 22 percent."[5] Borjas and Bratsberg (1996) report a similar pattern of outmigration rates by country of origin.

[Incomplete]

3. The Data

Two major data sources are used in the study: the administrative data contained in the Landing Records (LIDS), and the Longitudinal Immigration Database (IMDB), together with the five censuses held between 1981 and 2001. The LIDS file is a rich source of immigration data, recording all landings in Canada from 1980 onwards and containing a wide variety of personal, demographic and program data including the immigrant category. The IMDB matches the LIDS with earnings from the tax records, thereby providing a longitudinal earnings record for immigrants that remain in Canada after landing.[6] The longitudinal aspect is especially valuable for a variety of important immigration related questions.

The census data used are the 20% samples of the population for the 1981, 1986, 1991,

---

[5]Jasso and Rosenzweig (1982), p. 289.

[6]To be included in the IMDB an individual has to file at least one tax return after landing.

1996 and 2001 censuses. Reverse Record Checks are the means of assessing the completeness of the coverage of a census by taking a sample of individuals recorded in the previous census and tracing them to verify whether, if eligible, they appeared in the current census. As part of this process, individuals who emigrated are identified. In principle this is an excellent source of direct evidence of emigration at the individual level. Unfortunately there are some drawbacks. First, despite quite thorough processes for tracing all individuals in the sample, there always remain some individuals who cannot be traced and whose emigration status, therefore, cannot be identified. Second, the sample size of the immigrant population in any one Reverse Record Check is relatively small so that the number of emigrants from the immigrant population identified between any pair of censuses is quite small.

4. Estimating the Fraction of Immigrants Retained

In this section, the first estimates of the retention of immigrants in Canada are based on a conceptual framework analogous to that of Borjas and Bratsberg (1996) for the United States. They work with a generic out-migration rate defined as:

$$q(t, t') = [I(t) - R(t')] / R(t')$$

where I(t) is the number of persons who immigrate in year t and R(t') is the number of those immigrants who remain as of t'. The source of I(t) in Borjas and Bratsberg (1996) is INS microdata which recorded every legal immigrant admitted into the U.S. between July 1, 1971 and September 30, 1986. The source of R(t') is the 1980 census so that t' is April 1, 1980.[7] The analogous sources for Canada are LIDS for I(t) and the relevant Canadian census for R(t'). The retention of immigrants in Canada can then be measured by fraction of immigrants arriving at time t who are still retained at time t':

[7]Some adjustment was necessary to make the census comparable with the INS. In particular, an estimate of illegal immigrants in the census was necessary since the INS covers only legal immigrants. In addition, the immigrant cohorts were "aged" to April 1, 1980 using age/sex specific mortality rates to estimate survival. For a detailed description of the adjustments, see Borjas and Bratsberg (1996), pp. 168-170.

$$r(t',t) = R(t')/I(t)$$

The time path of the retention percentages for males, r(t',t), for the one year landing cohorts that match up with the Canadian census periods are given in Table 1.[8] The time pattern is quite marked. The census years 1981 and 1991 were both recession years; the 1986 and 1996 years were not. Comparing each pair of years the 5 year survival rates are substantially lower for the more recent cohorts. For all males, the 1981 cohort percentage retained after 5 years is 82.5 compared to 74.6 for the 1991 cohort - a decline of 10%. The 10 year survival rates fall even more: the retained percentage for the 1981 cohort after 10 years is 79.2 compared to 65.9 for the 1991 cohort - a decline of 17% . Similarly, across the 1986 and 1996 cohorts there is a fall in the percentage retained after 5 years from 92.3 to 78.3 - a decline of 15%.

The population of male immigrants includes both workers and non-workers whose emigration rates are likely to be influenced by various factors in different ways. In the lower half of Table 1 the survival percentages are presented for males with age at landing between 25 and 35 to focus on retention of the working age population. The patterns observed in the total population of males are further exaggerated in this population. The 5 year survival percentages for the 1981 and 1991 cohorts are 78.3 and 65.5, respectively - a decline of 16%; after 10 years the decline is 26%. For the 1986 and 1996 cohorts the decline in the 5 year survival percentage is 25%. These are large declines in landing cohorts separated by only a decade. There is also some indication in Table 1 that entering during a recession year may be quite strongly related to survival rates. This is examined in more detail in Table 2.

Table 2 compares the survival percentages in 2001 of selected cohorts that landed just before, during, and just after the recessions of 1981/2 and 1991/2. The data are presented for the worker only sample and the total male population. For both groups Table 2 shows a clear "recession effect". The cohorts arriving during the recession years have survival percentages that

---

[8]In this draft we abstract from problems of mortality and illegal immigrants deal with in Borjas and Bratsberg (1996), focusing on trends rather than absolute rates. Implicitly we are assuming that mortality and illegal immigration rates are stable over the period.

are well below those of the cohorts arriving in the immediately pre- and post-recession years. In the total male population the survival percentage in 2001 of the 1981/2 recession cohorts was 13% lower than that of the pre-recession cohort of 1980 and 8% lower than that of the post-recession cohort of 1983.[9]

Tables 3 & 4 examine the retention rates by education and source region - two characteristics that are available in the census as well as the landing records. Table 3 divides the immigrants into three education groups: secondary education or less; non-university certificate, diploma, apprenticeship; and bachelor's degree or more. Retention rates for the middle group tend to be the lowest. In all cases, however, the 5 year retention rates are declining substantially across pairs of "comparable" years, 1981/1991 and 1986/1996. There is also some evidence that the declines are largest for the most highly educated group. In the 1981, 1986 and 1991 cohorts the 5 year retention rates for those with a bachelor's degree or more were the highest of the education groups by a substantial margin. By 1996 the rates are the same across groups.

In Table 4 the estimated retention rates are presented by source country. As expected from the previous North American literature, they show considerable variation. The lowest rates are for North America and the highest for Africa. The sample sizes for the source country breakdown are considerably smaller than for the previous tables and many of the point estimates for Africa, for example, are greater than 100%. In addition to sample size, however, there are other problems with combining census and landing records data discussed below. The actual magnitudes should thus be interpreted with some caution. The breakdown by source country continues to show the business cycle pattern and in most cases, substantial declines over time. Asia, in particular, has a very dramatic drop after the 1986 cohort. This is examined in more detail in the multivariate analysis in Section 5.

The major disadvantage of the Borjas and Bratsberg (1996) method is that it cannot

---

[9]Since the 1983 cohort has been aged on average a year and a half less by 2001 than the recession years cohort, its retention percentages would in any case be higher, but as a percentage of years elapsed to 2001, the difference between the cohorts is small and would not be expected to have a major effect.

examine migration at the individual level even though administrative data on immigration are available at this level because of the reliance on the census data to identify leavers. Since there is no individual link from the administrative data to the census, individual characteristics of the leavers cannot be identified, only averages. Other disadvantages follow from the fact that the absence of this link requires a variety of adjustments to be made to the census figures to make sure that they are comparable to the administrative records cohort. These include census enumeration problems, illegal immigrants, mortality issues and census respondent recall of their immigration date many years after the fact. The impossibility of an individual level analysis from this method means that many important questions cannot be answered. The IMDB presents an excellent alternative method that avoids all of these problems. It requires, however, an identification assumption for leavers based on tax filing records or simply a re-interpretation of the relevant question from whether an immigrant is "resident" in the country or filing taxes in the country. This issue is discussed further below. For the remainder of this section we present preliminary estimates of retention rates based on IMDB data for comparison with the census method based estimates.

The IMDB matches the LIDS with earnings from the tax records, providing an alternative definition of an immigrant's residence or absence from Canada after landing. To the extent that return migration is a permanent phenomenon and tax filing is universal, a return migrant could be identified as an immigrant who ceases to file for taxes. It may be the case that there are periods of non-filing when some immigrants remain in Canada. Filing behaviour of native born will be examined in future work to establish a benchmark. In fact, the IMDB data show that there are many cases of immigrants reappearing in the tax records after various lengths of absence, though the chances of reappearance appear to decline with the length of absence. This will also be examined in more detail in future work. For a preliminary comparison with the census method, Table 5 presents the retention rates that would be calculated if 2 years of consecutive non-filing were considered equivalent to emigration.

A comparison of Table 5 with the lower half of Table 1 shows considerable differences, especially in the time pattern. There is still evidence of a decline in the retention rate over time

from the 1986-1996 comparison, but there is no change in the 1981-1991 comparison in Table 5 compared to Table 1 either for the 5 year or 10 year retention rate. The census data are affected by a change in the question in 1991. In 1991 the questions ask specifically about the year landed immigrant status was obtained whereas prior to that the question was more vague, asking in what year the person immigrated to Canada which may not always correspond to the year of landing. The IMDB data, by contrast, rely on tax filing and tax filing behaviour could also change over time.

5. Evidence of Intermittent Residence in Canada

As noted earlier, the IMDB tax filing data show intermittent filing for many individuals. It is possible for individuals who have landed and filed taxes to have periods of non-filing of, say, 4 years, and then to recommence filing. From the IMDB it is not possible to know if these individuals had left the country for a period and subsequently returned, or were in the country and had periods of non-filing. Some comparison with native born tax filing behaviour may shed some light on this. However, the intermittent nature of tax filing is of interest in itself. If the lack of tax filing does indicate absence, then it will allow the calculation of the contribution of a given cohort of immigrants to the work force. If it indicates instead just the absence of paying taxes, it will allow the calculation of the contribution of the cohort to taxes. Further, unlike a census approach, it will permit an analysis of the possibly intermittent nature of either type of contribution from various types of immigrants, whether this is truly changing residence, as an increasingly global labour market might suggest, or whether it is simply changing tax paying.

In the next section the possibly intermittent nature of residence in Canada is explicitly taken into account in a multivariate analysis. Instead of focusing on any arbitrary definition of permanent return migration, the analysis examines the determinants of the interval between landing and the first consecutive 4 year spell of non-filing. An individual may recommence tax filing after such a spell, but implicitly this is treated as a new “spell” in Canada.

6. Multivariate Analysis

The tabular evidence in the earlier sections indicated that immigrant residence (or tax paying) behaviour varies considerably with individual characteristics such as country of origin and over time both secularly and cyclycally. In this section multivariate analysis to examine the relation between various characteristics and the interval between landing and the first absence from the tax files of 4 or more consecutive years. Recent international migration is viewed as being sufficiently influenced by the global labour market to treat all "spells" in a given country analogously to job spells. In an internal migration setting, many individuals have intermittent spells in various jobs or occupations. All moves are potentially temporary and all jobs may be returned to. The focus of interest then shifts to an examination of the determinants of the spell lengths.

The first approach to the problem conducted here uses an interval regression statistical model to assess the role of the covariates of interest in determining the length of the first spell. The data are such that while the landing date is know precisely, i.e. no left censoring, the date of the end of the spell is only known within an interval because of the annual nature of tax filing, or not known at all because of right censoring. Interval regression generalizes Tobit or censored regression models to include the interval data as well as the censored data. The results are presented in Table 7.

The variables are all entered as dummy variable sets. The omitted category is a single individual with a secondary education or less or 13 years or more secondary education without any degree, diploma or certificate, fluent in English, admitted under the family class, with age at landing 25-29 and arriving from North America in the 1980-82 landing cohort. The later cohorts, as suggested in the earlier tables, do have a shorter stay and the magnitudes are substantial. The omitted category has an estimated spell of 14 years. The 1990-92 cohort has a stay that is four and a half years shorter and the 1993-96 cohort has a stay that is two and a half years shorter. To the extent that the covariates capture all other relevant characteristics of the cohorts, the cohort dummy variables will reflect the effect of the different conditions in Canada that the cohorts face.

In particular, they will reflect economic conditions at entry. The earlier tables suggested that there may be some business cycle effects with immigrants entering in recession years staying a shorter period. The results in Table 7 show some evidence of this in the significantly shorter stay estimated for the 1990-92 cohort compared with the cohorts on either side of this recession - 1986-89 and 1993-96.

There are some statistically significant differences by education, but the magnitudes are not very large. Those with a university education have about a 5 months shorter stay than the lowest education group. The middle group stay 4 months longer. Language effects are stronger with fluency in French tending to shorten the stay by a year to a year and a half. Marriage effects are also significant with married immigrants having a stay that is longer by about 15 months than the single and nearly 2 years compared to widowed, divorced or separated.

Canada's immigration system admits individuals on the basis of a points system in a variety of immigrant classes, each with their own criteria for admission: family class, skilled class, etc., as well as via a refugee process. These classes have substantially different implications for the length of stay in Canada. The shortest stay is for those in the business class, self-employed, entrepreneur and the skilled worker class, followed by the assisted relative class. The longest stays occur for refugees and the "other" group which includes, importantly, the backlog clearance group. The business class and skilled worker class have stays that are shorter by 31 and 20 months, respectively, compared to the family class. This is consistent with the notion of a global labour market since these groups would be most likely to experience mobility induced by changing relative labour market conditions in various countries. Within the age range of 25-45, age at arrival has no significant effect on length of stay.

The earlier tables, as well as much of the previous literature for the U.S., showed strong differences by source country. This is also apparent in the multivariate analysis, holding up when the other important covariates are held constant. The omitted group is North America. All, except for the special case of Hong Kong and those from South and Central America, stay much longer than this group. Those from Europe or the Middle East, for example, stay 5 years longer. Given

the potential stimulus to mobility in North America from the NAFTA agreement, it would be interesting to examine changes in these effects over time.

The interval regression estimates in Table 7 rely on an assumption of normality for months of stay which may not be a good approximation to the true distribution. Table 8 presents the results for log-normality with the dependent variable transformed to log-months. With one important exception, the qualitative results are identical to those in Table 7, though the magnitudes are often exaggerated. There appears to be a strong recession effect for the 1990-92 cohort. The highest education group has the shortest stay, though the effect is a modest 9% difference. Fluent French or bilingual English-French is associated with a 30% shorter stay compared to fluent English only. The business class stay is 57% shorter than family class, and the skilled worker class is 35% shorter. Refugees on the other hand stay 25% longer. The source country effects are also qualitatively the same, except for the Middle East, though again the magnitudes are exaggerated relative to Table 7. The stay for an immigrant from Europe, for example is double the stay for an immigrant from North America.

The important exception to the similarity of the qualitative results in Tables 7 & 8 is the lack of any evidence of a trend to shorter stays over time. The recession effect for the 1990-92 cohort is strongly apparent in Table 8 as in Table 7. It has a 30% shorter stay than the cohort immediately preceding it and a 60% shorter stay than the cohort immediately following it. However, while the 1986-89 cohort has a shorter stay than the 1983-85 cohort, the most recent 1993-96 cohort has the longest stay of all. Since detailed labour market conditions are not controlled for, this lack of evidence should be viewed with some caution.

An additional feature of the preliminary evidence from the census method was the pattern of changes in the relative incidence of return migration by education, suggesting that the leaving rate for the higher educated group was increasing relative to the rates for the other groups. To investigate this possibility in the multivariate analysis, the interval regression model was re-estimated including interaction terms for education and cohort.

[Incomplete]

7. Conclusions and Future Work

[Incomplete]

References

[Incomplete]

Table 1: Retention Rates at 5, 10, 15 & 20 Periods After Landing: Males

		Retention Rates at Various Years after Landing			
		5 years	10 years	15 years	20 years
Year	Landings				
All Males					
1981	63470	82.5	79.2	72.8	69.9
1986	49380	92.3	88.2	84.3	
1991	116720	74.6	65.9		
1996	111290	78.3			
Males Aged 25-35 at Landing					
1981	18040	78.3	79.3	71.9	69.2
1986	15580	91.2	87.6	80.9	
1991	40860	65.5	58.9		
1996	32920	67.95			

Notes: The number of landings are from the Landings Records and are for the calender year. The retention rates are based on the census counts in the relevant census years of individuals recording their year of migration.

Table 2: Retention Rates in 2001 and the Business Cycle: Males

Landing Year	Retention Rate at 2001	
	All Ages	Age 25-35 at Landing
1980	78.3	78.60
1981	69.9	69.18
1981-2	68.5	
1983	74.2	73.15
1990	79.3	75.00
1991	65.9	58.87
1991-2	65.6	
1993	72.2	67.44

Notes: see notes to Table 1.

Table 3: Retention Rates at 5, 10, 15 & 20 Periods After Landing, by Education: Males Aged 25-35 at Landing

		Retention Rates at Various Years after Landing			
		5 years	10 years	15 years	20 years
Year	Landings				
Secondary Education or Less					
1981	5610	80.7	81.2	80.2	75.0
1986	6760	87.6	89.7	78.4	
1991	17850	64.3	56.8		
1996	9110	68.7			
Non-University Certificate, Diploma, Apprenticeship					
1981	7140	72.1	74.5	60.8	61.2
1986	5180	87.5	80.6	73.3	
1991	12560	61.5	57.7		
1996	8750	66.8			
Bachelor's Degree or More					
1981	5270	84.7	84.0	78.4	74.0
1986	3630	103.1	93.7	96.4	
1991	9880	76.4	67.4		
1996	15060	68.2			

Notes: see notes to Table 1.

Table 4: Retention Rates at 5, 10, 15 & 20 Periods After Landing, by Source Region: Males Aged 25-35 at Landing

		Retention Rates at Various Years after Landing			
		5 years	10 years	15 years	20 years
Year	Landings				
North America					
1981	1440	46.8	41.3	40.8	36.3
1986	750	61.8	67.2	51.4	
1991	580	63.0	77.0		
1996	690	51.7			
Europe					
1981	7680	73.8	71.6	61.6	61.6
1986	4140	84.5	85.3	77.9	
1991	8240	69.9	62.1		
1996	6940	76.3			
Asia					
1981	5850	93.3	92.8	86.9	79.4
1986	6650	94.0	90.5	90.2	
1991	21050	64.4	57.2		
1996	19950	61.3			
Africa					
1981	820	98.3	126.7	121.1	125.7
1986	1170	133.6	112.1	87.3	
1991	4180	69.6	57.7		
1996	2490	88.4			

Notes:

Table 5: Tax Filing Retention Rates at 5, 10, 15 & 20 Periods After Landing: Males Aged 25-35 at Landing

		Retention Rates at Various Years after Landing			
		5 years	10 years	15 years	20 years
Year	Landings				
1981	18040	72.5	66.0	64.4	62.7
1986	15580	79.9	77.3	75.3	
1991	40860	73.5	68.0		
1996	32920	73.4			

Notes: The number of landings are from the Landings Records. The retention rates are based on the assumption that two consecutive years of non-tax-filing as recorded in the IMDB constitute emigration.

Table 7: Interval Regression Model of the First Spell of Residence in Canada (Months), Various Cohorts, Age at Arrival 25-45.

Variable	Coefficient	Standard Error
Landing Cohort (1983-85)	.7732572	2.887741
Landing Cohort (1986-89)	-26.35165	2.23782
Landing Cohort (1990-92)	-53.68199	2.230132
Landing Cohort (1993-96)	-30.37071	2.263153
Non-university post-secondary	4.136934	1.715853
Bachelors, masters, PhD	-4.934527	1.672807
Fluent French	-13.3406	3.082329
Fluent English & French	-18.01321	2.707426
Fluent neither	12.39668	1.717498
Married	14.89674	1.535068
Widowed, divorced, separated	-7.957921	4.309167
Business class, self-employed, entrepreneur	-31.01493	2.909807
Skilled class	-20.07024	1.928563
Assisted relative class	-7.542299	2.424433
Refugee	13.18573	2.178952
Other (e.g. backlog clearance)	15.25131	2.769388
Age at arrival 30-34	-2.12797	1.689257
Age at arrival 35-39	-3.377808	1.945691
Age at arrival 40-45	.2107702	2.185857
Europe	58.01982	3.496838
Asia excluding Hong Kong	46.47795	3.446513
Hong Kong	-16.39838	3.695967
Middle East	.587742	2.961248
Africa	50.74092	4.028398
Carguy	71.65702	4.219696
Socenam	1.609396	4.175152
Ocaust	29.36891	6.61569
Constant	171.9448	3.872736

Notes: The omitted categories are landing cohort 1980-82; education secondary or less or 13 years or more without any degree, diploma or certificate; fluent English; single; immigration class: family; age at landing 25-29; source country: North America.

Table 8: Interval Regression Model of the First Spell of Residence in Canada (Log Months), Various Cohorts, Age at Arrival 25-45.

Variable	Coefficient	Standard Error
Landing Cohort (1983-85)	.2628736	.0555862
Landing Cohort (1986-89)	.0480811	.0429321
Landing Cohort (1990-92)	-.2587033	.0426241
Landing Cohort (1993-96)	.343567	.0429721
Non-university post-secondary	.0740616	.0323824
Bachelors, masters, PhD	-.0911253	.0315363
Fluent French	-.2745188	.0581121
Fluent English & French	-.3358121	.0511283
Fluent neither	.2034523	.0323242
Married	.2848102	.0289358
Widowed, divorced, separated	-.1575642	.0813885
Business class, self-employed, entrepreneur	-.5740638	.0548399
Skilled class	-.3470951	.0364093
Assisted relative class	-.1762004	.045647
Refugee	.2480762	.0410604
Other (e.g. backlog clearance)	.275027	.0519979
Age at arrival 30-34	-.0492578	.031884
Age at arrival 35-39	-.0761667	.036695
Age at arrival 40-45	-.0102521	.0411943
Europe	.9920677	.0663817
Asia excluding Hong Kong	.7125851	.065347
Hong Kong	-.5599389	.0700272
Middle East	.0694477	.0556858
Africa	.8421797	.0762604
Carguy	1.227727	.079943
Socenam	-.1526222	.0790633
Ocaust	.4925479	.125253
Constant	5.081551	.073618

Notes: The omitted categories are landing cohort 1980-82; education secondary or less or 13 years or more without any degree, diploma or certificate; fluent English; single; immigration class: family; age at landing 25-29; source country: North America.