Canadian Labour Market and Skills Researcher Network

Working Paper No. 13

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Michael Abbott
Queen's University

Charles M. Beach
Queen's University

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CLSRN is supported by Human Resources and Social Development Canada (HRSDC) and the Social Sciences and Humanities Research Council of Canada (SSHRC). All opinions are those of the authors and do not reflect the views of HRSDC or the SSHRC.

Immigrant Earnings Distributions and Earnings Mobility in Canada: Evidence for the 1982 Landing Cohort from IMDB Micro Data*

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Michael Abbott and Charles M. Beach
Queen's University

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JEL Codes: J610, J680, J180
Keywords: Immigrant Earnings, Earnings Mobility of Immigrants, Canadian Immigrant Earnings

* The authors would very much wish to thank for their invaluable data and programming assistance Colleen Dempsey, Tristan Cayn, Jessie-Lynn MacDonald and Eden Thompson, all of Citizenship and Immigration Canada. A preliminary version of this paper was presented at the CLSRN Immigration Workshop in Vancouver, B.C., October 13-14, 2007. The authors thank the workshop participants for their many thoughtful comments and suggestions.

ABSTRACT

This paper provides preliminary results from the IMDB panel database on the earnings distribution and earnings mobility of Canadian immigrants over their first post-landing decade in Canada. In this study we examine only the 1982 landing cohort of immigrants and follow them through to 1992. We examine earnings outcomes by four immigrant admission categories (independent economic immigrants, family class immigrants, and refugees) and separately for men and women.

We find that there was indeed a substantial increase in the real earnings of 1982 immigrants over their first ten post-landing years in Canada. Annual earnings were initially highest for independent economic immigrants (all of whom are principal applicants) and lowest for refugees. But the growth rate of earnings was highest among refugees, so that by the tenth post-landing year refugees had the second-highest annual earnings levels after independent economic immigrants. Earnings inequality among immigrants in the 1982 landing cohort changed over the ensuing decade in a manner consistent with onward migration beyond Canada from the top end of the immigrant earnings distribution. In fact, sample attrition in the IMDB database was greatest among independent economic immigrants, followed by refugees. Earnings mobility was substantially greater for immigrants than for earners as a whole in the Canadian labour market, and declined with years since landing for both male and female immigrants. Earnings mobility was also greater among immigrant women than among immigrant men. The results indicate that the point system is effective in admitting higher-earning immigrants who succeed in moving ahead in the Canadian labour market, but suggest that onward (or through) migration among the most skilled immigrant workers may be a policy concern.

EXECUTIVE SUMMARY

This paper presents new empirical evidence on immigrant earnings *levels*, earnings *inequality* and earnings *mobility* over immigrants' first ten post-landing years in Canada following their admission to Canada as landed immigrants or permanent residents. It investigates how earnings levels, earnings inequality and earnings mobility differ by admission category (i.e., among independent or economic class immigrants, family class immigrants, and refugees) and by gender. It also seeks to document the extent of sample attrition within landing cohort admission categories and the effects of such attrition on immigrants' earnings outcomes. The empirical analysis of the paper is based entirely on individual micro data from the longitudinal IMDB database for the 1982 landing cohort that follows these immigrants over their initial post-landing decade in Canada from 1983 to 1992.

The paper has two major analytical components. The first component focuses on immigrant earnings *distributions* and earnings *inequality*. It investigates whether immigrant subgroups defined by gender and admission category are persistently over-represented in either the lower or upper tails of the aggregate immigrant earnings distribution. It also investigates how immigrant earnings distributions and inequality evolve over time as 1982 immigrants progress through their first post-landing decade in Canada. The second part of the empirical analysis provides new evidence on immigrant earnings *mobility*, i.e., on how the earnings of individual immigrants actually change from year to year or over longer intervals within their first post-landing decade as they become integrated into the Canadian labour market. Again, results are analyzed by gender and major admission category. The approach used to measure immigrant earnings mobility consists of detailed (6x6) transition matrices and summary mobility measures based on them.

Several major empirical findings have been obtained for the 1982 immigrant landing cohort. First, there was indeed a substantial increase in the real (CPI adjusted) earnings of immigrants – both male and female – over their first post-landing decade in Canada. Although initially well below the average earnings levels of all wage and salary earners in the Canadian labour market, the mean annual earnings of both male and female immigrants in the 1982 landing cohort rose much more rapidly over the ensuing decade, and by 1992 substantially exceeded the mean annual earnings of all male and female earners in Canada. Second, across admission categories, mean and median earnings were initially highest for independent class immigrants (all of whom are principal applicants) and lowest for refugees. But the subsequent rate of earnings growth was highest among refugees and lowest among independent class immigrants. By the end of their first decade in Canada, independent class immigrants – female and male – still had the highest mean/median earnings levels, refugees had the second highest earnings levels for males, and family class immigrants together with other economic immigrants had the lowest earnings levels for both female and male immigrants in the 1982 cohort.

Third, earnings inequality (as measured by the coefficient of variation) was initially

higher among male and female immigrants in the 1982 landing cohort than it was among wage and salary earners as a whole in Canada, and increased over the ensuing decade in a manner generally similar to the increase in earnings inequality among all earners in the Canadian labour market. The lower tails of the male and female immigrant earnings distributions fell relative to their respective medians over the 1982 landing cohort's first ten post-landing years 1983-1992. However, the upper tails of both the male and female immigrant earnings distributions moved steadily towards the medians of their respective distributions – in marked contrast to the divergence from the median that was occurring at the upper end of the earnings distribution for all Canadian wage and salary earners over the 1983-1992 period. The movement towards the median of the upper ends of the male and female immigrant earnings distributions is quite consistent with sample attrition from out-migration by higher-skilled, higher-earnings immigrants to other countries arising from either return migration to their countries of origin or onward migration to third countries such as the United States. For both male and female immigrants in the 1982 landing cohort, sample attrition was greatest among independent economic immigrants, somewhat less among refugees, and least among family class immigrants. For male immigrants in the independent economic category, sample attrition was greatest over the first five years after landing in Canada. Moreover, the decline of the upper earnings percentiles relative to the median was largest for both male and female immigrants in the independent economic and refugee admission categories.

Fourth, individual earnings mobility was substantially greater for 1982 immigrants than for earners as a whole in the Canadian labour market. It was also greater for immigrant women than for immigrant men in the 1982 landing cohort – which is opposite to the pattern observed for earners as a whole in Canada. The degree of earnings mobility declined with years since landing for both males and females in the 1982 landing cohort: for example, earnings mobility over the second half of the 1982 cohort's first post-landing decade was lower than it was over that cohort's first five post-landing years in Canada.

The study's major empirical findings give rise to some interesting policy implications. First, the Canadian point system under which independent economic immigrants are admitted to Canada appears to be generally effective in attracting and admitting higher-skilled and hence higher-earnings workers who move ahead in the Canadian labour market. Second, the findings also suggest that through-migration on the part of the most skilled Canadian immigrants may be an important empirical phenomenon that policymakers should be concerned with understanding and mitigating.

1 Introduction

This paper assembles and presents new empirical evidence on immigrant earnings *levels*, earnings *inequality* and earnings *mobility* over immigrants' first ten post-landing years in Canada following their admission to Canada as landed immigrants or permanent residents. It investigates how earnings levels, earnings inequality and earnings mobility differ by admission category (i.e., among economic immigrants, family class immigrants, and refugees) and by gender. It also seeks to document the extent of sample attrition within landing cohort admission categories and the effects of such attrition on immigrants' earnings outcomes. The project is based entirely on individual microdata from the IMDB, the longitudinal Immigrant Data Base of Citizenship and Immigrant Canada (CIC). This paper is the first from a major project the authors have undertaken; it focuses only on the single-year 1982 landing cohort and follows these immigrants over their post-landing 1982-1992 period.

The first part of our empirical analysis focuses on immigrant earnings *distributions* and earnings *inequality*. It investigates whether certain immigrant subgroups identified by observable entry characteristics such as gender and admission category are persistently over-represented in either the lower or upper tails of the aggregate immigrant earnings distribution. It also investigates how immigrant earnings distributions and inequality evolve over time as 1982 immigrants progress through their first post-landing decade in Canada. Evidence on these matters could help us to understand how the Chiswick (1978)-Borjas (1985, 1987) hypothesis concerning the relationship of *mean* immigrant earnings to years-since-landing can be extended to the entire *distribution* of immigrant earnings and to the evolution of the immigrant earnings distribution as years-since-landing increase.

The second part of our empirical analysis provides new evidence on immigrant earnings *mobility*, and is motivated by two sets of considerations. First, individual earnings mobility can be viewed as one dimension of opportunity for economic advancement. The social concern attached to any degree of cross-sectional earnings inequality depends

largely on whether that degree of inequality corresponds to high or low individual earnings mobility within the distribution. Is there a large amount of 'churning' within the immigrant earnings distribution in the sense that large numbers of immigrants pass through different regions of the distribution as they progress through their working lifetimes and integrate into the Canadian labour market? Or is there little individual mobility within the immigrant earnings distribution in the sense that the same immigrants remain in the lower, middle, and upper regions of the earnings distribution over time? (Shorrocks, 1978). Second, empirical evidence on the individual earnings mobility of successive immigrant cohorts and of immigrant subgroups can help us understand observed changes in inequality by suggesting possible factors that are causing these changes. Suppose, for example (Dickins, 2000) that later immigrant cohorts exhibit greater earnings inequality at any specific point in their post-landing period compared with earlier immigrant cohorts. Such an increase in earnings inequality may reflect greater *transitory* earnings fluctuations, in which case individuals would experience increased mobility within the immigrant earnings distribution. Alternatively, the rise in inequality may occur because of increased *permanent* earnings differences among individual immigrants, in which case we would expect unchanged or reduced earnings mobility within the immigrant earnings distribution.

The work in this paper has several major limitations and qualifications. Our project does not have data on *non-immigrants* comparable to that in the IMDB for immigrants. We therefore cannot directly compare the earnings distributions and earnings mobility of immigrants and non-immigrants in Canada. However, our ultimate objective in embarking on this research is to extend our work to the linked LAD-IMDB longitudinal data file currently being developed at CIC and Statistics Canada. Also, the empirical findings reported in this paper are limited in scope. All we can report at this stage of our research are empirical results for only one of the fifteen annual immigrant landing cohorts we intended to consider in subsequent work – namely the 1982 landing cohort. We nonetheless feel that these results are still interesting in the policy questions they raise, as the paper will attempt to demonstrate. For reasons of length and focus, this paper also does not examine differences in earnings inequality and earnings mobility by

observable characteristics such as age at time of landing, education at landing, and region of origin. These will be the topic of a subsequent paper.

The rest of the paper is organized as follows. Section 2 examines the evolution of 1982 immigrants' post-landing earnings *distributions* and earnings *inequality* over their first ten years post-landing years in Canada. Section 3 examines the earnings *mobility* of 1982 immigrants over their first post-landing decade of Canadian residence. In both these substantive sections, we outline the empirical methodology used and then examine the empirical results. The concluding section, Section 4, reviews the major findings of the paper and offers some policy observations suggested by these findings.

2 Evolution of Immigrants' Post-Landing Earnings Distributions and Earnings Inequality

2.1 Questions Addressed

This section of the paper examines the evolution of immigrants' post-landing earnings distributions and earnings inequality over their first post-landing decade in Canada. More specifically, it seeks to investigate not just the evolution of mean or median earnings of immigrants following their landing, but also whether the inequality or dispersion of immigrant earnings tends to increase, decrease, or remain fairly constant as years-since-landing increases. Changes in the detailed structure of immigrant earnings inequality will allow us to better identify which immigrant subgroups are faring relatively well or relatively poorly within the aggregate immigrant earnings distribution. That is, does the evolution of mean or median earnings of immigrants post arrival represent the experience of an increasing or decreasing proportion of immigrants in a given cohort? What fraction of immigrants are successfully getting ahead in the Canadian labour market and what proportion are failing to participate in such success or indeed even following behind? More generally, how do immigrant earnings distributions change over the first ten years after landing as newly arrived immigrants seek to adapt to the imperatives of making a living in Canada? How do post-landing patterns of distributional changes and earnings inequality differ between female and male immigrants? And are there differences in post-

landing earnings distributions and earnings inequality across immigrants in different admission categories? For example, do independent economic immigrants exhibit different patterns of post-landing earnings growth and inequality than family class immigrants or refugees, neither of whom is subject to skills assessment?

2.2 Empirical Methodology

In this section, we set out three aspects of the empirical methodology used to address the above questions: (1) the method of calculating distributional changes over time, (2) the definition and coding of variables used in the analysis, and (3) the assembly of the master file and the selection of the specific analysis sample from the IMDB database for the 1982 immigrant landing cohort.

2.2.1 Method of Calculating Distributional Change

For each annual immigrant landing cohort – e.g., the 1982 landing cohort – and for various immigrants subgroups in each landing cohort – e.g., independent economic immigrants, other economic immigrants, family class immigrants, and refugees – we summarize the aggregate real earnings distribution for each of the first ten post-landing years by computing a set of 13 real earnings percentiles:

p05 = the 5^{th} real earnings percentile
p10 = the 10^{th} real earnings percentile
p20 = the 20^{th} real earnings percentile
p25 = the 25^{th} real earnings percentile
p30 = the 30^{th} real earnings percentile
p40 = the 40^{th} real earnings percentile
p50 = the 50^{th} real earnings percentile or median earnings level
p60 = the 60^{th} real earnings percentile
p70 = the 70^{th} real earnings percentile
p75 = the 75^{th} real earnings percentile
p80 = the 80^{th} real earnings percentile

p90 = the 90th real earnings percentile

p95 = the 95th real earnings percentile.

The 25th percentile, for example, is that earnings level such that 25 percent of immigrants have earnings less than or equal to it and 75 percent have earnings that are higher.

Our analysis of immigrant earnings inequality relies primarily on selected *percentile earnings ratios* and on tracking changes in these ratios over immigrants' first ten post-landing years. Percentile earnings ratios measure —in very flexible fashion—the earnings differences between two different points of the earnings distribution. For example, the 90/10 percentile earnings ratio measures the relative distance between the upper and lower decile tails of the earnings distribution. Changes over time in the 90/10 percentile earnings ratio indicate how overall immigrant earnings inequality evolves as years since landing (YSL) increases. The 90/50 and 10/50 ratios indicate whether inequality has increased or decreased in the top and bottom halves of the earnings distribution. By tracking changes in such percentile ratios for both all immigrants in a given landing cohort and for various immigrant subgroups (defined by gender and admission category, for example), we hope to provide a reasonably complete depiction of (i) how immigrant earnings inequality *changes* over immigrants' first ten post-landing years in Canada, and (ii) how earnings inequality *differs* among immigrant subgroups, e.g., between male and female immigrants and among immigrants in different admission categories.

2.2.2 Definition and Coding of Variables

We use individual-level micro data from the IMDB data base for what ultimately will be fifteen annual landing cohorts for the landing years 1980 to 1994 inclusive. These are the landing cohorts for which the IMDB currently provides at least *ten* consecutive years of post-landing data. For each landing cohort, we assemble IMDB micro data on immigrants' landing characteristics' and on their annual earnings in the year of their landing in Canada and in each of the first ten calendar years that immediately follow their landing year. For example, for the 1982 landing cohort – for which results are reported in

this paper – our dataset contains person-year records for the years 1982 to 1992 inclusive. Upon completion of our entire project, we will have evidence for a total of 15 (unbalanced) panels of individual immigrants, each containing up to 11 annual person-year records for each immigrant.

The IMDB contains two broad categories of variables. One is the immigrants' landing characteristics obtained from landing documents. These characteristics are time-constant for each immigrant in the sense that they are fixed or unchanged throughout the post-landing period. Included among the landing characteristics for each immigrant are:

- admission category;
- gender;
- year of birth;
- age at time of landing;
- education at landing;
- marital status at landing;
- mother tongue (native language or language first learned);
- Canadian official language fluency (self-assessed);
- country of birth;
- country of last permanent residence; and
- intended destination province and locality at time of landing.

The second category of variables (obtained from personal income tax returns) include the immigrants' annual income and earnings, their current place of residence, and their current marital status; these variables are time-varying inasmuch as they can and do change for each immigrant after landing. The principal outcome variable of this study is the level of annual real wage and salary earnings from paid employment (reported on line 105 of the 1995 T1 General Income Tax Return) for each immigrant in each post-landing calendar year for which the immigrant filed a personal income tax return. We exclude self-employment income because of its very heterogeneous nature and because the IMDB reports only *net* self-employment income and this can be very problematic. To convert

nominal annual earnings measured in current dollars into *real* annual earnings, we deflate nominal earnings by the value of the annual All-Items Consumer Price Index (CPI) for that tax/calendar year, re-based to the year 2004, so that all earnings figures in this paper are expressed in terms of constant 2004 dollars.

An important variable in this study is an immigrant's admission category indicating the type of program or immigrant class under which the immigrant was landed. The IMDB classifies immigrants according to two-digit IMCAT codes such as 01 for Family Class, 16 for Live-in Caregiver, 09 for Skilled Worker Spouse and Dependent, 02 for Entrepreneur, and 12 for Government Assisted Refugee. For our work, we combine the detailed IMCAT codes into the following six one-digit admission category (ADMCAT) codes:

ADMCAT = 0	Other Immigrants
ADMCAT = 1	Independent Economic Immigrants
ADMCAT = 2	Other Economic Immigrants
ADMCAT = 3	Family Class Immigrants
ADMCAT = 4	Refugees
ADMCAT = 5	Business Class Immigrants.

Detailed definitions of these ADMCAT codes in terms of IMCAT codes are provided in appendix Table A1. Numbers of person-year records by IMCAT code and ADMCAT admission category in our Master File for the 1982 landing cohort are provided in appendix Table A2. The largest two admission (ADMCAT) categories are Family Class immigrants (160.7 thousand) and Independent Economic immigrants (131.5 thousand), and the smallest two are Other Economic immigrants (1.8 thousand) and Business Class immigrants (21.5 thousand).

2.2.3 Master File and Analysis Sample for the 1982 Landing Cohort

A Master File was assembled from the IMDB data base for the 1982 immigrant landing cohort; a similar master file will ultimately be assembled for each of the remaining 14 annual landing cohorts for the years 1980, 1981, and 1983 to 1994 inclusive. Each Master File record corresponds to an individual immigrant taxfiler in a particular tax/calendar year, and therefore has both a person identifier and a tax year identifier. Each cohort Master File is restricted to those immigrants in a given landing cohort who were 20-54 years of age at time of landing and who filed one or more personal income tax returns during the first ten post-landing tax years following the year of their landing in Canada. For each selected immigrant, a person-year record was included for a tax year if it contained no missing or invalid values for any of the following variables: landing year, person ID code, tax year, sex code, birth year, and age at landing. Multiple person-year records – two or more records with identical values of the person identifier and tax-year – were excluded from the cohort Master Files.

The entire empirical analysis for which results are reported in this paper was conducted on a subsample of the 1982 Master File that we call the ALL4 Analysis Sample. The ALL4 Analysis Sample for the 1982 landing cohort is restricted to immigrant earners in ADMCAT categories 1 (Independent Economic), 2 (Other Economic), 3 (Family Class) and 4 (Refugees), and includes only person-year records for which annual real wage and salary earnings were greater than or equal to the minimum annual earnings cutoff of $1,000 in constant 2004 dollars.

The numbers of person-year records that were excluded by specific exclusion criteria from the 1982 landing cohort Master File in the course of selecting the corresponding ALL4 Analysis Sample are listed in the appendix Table A3. Of the 487,456 person-year records in the 1982 Master File, a total of 115,704, or 23.74 percent, were excluded by the various criteria. The resulting ALL4 Analysis Sample for the 1982 landing cohort therefore contains 371,752 person-year records, or 76.26 percent of all the person-year records in the 1982 Master File.

2.3 Empirical Results

2.3.1 Post-Landing Adjustment of Earnings Levels

The first empirical results we examine are those for mean and median (real) annual earnings for the 1982 landing cohort for the tax years 1982-1992 inclusive. Table 1 is for all immigrant earners, Table 2 for male immigrant earners, and Table 3 for female immigrant earners. Since immigrants in the 1982 landing cohort arrived at different times during the year 1982, the first post-landing decade of full-year Canadian residence consists of the years 1983-1992 inclusive, which correspond to years-since-landing (YSL) values of 1 to 10. The bottom row of each table shows the percentage change in (real) earnings over the 1983-1992 period, and the right-hand column of each table shows the corresponding mean (real) annual earnings of all earners in Canada taken from Statistics Canada's CANSIM data base (and converted to 2004 constant dollars).

The first notable finding in Tables 1-3 is that the real annual earnings of 1982 immigrants, both males and females, increased substantially over their first ten post-landing years in Canada: from 1983 to 1992, mean annual earnings increased by 55.7 percent for male immigrants, by 72.4 percent for female immigrants, and by 55.9 percent for all 1982 immigrants, males and females combined. The increases in *median* annual earnings of 1982 immigrants were even larger than those for *mean* annual earnings, and were almost identical for male and female immigrants: from 1983 to 1992 (YSL = 1 to 10), median annual earnings increased by 90.8 percent for male immigrants, by 89.4 percent for female immigrants, and by 86.5 percent for all 1982 immigrants. A second finding indicated by Tables 1-3 is that mean annual earnings initially were substantially lower for 1982 immigrants than for all Canadian wage and salary earners, but by the end of immigrants' first post-landing decade in Canada were appreciably higher for 1982 immigrants than for all Canadian earners. In the first post-landing year 1983, the mean earnings of male and female immigrants were $29,045 and $15,475, respectively, compared with $36,607 and $20,065 for all Canadian male and female earners; but by the tenth post-landing year 1992, the mean earnings of male immigrants equaled $45,212

compared with $36,313 for all male earners, and the mean earnings of female immigrants equaled $26,694 compared with $22,512 for all female earners.

One probable reason why 1982 immigrants experienced much higher rates of earnings growth over the 1983-1992 period than did all Canadian wage and salary earners is that immigrants, on average, are relatively young at time of landing – 29.3 years of age according to Beach et. al. (2008) – and the earnings of younger workers generally rise faster than those of older workers, thus imparting the typical concavity to life-cycle age-earnings profiles. A second reason for these earnings growth differences is that the final columns in Tables 1-3 are derived from cross-sectional data that do not refer to exactly the same population of workers from year to year, whereas the IMDB estimates of immigrant earnings growth reported in this paper are derived from longitudinal data and therefore follow essentially the same panel of workers through time. To address these two points, we also compare our estimates of immigrant mean earnings to those of Beach and Finnie (2004), who use income tax data on annual earnings from the longitudinal LAD database for Canada. Beach and Finnie (2004) report estimates of mean annual real earnings for the 1976 worker entry cohort in Canada, which will be similar in terms of average age to the 1982 immigrant landing cohort. Their estimates indicate that the 1976 entry cohort of all male earners in Canada experienced a 19.1 percent increase in real earnings over the 1983-1992 period, compared with a 55.7 percent increase for 1982 male immigrants over the same period. Similarly, the 1976 entry cohort of all female earners in Canada experienced a 23.3 percent increase in mean annual earnings over the 1983-1992 period, compared with a 72.4 percent increase for females in the 1982 immigrant landing cohort. So it is still true – even controlling for age, sex and entry cohort – that the real earnings of immigrants in the 1982 landing cohort on average rose much faster between 1983 and 1992 than did the real earnings of all paid workers in Canada. This finding strongly suggests that, as immigrants adapt to their new economic environment and become integrated into the Canadian labour market, immigrant earnings increase with years-since-landing (YSL) at rates well in excess of the rates at which the earnings of all Canadian workers increase with age.

In terms of gender earnings differences, the (unadjusted) female-male mean earnings gap for the 1982 immigrant landing cohort was initially wider than that for either all Canadian earners or all Canadian earners of a similar average age, but narrowed over the ensuing ten years at a slightly faster rate than did the gap for all earners of the same average age. From 1983 to 1992, the female/male mean earnings ratio increased from 53.3 percent to 59.0 percent for the 1982 immigrant landing cohort, but only from 58.7 percent to 60.7 percent for all earners of a similar average age in the 1976 worker entry cohort (Beach and Finnie, 2004). For all Canadian earners as a whole (last column of Tables 2 and 3), the female/male mean earnings ratio rose from 54.8 percent in 1983 to 62.0 percent in 1992, an increase that is very similar to that for the 1982 immigrant cohort.

Tables 4-6 present mean and median real earnings levels (in 2004 dollars) by tax year and gender for 1982 immigrants in the four admission categories. Across admission categories, mean/median earnings were initially highest for independent economic immigrants and lowest for refugees. In 1983, the first full calendar year after landing for the 1982 landing cohort, *mean* earnings for male and female immigrants combined were $38,069 for independent economic immigrants, $17,274 for family class immigrants, $16,881 for other economic immigrants, and $15,277 for refugees. For both males and females in the 1982 landing cohort, the rank ordering of the four immigrant admission categories was identical for both *mean* and *median* annual earnings in post-landing year 1 (1983): independent economic immigrants had by far the highest year 1 earnings, followed in descending order by other economic immigrants, family class immigrants, and refugees.

The higher initial earnings levels of independent economic immigrants relative to the other admission categories come as no surprise. After all, independent economic immigrants are all principal applicants who were assessed under the point system for their skill levels and their functional fluency in English or French; moreover, some had pre-arranged jobs waiting for them when they arrived. In contrast, refugees are admitted on humanitarian grounds; they are not skill evaluated or assessed for their labour market adaptability, may have little or no knowledge of the official languages of Canada, and in

many cases are likely poorly prepared initially to make their way in an economy and society that may be very different from those in the countries they left. Family class immigrants are admitted solely on the basis of their kinship with permanent residents of Canada, and thus may also have more limited official language and labour market skills than independent economic immigrants. Finally, the "other economic" admission category (ADMCAT = 2) is more heterogeneous in composition than the other three admission categories, something of a mixed bag: it includes the spouses and dependents of principal applicants, principal applicants admitted from within Canada (e.g., a foreign graduate student who gains landed immigrant status upon completion of his/her graduate degree program), and principal applicants admitted under a variety of "special programs". In the remainder of this paper, most comparisons of post-landing earnings outcomes across admission categories will be confined to the "cleaner" archetypal admission categories, namely independent economic immigrants (ADMCAT = 1), family class immigrants (ADMCAT = 3), and refugees (ADMCAT = 4).

Over the 1982 landing cohort's first post-landing decade from 1983 to 1992, the rate of real *mean* earnings growth was highest among refugees (121 percent for males, 150 percent for females), lower for family class immigrants (79 percent for males, 71 percent for females), and lowest among independent economic immigrants (36 percent for males, 43 percent for females). Real earnings growth over the 1983-1992 period was even higher for *median* earnings than for *mean* earnings. Among 1982 male immigrants, *median* annual earnings increased between 1983 and 1992 by 150 percent for refugees, by 92 percent for family class immigrants, and by 52 percent for independent economic immigrants. Among 1982 female immigrants, the increase in median earnings between post-landing years 1 and 10 was 176 percent for refugees, 77 percent for family class immigrants, and 67 percent for independent economic immigrants. Note too that both mean and median earnings increases over the first post-landing decade of the 1982 cohort were higher for female immigrants than for male immigrants in three of the four admission categories: independent economic, refugees, and other economic. Only in the family class category did earnings growth for males exceed that for females. This could

reflect home-country cultural norms whereby men spend more time than women in the labour market earning a living for the family group.

By the end of their first post-landing decade in Canada, independent economic immigrants in the 1982 landing cohort – men and women – still had the highest mean/median earnings levels: mean (median) annual earnings in 1992 for independent economic immigrants were $51,809 ($46,172) for males and females combined, $56,694 ($51,325) for male immigrants, and $35,071 ($30,998) for female immigrants. But by virtue of their high earnings growth rates, refugees rose from fourth to second highest among the four admission categories in terms of their mean and median earnings levels. In 1992, male refugees had mean (median) annual earnings of $38,744 ($37,140), higher than the mean (median) earnings of both family class males and other economic male immigrants, whose mean (median) earnings in 1992 were very similar to one another – $36,388 ($33,203) for family class male immigrants and $36,752 ($32,919) for other economic male immigrants. By 1992, female refugees had mean (median) annual earnings of $26,549 ($25,159), other economic females had mean (median) annual earnings of $26,377 ($23,462), and female family class immigrants had mean (median) annual earnings of $23,838 ($19,991). In summary, refugees in the 1982 landing cohort began their first post-landing decade in Canada with mean/median earnings that were well below those of family class immigrants, but ended the decade with mean/median earnings that were appreciably above those of family class immigrants. Female family class immigrants experienced the lowest earnings growth rate over their first post-landing decade and ended that decade with the lowest mean/median earnings levels among the four admission categories. Male family class immigrants exhibited the second lowest increase in real earnings between post-landing years 1 and 10: they ended their first post-landing decade with mean/median earnings levels approximately equal to those of males in the other economic admission category, but below the earnings levels of males in both the independent economic and refugee admission categories.

We only speculate as to the reasons why refugees in the 1982 landing cohort realized much larger relative increases in mean and median real earnings over their first post-

landing decade in Canada than did immigrants in the other three admission categories. It could be that refugees are better endowed than other immigrants with unobservable characteristics that are conducive to higher rates of post-landing earnings growth. For example the act of leaving their countries of origin under duress may in itself reflect the greater presence in refugees of attitudes towards risk-taking and personal traits such as initiative and perseverance that enhance their chances of economic advancement and successful integration in their new country of residence. The option of return migration to their countries of origin is presumably far less feasible for refugees than for immigrants in other admission categories, and this may increase refugees' commitment to making their way in the country that took them in. Moreover, to gain refugee status in the first place, prospective immigrants presumably must provide convincing reasons for why they cannot return to their countries of origin, and those who succeed in doing so may be better endowed than other applicants for landed immigrant status with work-related abilities and attitudes to authority that enhance their integration into the economic and social life of their new home country. Finally, when newly landed refugees initially enter the paid labour force, they may obtain very few hours of work owing to initially poor language skills; but as their language fluency improves and they become better integrated in the Canadian labour market, refugees may increase their annual hours of work more than immigrants in other admission categories, resulting in correspondingly larger increases in annual earnings.

2.3.2 Post-Landing Changes in Earnings Inequality

This section presents, in Tables 7-16, our evidence on post-landing changes in earnings *inequality* among Canadian immigrants in the 1982 landing cohort. The first question we address is: How does earnings inequality among 1982 immigrants compare to that of all wage and salary earners in the Canadian workforce? A common summary measure of relative dispersion or inequality is the coefficient of variation (the standard deviation divided by the mean of a distribution). Table 7 (last column) shows that the coefficient of variation (CV) for 1982 immigrant males in 1992 was 1.1993 and that for 1982 immigrant females was 1.3398. Beach, Finnie and Gray (2003, Tables 2 and 3, pp. S49-

S50) report that the CV in 1992 was only 0.7563 for all male earners and 0.7401 for all female earners in Canada. Similar differences exist for 1982 as well. So, at least according to the CV summary measure of earnings inequality, 1982 immigrants appear to exhibit a considerably higher degree of earnings inequality than do workers as a whole in the Canadian labour market.

The next question addressed is: How did earnings inequality among the 1982 cohort of immigrants change over their first post-landing decade in Canada? Our evidence to date on this question is mixed. In terms of the CV summary measure of inequality (Table 7), immigrant earnings inequality rose quite markedly between 1983 and 1992 – from 0.9894 to 1.1993 for male immigrants, and from 1.1891 to 1.3398 for female immigrants, in the 1982 landing cohort. These changes in the CV of earnings for 1982 immigrants are directionally similar to those reported by Beach, Finnie and Gray (2003, Tables 2 and 3, pp. S49-S50) for Canadian wage and salary earners as a whole over the 1983-1992 period – from 0.6919 to 0.7563 for men, and from 0.7012 to 0.7401 for women – though in terms of their magnitude they are more than twice as large (in percentage terms) as the increases in CV for all earners.

An examination of detailed percentile earnings ratios, however, reveals a more complex set of distributional changes among 1982 immigrants over their first post-landing decade of Canadian residence. Tables 8-10 report a set of lower-tail percentile earnings ratios by tax year for the 1982 immigrant landing cohort. The 05/50 and 10/50 percentile earnings ratios decreased quite considerably over the 1983-1992 period for both male and female immigrants, while the 20/50 and 25/50 ratios increased slightly before decreasing to their 1983 starting values in the early 1990s. For example, the 10/50 ratio decreased between 1983 and 1992 from 0.291 to 0.244 for 1982 male immigrants (Table 9), and from 0.264 to 0.239 for 1982 female immigrants (Table 10). Thus, the lower tail (bottom decile) of both the immigrant male and immigrant female earnings distributions moved further away from their respective medians. Among all male earners in the Canadian labour market, the 10/50 percentile earnings ratio also declined between 1983 and 1992, from 0.229 to 0.219; but for all female earners the 10/50 ratio declined only very slightly, from

0.225 in 1983 to 0.224 in 1992 (Beach, Finnie and Gray (2003, Tables 1, 2 and 3, pp. S47, S49, and S50)). So again the changes in the lower tails of the immigrant earnings distributions are similar in direction to those for earners as a whole in the Canadian labour market, but are proportionally much larger in magnitude.

Tables 11-13 contain a corresponding set of upper-tail percentile earnings ratios for the 1982 immigrant landing cohort. For both male and female immigrants, all four upper-tail ratios fell over the post-landing decade from 1983 to 1992. For example, the 90/50 percentile earnings ratios decreased substantially during the 1980s – from 2.915 in 1983 to 2.007 in 1989 for male immigrants, and from 2.552 in 1983 to 2.132 in 1988 for female immigrants – before increasing somewhat during the early 1990s to 2.096 for males and to 2.235 for females in 1992. But despite the minor reversal in the late 1980s and early 1990s, the reductions in the 90/50 percentile earnings ratio between 1983 and 1992 were still considerable: 28.1 percent for males and 12.4 percent for females in the 1982 immigrant landing cohort. Over the first post-landing decade of the 1982 landing cohort, the upper tails (top quartile) of both the male and female immigrant earnings distributions moved steadily towards the middle (median) of their respective earnings distributions (except during the recession of the early 1990s). This movement towards the median of the upper tails of the earnings distributions of male and female immigrants stands in marked contrast to the changes that were occurring over the same period in the aggregate earnings distributions of all male and female earners in the Canadian labour market. For all male earners in Canada, the 90/50 percentile earnings ratio rose over this period from 1.842 in 1983 to 1.959 in 1992, while for all female earners the 90/50 ratio rose marginally from 2.128 in 1983 to 2.181 in 1992 (Beach, Finnie and Gray (2003, Tables 1, 2 and 3, pp. S47, S49, and S50)) as those in the upper regions of the aggregate male and female earnings distributions experienced more rapid earnings growth than did those in the middle regions. Our evidence thus indicates that the general pattern of changes that were occurring between 1983 and 1992 in the top end of the earnings distributions of male and female immigrants in the 1982 landing cohort was quite different from that which was occurring in the upper tails of the earnings distributions of all male and female workers in the Canadian labour market.

Tables 14-16 summarize the results of the movements in the lower and upper regions of the male and female immigrant earnings distributions; they report a set of upper-to-lower percentile earnings ratios by tax year for immigrants in the 1982 landing cohort over their first post-landing decade of Canadian residence. Generally speaking, the movement of the upper tails towards the median dominated the movement of the lower tails away from the median for both male and female immigrants, but especially for male immigrants. For both male and female immigrants, the 95/05, 90/10, 80/20, and 75/25 percentile earnings ratios all decreased over the 1983-1992 period, despite increasing somewhat during the early 1990s. For 1982 male immigrants, the 95/05, 90/10, 80/20, and 75/25 percentile earnings ratios all decreased substantially and monotonically from 1983 to 1989, but increased from 1989 to 1992 (Table 15). For 1982 female immigrants, in contrast, the decrease in these four percentile earnings ratios during the 1980s was neither as large nor as consistent as it was for male immigrants; but like their male counterparts, female immigrants in the 1982 landing cohort exhibited increases in all four upper-to-lower percentile earnings ratios from 1990 to 1992 (Table 16). Once again, these decreases in immigrant earnings inequality are opposite in direction to the changes in inequality that were occurring in the aggregate earnings distributions of workers as a whole in the Canadian labour market. Beach, Finnie and Gray (2003, Tables 1, 2 and 3, pp. S47, S49, and S50) report that between 1983 and 1992, the 90/10 percentile earnings ratio rose from 8.05 to 8.95 for all male wage and salary earners in Canada, and from 9.48 to 9.74 for all female earners in Canada.

These findings raise an obvious question: What could possibly be accounting for the markedly different trends, especially at the top end, in the earnings distributions of 1982 immigrants and of all Canadian wage and salary earners? Several possible explanations are available. One is that immigrants in the upper regions of the earnings distribution eventually encounter a “glass ceiling” beyond which it is increasingly difficult to advance. Another is that some immigrants who initially attain the upper end of the earnings distribution by working extremely hard and long to become economically established in Canada may then reduce their work effort or work hours, with the result

that their (real) earnings increase less rapidly than do the earnings of the median immigrant worker. A third consideration is that, as previously noted, our evidence on immigrant earnings distributions is based on longitudinal earnings data over time for essentially the same set of immigrant workers, whereas the cited figures from Beach, Finnie and Gray (2003) are based on annual cross-sectional earnings data for different samples of workers whose composition changes from year to year. In other words, our longitudinal earnings data for the 1982 immigrant landing cohort and the cross-sectional earnings data of Beach, Finnie and Gray (2003) for all Canadian workers are not conceptually strictly comparable. But since both databases are very large, the reported findings should be quite reliable. Because earnings differences across workers tend to increase with age over the life cycle, one might expect the longitudinal IMDB data to exhibit *greater* increases in inequality towards the upper end of the immigrant earnings distribution than what would be observed in successive cross sections. Moreover, since immigrant workers are likely to invest in on-the-job training at higher rates in the years immediately following their landing than do non-immigrant workers of similar ages, the relative increase in earnings inequality among immigrants a fortiori should be even greater than that observed in cross-sectional data over time.

A fourth possible explanation for the different trends in the earnings distributions of 1982 immigrants and of all Canadian wage and salary earners centers on sample attrition. The third column of Tables 8-16 reports the number of immigrant tax filers by year in our IMDB analysis sample for the 1982 landing cohort. These figures reveal a substantial reduction between the first and last post-landing years in the number of immigrants who reported annual earnings in excess of the minimum annual earnings cutoff of $1,000 (in 2004 dollars). The number of male immigrants in our sample decreased every year, from 22,520 in 1983 to 16,760 in 1992. Among female immigrants, the number reporting earnings initially rose from 14,560 in 1983 to 15,240 in 1986, but thereafter declined steadily to 13,415 in 1992. The degree of sample attrition is also proportionately much greater for immigrant men than for immigrant women: between 1983 and 1992, the number of male immigrants in our sample fell by 25.3 percent, whereas the number of female immigrants declined by only 7.9 percent. Overall, year-to-year attrition among

both male and female immigrants appears to have been greatest during the recession of the early 1990s.

A probable cause of the sample attrition we observe is emigration from Canada of recently landed immigrants. Such emigration could take the form of either return migration to the country of origin or onward migration to a third country. Now one would expect return migration to be concentrated largely in the lower portion of the immigrant earnings distribution since it would be immigrants who were not successful enough in Canada relative to what they were used to or could expect upon return to their homeland. However, onward migration to other destination countries – of which the United States is likely to be the leading such destination – is likely to occur among the most skilled immigrants to Canada whose skills offer opportunities for even higher earnings and standards of living in the U.S. or other developed countries than they enjoyed in Canada. Thus onward migration of some of the most skilled immigrants to Canada may well account for the relative decline of upper quartile earnings ratios among immigrants in Canada in the face of widening skill differentials at the upper end of the earnings distribution for workers as a whole in Canada. More generally, the changes in earnings inequality observed for 1982 immigrants are broadly consistent with possible sample attrition arising from onward migration to other destination countries among the more skilled immigrants to Canada.

Testing of the first two possible explanations above for the relative decline of the upper tail of the 1982 immigrant earnings distribution would be difficult with the IMDB data base because of its weak coding of occupation information and its lack of any data on hours worked. Another possible factor contributing to sample attrition among higher earners is movement of immigrants out of paid work and into self-employment. But this is unlikely to be a major contributor for several reasons. First, the incidence of self-employment increases with age and is quite uncommon among young workers; but – as previously noted – immigrants are relatively young at time of landing (on average still in their 20s). Second, the observed pattern of sample attrition shows that year-to-year reductions in sample size are considerably larger during the two recessionary periods of

our sample interval. Finally, the incidence of self-employment is generally much higher among men than women, but sample attrition – once it kicks in among immigrant women – occurs for both male and female immigrants in the 1982 landing cohort, especially over the 1989-1992 recessionary period.

If onward migration is the primary driver of these post-landing changes in immigrant earnings inequality, we would expect to observe this pattern most strongly for independent economic immigrants, less strongly for refugees, and least strongly for family class immigrants. We approach informal testing of this conjecture in two ways. The direct approach is based on the number of earners by admission category in Tables 17-19 in our analysis sample for the 1982 landing cohort. The bottom row of these tables reports the percentage change in number of sample observations between 1983 and 1992 by admission category. From Table 18, one can see that for immigrant men, the attrition rate is indeed highest among independent economic immigrants (-29.3%), followed by refugees (-25.4%) and other economic immigrants (-25.0%), and lowest for family class immigrants (-20.2%). For male independents, sample attrition is somewhat greater over the first five post-landing years, while for male refugees it is greater towards the end of the first post-landing decade. For immigrant women (Table 19), sample attrition is generally less severe than for immigrant men. But it is still the case for female immigrants that the sample attrition rate over the 1983-1992 period is proportionately highest for independent economic immigrants (-25.2%), followed by refugees (-10.2%) and family class immigrants (-6.3%), and lowest (+3.5%) for other economic immigrants. So for both male and female immigrants in the 1982 landing cohort, the ranking of the three major admission categories by percentage reduction in sample size over the 1983-1992 period is the same: independent economic immigrants had the highest sample attrition rate, followed in descending order by refugees and family class immigrants. These direct results are thus remarkably consistent with the hypothesis that sample attrition is largely the result of emigration through onward migration.

Our second approach to empirically assessing the onward migration hypothesis is indirect. An implication of this hypothesis is that the relative decline of the top earnings

percentiles would be greatest for independent economic immigrants, less for refugees, and least for family class immigrants. Table 20 reports the percentage changes by admission category between 1983 and 1992 in the 90/50 and 95/50 percentile earnings ratios of male and female immigrants in the 1982 landing cohort. Among 1982 male immigrants, independent economic immigrants and refugees exhibit the largest percentage decreases in the 90/50 and 95/50 percentile earnings ratios, followed by family class immigrants and other economic immigrants. Among 1982 female immigrants, independent economic immigrants exhibit the largest percentage decreases in the 90/50 and 95/50 earnings ratios, followed in descending order by refugees, family class immigrants, and other economic immigrants. In summary, for both male and female immigrants in the 1982 landing cohort, the rank ordering of admission categories by the size of their percentage reductions in the 90/50 and 95/50 percentile earnings ratios between 1983 and 1992 is also remarkably consistent with the ranking implied by the onward migration hypothesis.[1]

3 Earnings Mobility of Immigrants

3.1 Questions Addressed

This section of the study examines the *mobility* of the earnings of immigrants over their first decade in Canada, i.e., how the earnings of individual immigrants change year to year or over longer intervals within their first post-landing decade. More specifically, how much do immigrants' earnings actually change over this period? Does short-run (year-to-year) individual earnings mobility tend to increase or decrease over the first ten post-landing years as newly landed immigrants become integrated into the Canadian labour market? Again, examining detailed patterns of immigrant earnings mobility will allow us to better identify which groups within the immigrant earnings distribution are

[1] The analysis of this section of the paper could perhaps usefully be replicated for a balanced panel of 1982 immigrants who were continuously present in the sample for all ten years of the first post-landing decade. But such a balanced panel would obviously exclude both those immigrants who permanently exited the panel and those who were intermittent tax filers during the 1982 cohort's first post-landing decade. It might be more interesting to undertake a separate investigation of the observable characteristics of these two immigrant subgroups in order to determine how they differed from those immigrants who were continuously present for all ten post-landing years.

getting ahead or failing to do so. We can then start to characterize the specific drivers of such earnings mobility patterns. Do patterns of earnings mobility differ between men and women immigrants and across different admission categories of immigrants? For example, do independent economic immigrants, family class immigrants and refugees exhibit similar or different patterns of earnings mobility over their first post-landing decade in Canada? Eventually as more output becomes available to this project, we will also wish to examine whether immigrants' earnings mobility has changed over time with more recent cohorts of arrivals, and how immigrants' earnings mobility differs across age groups, education groups, region of origin, and mother tongue of arriving immigrants.

3.2 Empirical Methodology

The general approach we take to measuring immigrant earnings mobility is the transition matrix approach. Our implementation of this approach consists of two main elements: the transition matrix itself, which provides disaggregated information on individuals' mobility within some aggregate earnings distribution over a specified interval of time; and a series of descriptive summary measures computed from the transition matrix that provide aggregated information on various dimensions of individual earnings mobility. This section of the paper outlines our implementation of both these elements of the transition matrix approach.

3.2.1 Transition Matrix Specification

A *transition matrix* is a two-dimensional array that shows how individual persons become redistributed among ordered earnings categories over some period of time. That is, it shows how persons initially in each of several ordered earnings categories move among these categories over some subsequent period of time. (Atkinson et. al., 1992).To illustrate, consider an earnings transition matrix that displays individual transitions among K earnings categories between an initial year t and a subsequent year t + s for some positive integer s. This transition matrix will have K rows and K columns. By convention, the earnings categories for the initial year t are arranged in ascending order (from top to bottom) down the left-hand side of the array, and the earnings categories for

subsequent year t + s are arranged in ascending order (from left to right) across the top of the array. The element in row i and column j of the transition matrix is the empirical probability that someone in earnings category i in year t will be in earnings category j in year t + s – it is the proportion (or percentage) of individuals in earnings category i in year t who are observed to be in earnings category j in year t + s. If the elements in each row sum to 1 (or 100 in the case of percentages), then the array is called a conditional transition matrix; this is what we use in this study.

For any transition matrix, an exhaustive set of K ordered earnings categories needs to be identified. By convention, there are two options available for partitioning the earnings distribution into ordered earnings categories. The first option is to define the earnings categories in terms of quantiles such as ten deciles or five quintiles. The second option is to define the earnings categories relative to the mean or median of the aggregate earnings distribution. We adapt a variant of the latter option used by Beach and Finnie (2004) and Beach (2006). Specifically, we define six ordered earnings categories in relation to the median level of real annual earnings in each post-landing year for all immigrants (or some subset of immigrants) in our analysis sample:

1. less than 25% of the median (labelled as “Very Low” or VL);
2. 25-50% of the median (labelled as “Low” or LO);
3. 50-100% of the median (labelled as “Low Middle” or LM);
4. 100-150% of the median (labelled as “High Middle” or HM);
5. 150-200% of the median (labelled as “High” or HI); and
6. greater than 200% of the median (labelled as “Very High” or VH).

The length of the time interval (s) over which earnings transitions are measured also needs to be identified. Since mobility tends to increase as the length of the time interval s increases, we construct not only one-year transition matrices (for which s = 1), but also four-year (s = 4) and nine-year (s = 9) transition matrices for each landing cohort of immigrants. To illustrate, we estimate for the 1982 landing cohort:

- three one-year transition matrices for post-landing years 1-2 (1983-1984), 5–6 (1987-1988), and 9-10 (1991-1992);
- two four-year transition matrices for post-landing years 1-5 (1983-1987) and 6-10 (1988-1992);
- one nine-year transition matrix for post-landing years 1-10 (1983-1992).

3.2.2 Summary Mobility Measures

We employ several descriptive summary measures of individual earnings mobility that have been developed in the income distribution literature. They include the following:

1. The immobility ratio or average probability of staying in the same earnings category, defined as the percentage of individuals who remain in the same earnings category (i.e., who occupy the diagonal cells of the transition matrix for a group of earners);
2. The average mobility rate or average probability of moving, defined as the percentage of all individuals who transit from one earnings category to another (i.e., who occupy the off-diagonal cells of the transition matrix for a group of earners);
3. The average probability of moving *up* one or more earnings categories;
4. The average probability of moving *down* one or more earnings categories; and
5. The Prais (1955) mobility index.

The Prais mobility index is one of the most widely used scalar measures of mobility. It can be computed following Beach (2006, p.115) as

$$M = \frac{K - tr(P)}{K - 1}$$

where K denotes the number of earnings categories (rows and columns) of the transition matrix P and tr(P) denotes the trace of P (i.e., the sum of the empirical probabilities on the principal diagonal of P). Shorrocks (1978) has shown that the Prais mobility index M exhibits several desirable properties. One of these is that $0 \leq M \leq 1$, where: M = 0 corresponds to complete immobility, in which case P is an identity matrix so that tr(P) =

K; and M = 1 corresponds to perfect mobility, in which case all K rows of P contain exactly the same vector of empirical probabilities and tr(P) = 1.

To account for the magnitude of movements across earnings categories within the earnings distribution, one can also compute from the transition matrix for some group of earners the average absolute jump (either up or down), the average upward jump, and the average downward jump, all of which are measured in terms of earnings categories.

3.3 Empirical Results

3.3.1 The Shape of the Immigrant Earnings Distribution

Tables 21-23 show the percentage of immigrants in each of the six earnings categories, from Very Low (VL) to Very High (VH), for each year in the first decade following the 1982 immigrant cohort's landing in Canada. The percentages in each row sum to 100, as indicated in the right-hand column. It is interesting to compare the percentage distribution of immigrants across the six median-relative earnings categories of the aggregate immigrant earnings distribution with the corresponding distributional figures in Table 24 for all earners as a whole in the Canadian labour market over the period 1983-1992 (from Beach and Finnie, 2000, Table 1).[2] In general, one notes that the shape of the immigrant earnings distribution is somewhat different from that for earners as a whole in the Canadian labour market, and its pattern of change over the first 10 post-landing years is quite different. For men and women combined, the aggregate immigrant earnings distribution has more workers in the VH and LM categories and fewer in the VL and LO

[2] One should exercise caution in comparing Tables 21-23 for immigrants in the 1982 landing cohort with Table 24 for all wage and salary earners in Canada. First, there are life-cycle differences: Tables 21-23 refer to workers who are relatively young on average, whereas Table 24 refers to workers of all ages. Since individual earnings tend to fan out with age, one would expect to observe larger proportions of workers in the top and bottom regions of the aggregate earnings distributions in Table 24 than in the top and bottom regions of the immigrant earnings distributions in Tables 21-23. Second, there are differences in the type of data on which the tables are based: Tables 21-23 are assembled from panel data on essentially the same immigrant workers through time, whereas Table 24 is compiled from two cross sections of individual data (for the years 1983 and 1992) where the sampled populations are not the same in the two reported years. The earnings distributions in Table 24 therefore reflect the effects of both new labour force entrants and retirements of older labour force participants, and these likely raise the proportions of workers in the lower regions of the aggregate earnings distribution and have mixed impacts on the proportions of workers in the upper regions.

categories than does the earnings distribution of all Canadian earners as a whole. More marked differences, however, show up when men and women are examined separately. In the case of men, the aggregate immigrant earnings distribution has higher proportions of males in the middle regions (LM and HM) of the distribution and far lower proportions in the upper regions (HI and VH) of the distribution than has the earnings distribution of all earners in Canada. In the case of women, the immigrant earnings distribution has far lower proportions of females in the lower half of the distribution (VL, LO, and LM) and higher proportions in the upper half of the distribution (HM, HI, and VH) than has the earnings distribution of all earners in Canada. In 1992, for example, the proportion of immigrant men in the top (VH) earnings category of the aggregate immigrant earnings distribution was 12.1 percent (compared to 22.1 percent among all Canadian males), while the proportion of immigrant women in this top category was 13.2 percent (compared to only 6.5 percent among all female earners). Male immigrants are essentially not doing nearly as well at the top end of the earnings distribution compared to male earners as a whole, whereas female immigrants are doing far better at the upper end of the earnings distribution relative to female earners as a whole.

The pattern of distributional change over time has also been quite different between immigrants and earners as a whole over this period. For both male and female immigrants, the proportions of workers in the upper-middle regions (HM and HI) and at the very bottom (VL) increased, while the proportions in the top region (VH) decreased dramatically, particularly for male immigrants. Over the 1983-1992 period, the proportion of male earners as a whole in the HM and HI earnings categories declined from 40.9 to 37.7 percent (Table 24), while that for male immigrants rose from 28.2 to 37.9 percent as a considerable number of immigrant men succeeded in moving up in the immigrant earnings distribution over their first post-landing decade. However, while the proportion of workers in the labour market as a whole in the top earnings category (VH) rose over this period by 0.8 percentage points for men and by 3.0 percentage points for women, the corresponding proportions in the immigrant earnings distribution fell by 3.2 percentage points for female immigrants and by 9.7 percentage points for male immigrants. Again, this dramatic decrease in the proportions of immigrant workers in the

top earnings category of the immigrant earnings distribution points to a potentially major concern that many of the most skilled immigrants to Canada may not be staying here but instead moving onward to other destination countries in which they perceive market opportunities to be greater. Clearly this is an issue that warrants further investigation into just who such immigrants are.

3.3.2 Four-Year Transition Matrices and Earnings Mobility

We now turn to the actual earnings mobility of immigrants in the 1982 landing cohort. One-year changes in earnings can incorporate a good deal of short-run random variation, so instead we focus initially on four-year changes in earnings. Accordingly, Tables 25-27 present earnings transition matrices for the initial 4-year period (1983-1987) following 1982 immigrants' landing in Canada. Below each transition matrix is the set of summary mobility measures discussed above in Section 3.2.2. Elements on the principal diagonal of each matrix are the probabilities (expressed in percentage terms) of "staying," i.e., of not changing earnings categories between the initial and terminal years of the transition interval. One can see that the probability of staying in the same earnings category is lowest at the bottom end of the immigrant earnings distribution and (except for women) highest at the top end. There is also a relatively high probability of staying in the LM earnings category over the 1-to-5-year transition interval; indeed for women the LM earnings category has the highest probability of staying over the initial 4-year transition period. Probabilities of changing categories are generally lower the further apart are any two earnings categories. The probabilities of moving up one or more categories are given by the figures above the principal diagonal; the probabilities of moving down the distribution are given by figures below the principal diagonal.

How does 4-year immigrant earnings mobility for post-landing years 1 to 5 compare with that of earners as a whole in the Canadian labour market? Appendix Table A4 presents 8-year earnings transition matrices for all Canadian workers, immigrants and non-immigrants, over the closely aligned period 1982-1990 from Beach (2006). In general, the initial 4-year transition matrices for the 1982 immigrant landing cohort exhibit more

earnings mobility than do the 8-year transition matrices for all earners in Canada over a similar period.

For example, the 8-year Prais mobility index for 1982-1990 is 0.776 for all male earners and 0.718 for all female earners in Canada (Table A4), while the 4-year Prais mobility index for post-landing years 1 to 5 (1983-1987) is 0.835 for immigrant men and 0.865 for immigrant women in the 1982 landing cohort (Tables 26 and 27). At least over their initial 4-year period following their landing in Canada, 1982 immigrants, both men and women, exhibit high degrees of individual earnings mobility within the aggregate immigrant earnings distribution – certainly higher than do workers as a whole. Indeed, over the upper half of the earnings distribution (HM, HI, and VH), the probability of staying is much lower for both male and female immigrants than for all male and female earners in the Canadian labour market.

The degree of earnings mobility among 1982 immigrants between post-landing years 1 to 5 is higher for women than for men – as shown in the above-cited Prais statistics – and this is opposite to the evidence for all workers in the Canadian labour market. Also the probability of moving down the earnings distribution is much higher for female than for male immigrants. Among the 1982 landing cohort, the average probability of moving up between post-landing years 1 to 5 (1983-1987) is 39.8 percent for men versus 27.6 percent for women, while the average probability of moving down is 29.7 percent for men versus 44.5 percent for women; hence, the average net probability of moving up is +10.1 percent for male immigrants compared with -16.9 percent for female immigrants. So while many female immigrant earners in the 1982 landing cohort are initially well positioned within the aggregate immigrant earnings distribution (as evidenced by their relatively high frequency in the VH earnings category), on average many experience relative earnings declines over their initial 4-year period in Canada. This may reflect their initially working long hours in the Canadian labour market in an effort to get their families better established – particularly as their husbands may be investing in language training or other types of job training – and then reducing their hours or work once their husbands become employed in more permanent fulltime jobs.

According to the Chiswick (1978) hypothesis, immigrant earnings growth is likely to be higher during immigrants' initial years in the host country and then decrease as years-since-landing (YSL) increases. The implication of this hypothesis for immigrant earnings mobility can be investigated by comparing the 1-to-5-year transition matrices for 1983-1987 in Tables 25-27 with the 6-to-10-year transition matrices for 1988-1992 in Tables 28-30 for the 1982 immigrant landing cohort. It is evident that the 6-to-10-year transition matrices exhibit lower earnings mobility than do the 1-to-5-year transition matrices for the initial 4-year period 1983-1987. For immigrant men and women combined (Tables 25 and 28), the Prais mobility index declines from 0.819 for post-landing years 1 to 5 to 0.658 for post-landing years 6 to 10, the probability of staying in their initial earnings category rises from 31.8 percent to 45.2 percent, the probability of moving up one or more earnings categories declines from 34.3 percent to 30.8 percent, and the probability of moving down one or more earnings categories falls from 33.9 percent to 24.0 percent.

Comparing Tables 26 and 27 with Tables 29 and 30, it is apparent that 4-year earnings mobility declines as years-since-landing increases for both immigrant men and immigrant women, but that the reduction in earnings mobility is greater for female immigrants. Between post-landing years 1 to 5 and post-landing years 6 to 10, the Prais mobility index for 1982 male immigrants declined by 18 percent from 0.835 to 0.683, whereas for 1982 female immigrants it fell by 26 percent from 0.865 to 0.637. In other words, although 1-to-5-year earnings mobility was somewhat higher for female immigrants than for male immigrants, 6-to-10-year earnings mobility was lower for females than for males. More specifically, the probability of moving down the aggregate immigrant earnings distribution declines substantially for women and becomes similar to that of men. Between post-landing years 1 to 5 and 6 to 10, female immigrants' probability of staying in their initial earnings category increased appreciably from 27.9 percent to 46.9 percent; their probability of moving up rose slightly from 27.6 percent to 29.7 percent; their probability of moving down declined markedly from 44.5 percent to 23.4 percent, and their net probability of moving up increased from -16.9 percent to +6.31 percent. By the later 4-year transition period, the corresponding summary statistics for men are not

much different from those for women: over the 6-to-10-year transition interval, male immigrants' probability of staying in their initial earnings category is 43.1 percent (up from 30.4 percent over the 1-to-5-year transition period) , their probability of moving up is 33.1 percent (down from 39.8 percent), their probability of moving down is 23.8 percent (down from 29.8 percent), and their net probability of moving up is 9.2 percent (down slightly from 10.1 percent).

3.3.3 Other Transition Matrices and Earnings Mobility

Three sets of one-year transition matrices for the 1982 immigrant landing cohort are presented in Appendix Tables A5-A13. The first set consists of transitions matrices between post-landing years 1 and 2 (i.e., 1983-1984), the second set of transitions matrices between post-landing years 5 and 6 (i.e., 1987-1988), and the third set of transitions matrices between post-landing years 9 and 10 (i.e., 1991-1992). In the first pair of years 1983-1984, the Canadian economy was moving out of a short but serious recession; in the second pair of years 1987-1988, the economy was strongly expansionary; and in the third pair of years 1991-1992, the economy was in recession again. The three sets of transition matrices very likely reflect period effects arising from the prevailing economic conditions as well as immigrant assimilation effects associated with increases in the number of years since landing.

As with the results in the previous section, the degree of immigrants' earnings mobility declines as years-since-landing increases. For men and women combined, the Prais mobility index was 0.677 between years 1 and 2, 0.524 between years 5 and 6, and 0.451 between years 9 and 10. The rate of decline also falls – it's higher in the early years after landing and falls off at a shower rate after that. Not surprisingly, the degree of earnings mobility is lower for the one-year transition matrices than for the 4-year transition matrices of the previous section.

Another way of viewing the decline in earnings mobility as YSL increases is in terms of the probabilities of moving up or down one or more earnings categories; these are

summarized in Table 31. For both men and women, the probabilities of moving up and moving down all attenuate as YSL increases. And again one can see the marked decline in the probability of moving down among female immigrants, so that by the end of the decade after landing it is essentially the same as for men.

Appendix Table A14 contains one-year earnings transition matrices for 1991-1992 for all men and all women in the Canadian labour market (from Beach, 2006). The summary degree of earnings mobility for immigrants is only very slightly higher than for workers as a whole – Prais mobility index values for men and women immigrants of 0.489 and 0.429 compared to those for men and women as a whole of 0.484 and 0.414, respectively. Among immigrants, there is more mobility at the lower end of the earnings distribution, less mobility around the middle of the distribution, and remarkably similar degree of mobility at the top end of the distribution compared workers as a whole in the Canadian labour market.

Finally, consider the 9-year transition matrices presented in Tables 32-34 for the 1982 landing cohort over the entire 1983-1992 period for post-landing years 1 to 10. For purposes of comparison, Appendix Table A15 reproduces (from Beach and Finnie (1998, Table 3, p. 9)) a pair of 12-year transition matrices for all male earners and for all female earners in the Canadian labour market over the period 1982-1994. Table 35 assembles the values of the Prais mobility index derived from the initial 4-year immigrant transition matrices for 1983-1987, the full 9-year immigrant transition matrices for 1983-1992, and the 12-year aggregate transition matrices for 1982-1994. The full 9-year transition matrices for both male and female immigrants in the 1982 landing cohort exhibit greater degrees of earnings mobility than do the corresponding 4-year transition matrices for post-landing years 1 to 5. But the 9-year immigrant transition matrices also indicate that male and female immigrants in the 1982 landing cohort exhibited greater mobility within the aggregate immigrant earnings distribution over their first post-landing decade in Canada than did all male and all female earners in Canada, immigrant and non-immigrant, within the aggregate earnings distribution over the 12-year transition period 1982-1994.

A second main result is that the probabilities of moving from lower earnings categories into the top (VH) earnings category are much lower for 1982 immigrants over their initial 9-year period of post-landing Canadian residence than for all Canadian workers as a whole over a similar 12-year period. The transition probabilities in the last column of the 9-year immigrant transition matrices in Tables 33 and 34 are appreciably lower than the corresponding probabilities in the last column of the 12-year transition matrices for all Canadian earners in Table A15, especially for females. Note too that the probabilities of staying in either of the top two earnings categories (VH and HI) were much lower for 1982 immigrants over the 9-year transition period 1982-1992 than for all Canadian earners over the 12-year transition period 1982-1994.

A final finding emerges from the penultimate column of the 9-year immigrant transition matrices in Tables 32-34 and the penultimate column of the 12-year aggregate transition matrices for all Canadian earners in Table A15. Compared with all wage and salary earners in Canada over the 1982-1994 period, immigrants in the 1982 landing cohort had lower probabilities of moving up from lower earnings categories to the HI earnings category and much higher probabilities of moving down from the top (VH) category to the HI earnings category over the 9-year transition period 1983-1992. Once again, these findings raise a real concern that immigrants are not advancing into the upper regions of the Canadian earnings distribution at the same rates as Canadian workers as a whole, and may therefore become either return migrants to their countries of origin or onward migrants to other advanced destination countries such as the United States.

4 Major Findings of the Paper, Implications and Further Work

This paper presents findings from the IMDB panel data base on how the earnings distribution and earnings mobility of Canadian immigrants in the 1982 landing cohort changed between 1983 and 1992, their first ten post-landing years in Canada. The objective is to investigate how the earnings distribution of 1982 immigrants evolves over this period as members of that landing cohort integrate into the Canadian labour market.

We examine earnings outcomes separately for men and women and for four immigrant admission categories – independent economic immigrants, family class immigrants, refugees, and other economic immigrants.

Several major empirical results have been obtained to date. First, the real earnings of immigrants in the 1982 landing cohort increased substantially for both male and female members of this immigrant cohort over their first ten post-landing years. Although they are initially well below the average earnings levels of all wage and salary earners in the Canadian labour market, the mean annual earnings of both male and female immigrants in the 1982 landing cohort rose much more rapidly over the ensuing decade, and ended the decade in 1992 substantially higher than the annual earnings of all male and female earners in Canada. Mean earnings growth over the 1983-1992 period is higher for female immigrants than for male immigrants, but median earnings growth over the decade is proportionately about equal for male and female immigrants in the 1982 landing cohort.

Second, across admission categories, mean/median earnings were initially highest for independent economic immigrants and lowest for refugees. But the subsequent rate of real earnings growth was highest among refugees and lowest among independent economic immigrants in the 1982 landing cohort. By the end of their first post-landing decade in Canada, independent economic immigrants – female and male – still had the highest mean/median earnings levels; refugees had the second highest mean/median earnings levels among males, and shared second and third ranks (with other economic immigrants) among females; and family class immigrants had the lowest mean/median earnings levels among females and approximately the same mean/median earnings levels as other economic immigrants among males.

Third, earnings inequality as measured by the coefficient of variation was initially higher among male and female immigrants in the 1982 landing cohort than it was among wage and salary earners as a whole in the Canadian labour market, and increased over the ensuing post-landing decade in a manner similar to the concomitant increase in earnings inequality among all earners in the labour market. At a disaggregated level, however,

different patterns of change in earnings inequality are evident. The lower tails of both male and female immigrant earnings distributions for the 1982 landing cohort moved further away from their respective medians over the 1983-1992 decade – similar to what was also occurring in the Canadian labour market as a whole over the same period. However, the upper tails of both the male and female immigrant earnings distributions moved steadily towards the middle of their respective distributions between 1983 and 1992 – in contrast to what was happening in the upper regions of the aggregate male and female earnings distributions of all paid workers in Canada. This convergence of the upper tails towards the medians of the earnings distributions of male and female immigrants in the 1982 landing cohort is broadly quite consistent with sample attrition associated with out-migration by higher-skilled, higher-earnings immigrants to other countries arising either from return migration to their countries of origin or onward migration to third countries such as the United States.

Fourth, two informal tests were performed of the hypothesis that sample attrition is attributable to onward migration of higher-skilled immigrants to other destination countries, and both yielded evidence strongly consistent with the hypothesis. Sample attrition in our analysis sample for the 1982 landing cohort is substantial, especially among male immigrants: the total number of male/female earners in our analysis sample fell between post-landing years 1 and 10 (1983 and 1992) by 26 percent for male immigrants and by 8 percent for female immigrants. For both male and female immigrants, sample attrition was greatest for independent economic immigrants, followed in descending order by refugees and family class immigrants. For male immigrants in the independent economic category, sample attrition was greatest over the first five years after landing in Canada. Moreover, the rate of decline of upper earnings percentiles relative to the median was highest for both male and female immigrants in the independent economic and refugee admission categories. We think this suggestive evidence clearly warrants further investigation into the extent of, and reasons for, this worrying phenomenon.

Fifth, the post-landing earnings distributions of male and female immigrants in the 1982 landing cohort differ somewhat in shape from the aggregate earnings distributions of all male and female workers in the Canadian labour market, and their pattern of change over immigrants' first post-landing decade also differs from that of the aggregate male and female earnings distributions over the 1983-1992 period. Compared with the earnings distribution of all male earners in Canada, the 1982 male immigrant earnings distribution initially had higher proportions of earners in the middle regions, and far lower proportions in the upper regions, of the immigrant male earnings distribution. In contrast, the 1982 female immigrant earnings distribution initially had far lower proportions in the lower half, and much higher proportions in the upper regions, compared with the earnings distribution of all female earners in Canada. Over the 1982 landing cohort's first ten post-landing years in Canada, the proportions of both male and female immigrant workers in the upper-middle and very bottom regions of their respective earnings distributions increased with years since landing, while the proportions in the very top region decreased dramatically. This latter change is quite different from other evidence for aggregate male and female earnings distributions in Canada, and is also consistent with onward migration of some of the most skilled immigrants in the 1982 landing cohort over the first post-landing decade.

Sixth, 4-year transition matrices for the 1982 landing cohort's first five post-landing years (1983-1987) exhibit greater individual earnings mobility than do 8-year transition matrices over a similar period for all wage and salary earners in the Canadian labour market. In addition, the degree of earnings mobility was higher for female immigrants than for male immigrants – which is opposite to evidence for earners as a whole in Canada – and the probability of moving down one or more earnings categories was much higher for female than for male immigrants. Over the upper half of the immigrant earnings distribution, the probability of moving up one or more median-relative earnings categories was much higher for both male and female immigrants than it was for male and female earners as a whole in the Canadian labour market.

Seventh, the degree of individual earnings mobility among both male and female immigrants in the 1982 landing cohort declined with years since landing (YSL). Four-year transition matrices for the second half of the 1982 landing cohort's first post-landing decade (YSL = 6 to 10, 1988-1992) exhibit less earnings mobility than do the 4-year transition matrices for this cohort's first five post-landing years (YSL = 1 to 5, 1983-1987). The same pattern is observed in a series of one-year transition matrices for males and females in the 1982 immigrant landing cohort: one-year earnings mobility decreases from post-landing years 1 to 2 (1983-1984) to post-landing years 5 to 6 (1987-1988), and again from post-landing years 5 to 6 (1987-1988) to post-landing years 9-10 (1991-1992). For immigrant women, the probability of moving down the female immigrant earnings distribution to a lower earnings category also declined substantially as years-since-landing (YSL) increases, and by YSL = 9 to 10 it had become quite similar to the probability of downward mobility for male immigrants. Nine-year transition matrices for the 1982 landing cohort's complete first post-landing decade indicate that the probability of moving into the very top median-relative earnings category was much lower for both male immigrants and female immigrants than it was for all male and female earners in the Canadian labour market over a comparable time period, a finding that once again raises concerns about possible onward migration to third countries among some of Canada's most highly skilled immigrants.

The foregoing empirical findings suggest several policy implications. First, the Canadian point system under which independent economic immigrants are admitted appears to be generally effective in bringing in higher-skilled and hence higher-earnings workers who move ahead in the Canadian labour market. Second, policymakers should be aware of onward migration among the most skilled immigrants and take steps to discourage it, e.g., by better credential recognition procedures to facilitate more rapid integration into the Canadian labour market so that there is less advantage to moving elsewhere to realize the earnings and advancement opportunities their skills and training can gain them. Third, immigration procedures should do a better job of incorporating family and spouse "skill characteristics" into the point system criteria and helping spouses integrate into the Canadian labour market so that "other economic immigrants" can move ahead more

rapidly. The evidence is strongly consistent with family labour supply decisions of immigrants. Fourth, policy should perhaps be less wary about the adaptive capabilities of refugees. After an initial difficult period, refugee class immigrants on average adjust remarkably well to the Canadian labour market and move ahead quite rapidly.

This study raises a number of questions and suggests several directions for further inquiry with the IMDB data. The first issue refers to the sample attrition we observe for the 1982 immigrant landing cohort right across the earnings distribution, but especially at the upper end. Who are the immigrants who leave our analysis sample? What are their observable characteristics, and – to the extent possible with available Canadian data – why do they leave? What are the best ways of predicting return migrants (expected to be more likely towards the lower end of the immigrant earnings distribution) and onward migrants to third countries such as the Unites States (expected to be more frequent among more skilled immigrants at the upper end of the earnings distribution)? Second, which immigrants end up in the lower end of the earnings distribution (i.e., below the poverty line) and how long do they stay there? Again, what are the observable characteristics of immigrants and their households who end up in poverty?

Third, we plan to extend the current empirical analysis in several directions. Transition matrix mobility analysis by admission category would be interesting as it would provide a more detailed examination of mobility patterns of economic advancement or credential recognition/glass ceiling effects among independent economic immigrants, family class immigrants and refugees. We have also assembled our analysis samples to include variables on the education, age and region of origin of immigrants at time of landing. We therefore intend to investigate how post-landing patterns of distributional change and earnings mobility vary with these landing characteristics and change over time with years since landing (YSL). There remains a sizable menu of research questions to investigate on this set of issues alone.

Fourth, the present paper examines just one immigrant landing cohort – the landing cohort for 1982. But we intend to examine several landing cohorts between 1982 and

1994 and compare results among them. This will hopefully allow us to distinguish between immigrant cohort effects and years-since-landing (YSL) effects. One can then try to relate such cohort effects to a range of institutional and economic factors such as immigration policy changes over the observation period, immigrant inflow rates, and macroeconomic fluctuations, since the years 1980 to 1994 include both strongly expansionary and fairly severe recessionary periods. One might then move beyond largely descriptive analysis of immigrant outcomes to a more formal regression analysis framework to examine the partial or ceteris paribus effects on immigrant earnings distributions of the various factors identified above.

Finally, the current analysis is restricted solely to longitudinal micro data from the IMDB data base of landed immigrants and their post-arrival earnings outcomes. But this data base does not include non-immigrants. If one wants to analyze how well immigrants advance and integrate into the Canadian labour market *relative to non-immigrants* with similar observable characteristics, one obviously needs a data set that provides comparable information on both immigrants and non-immigrants. CIC and Statistics Canada have succeeded in linking the IMDB data base for immigrants with the Longitudinal Administrative Database (or LAD file) for all Canadian taxpayers. We ultimately wish to extend our empirical analysis to this linked data set so that we can examine how earnings distributions and earnings mobility differ between immigrants and non-immigrants, and how any differences are related to years-since-landing (for immigrants) and cohort effects (for both).

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PART 1: Immigrant Earnings Distributions and Earnings Inequality

Table 1: Sample Mean and Median Real Annual Earnings by Tax Year (YSL) of All Immigrant Earners in the ALL4 Analysis Sample for the 1982 Landing Cohort

Tax Year	YSL	Sample Nobs	Sample Mean	Sample Median	Mean, All Earners
1982	0	27,665	18,320.76	11,337.96	
1983	1	37,080	23,716.75	16,749.01	29,560
1984	2	37,065	26,583.43	20,316.25	29,364
1985	3	36,495	28,458.34	22,412.90	29,756
1986	4	35,820	29,974.35	24,392.56	30,343
1987	5	35,020	31,809.98	26,257.86	30,539
1988	6	34,645	33,953.73	28,329.51	31,224
1989	7	33,885	35,505.32	30,062.02	31,517
1990	8	32,660	35,944.18	30,576.92	30,636
1991	9	31,250	35,698.57	30,182.28	30,049
1992	10	30,170	36,979.64	31,230.30	30,049
% change 1983-1992			55.9%	86.5%	1.7%

Notes: The mean earnings for all earners in the last column are taken from CANSIM series V25654672, with CPI deflator converted from 2005 to 2004 constant dollars.

Table 2: Sample Mean and Median Real Annual Earnings by Tax Year (YSL) of All Male Immigrant Earners in the ALL4 Analysis Sample for the 1982 Landing Cohort

Tax Year	YSL	Sample Nobs	Sample Mean	Sample Median	Mean, All Males
1982	0	17,835	22,091.03	14,022.67	
1983	1	22,520	29,045.48	20,879.24	36,607
1984	2	22,030	32,905.28	26,124.60	36,020
1985	3	21,350	35,425.95	29,280.81	36,803
1986	4	20,580	37,463.73	32,103.03	37,292
1987	5	19,940	39,769.29	34,535.01	37,586
1988	6	19,590	42,593.69	37,290.99	38,565
1989	7	19,010	44,473.18	39,336.96	38,663
1990	8	18,310	44,411.85	39,516.56	37,782
1991	9	17,470	43,918.63	38,599.42	36,705
1992	10	16,755	45,211.65	39,842.00	36,313
% change 1983-1992			55.7%	90.8%	-0.8%

Notes: The mean earnings for all male earners in the last column are taken from CANSIM series V25655152, with CPI deflator converted from 2005 to 2004 constant dollars.

Table 3: Sample Mean and Median Real Annual Earnings by Tax Year (YSL) of All Female Immigrant Earners in the ALL4 Analysis Sample for the 1982 Landing Cohort

Tax Year	YSL	Sample Nobs	Sample Mean	Sample Median	Mean, All Females
1982	0	9,835	11,479.81	8,169.55	
1983	1	14,565	15,475.00	12,299.62	20,065
1984	2	15,030	17,319.32	14,647.02	20,555
1985	3	15,140	18,634.12	15,926.27	20,653
1986	4	15,240	19,860.73	17,234.09	21,338
1987	5	15,075	21,279.59	18,543.32	21,631
1988	6	15,040	22,696.86	20,020.42	22,023
1989	7	14,860	24,036.14	21,212.67	22,806
1990	8	14,345	25,129.04	22,053.95	22,023
1991	9	13,775	25,271.93	22,251.53	22,023
1992	10	13,410	26,694.07	23,290.18	22,512
% change 1983-1992			72.5%	89.4%	12.2%

Notes: The mean earnings for all female earners in the last column are taken from CANSIM series V25655632, with CPI deflator converted from 2005 to 2004 constant dollars.

Table 4: Mean and Median Real Annual Earnings (in 2004 Dollars) by Tax Year (YSL) and Admission Category, All Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Adm. Cat. 1 Independent Economic	Adm. Cat. 2 Other Economic	Adm. Cat. 3 Family Class	Adm. Cat. 4 Refugee Class	Total, All Admission Categories
			Mean Real Annual Earnings (2004 Dollars)			
1982	0	$27,556.85	$13,205.93	$13,807.45	$8,326.95	$18,320.76
1983	1	38,068.96	16,880.98	17,274.23	15,277.03	23,716.75
1984	2	40,782.04	19,053.98	19,771.08	20,679.07	26,583.43
1985	3	42,765.60	20,719.96	21,375.85	23,984.18	28,458.34
1986	4	43,930.26	22,098.41	23,002.91	26,764.01	29,974.35
1987	5	46,090.96	23,768.28	24,771.86	29,043.35	31,809.98
1988	6	48,489.20	25,960.03	26,692.98	31,529.45	33,953.73
1989	7	50,505.51	26,670.93	28,374.44	33,113.25	35,505.32
1990	8	51,063.20	27,267.70	28,858.76	33,282.39	35,944.18
1991	9	50,443.00	27,672.37	28,655.84	32,910.35	35,698.57
1992	10	51,809.16	28,789.40	29,918.77	34,195.46	36,979.64
% change 1983-1992		36.09%	70.54%	73.20%	123.84%	55.92%
			Median Real Annual Earnings (2004 Dollars)			
1982	0	$18,199.51	$10,100.56	$9,782.86	$4,870.44	$11,337.96
1983	1	29,265.02	14,509.44	14,272.32	12,788.29	16,749.01
1984	2	33,248.08	16,319.02	16,780.44	17,937.44	20,316.25
1985	3	36,577.34	17,738.77	18,352.63	21,097.97	22,412.90
1986	4	38,518.05	19,104.67	19,824.99	24,318.38	24,392.56
1987	5	40,720.70	20,556.80	21,422.13	26,664.53	26,257.86
1988	6	43,403.42	22,402.95	23,017.87	29,178.05	28,329.51
1989	7	45,274.33	23,323.86	24,740.65	30,899.21	30,062.02
1990	8	45,765.23	24,206.73	24,845.75	31,184.56	30,576.92
1991	9	45,356.91	24,790.33	24,637.27	30,385.94	30,182.28
1992	10	46,171.67	25,581.57	25,597.77	31,781.03	31,230.30
% change 1983-1992		57.77%	76.31%	79.35%	148.52%	86.46%

Table 5: Mean and Median Real Annual Earnings (in 2004 Dollars) by Tax Year (YSL) and Admission Category, All Male Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Adm. Cat. 1 Independent Economic	Adm. Cat. 2 Other Economic	Adm. Cat. 3 Family Class	Adm. Cat. 4 Refugee Class	Total, All Admission Categories
			Mean Real Annual Earnings (2004 Dollars)			
1982	0	$30,264.42	$18,909.65	$15,845.22	$9,225.52	$22,091.03
1983	1	41,792.39	22,483.04	20,286.14	17,567.00	29,045.48
1984	2	45,081.64	26,519.42	23,729.44	23,795.63	32,905.28
1985	3	47,255.54	28,896.91	26,145.81	27,752.49	35,425.95
1986	4	48,480.35	30,999.05	28,568.33	31,017.49	37,463.73
1987	5	50,910.34	33,113.29	30,739.51	33,752.49	39,769.29
1988	6	53,793.24	37,343.77	33,402.48	36,523.96	42,593.69
1989	7	55,921.12	36,421.41	35,628.15	38,256.59	44,473.18
1990	8	55,993.72	35,563.98	35,522.09	38,224.52	44,411.85
1991	9	55,330.62	35,957.99	35,104.14	37,477.32	43,918.63
1992	10	56,694.16	36,751.91	36,387.98	38,744.00	45,211.65
% change 1983-1992		35.7%	63.5%	79.4%	120.5%	55.7%
			Median Real Annual Earnings (2004 Dollars)			
1982	0	$20,693.41	$15,673.18	$11,452.45	$5,461.00	$14,022.67
1983	1	33,688.26	19,351.93	17,297.18	14,854.75	20,879.24
1984	2	38,499.96	22,718.40	21,074.05	21,404.99	26,124.60
1985	3	42,353.76	24,760.36	23,265.16	25,272.87	29,280.81
1986	4	44,377.09	26,523.19	26,009.48	29,321.48	32,103.03
1987	5	46,890.34	28,746.81	28,205.60	32,334.24	34,535.01
1988	6	49,888.33	31,636.25	30,646.66	35,031.88	37,290.99
1989	7	51,670.89	32,328.61	32,752.80	37,007.38	39,336.96
1990	8	51,466.35	31,685.37	32,407.19	36,887.02	39,516.56
1991	9	50,772.27	31,924.15	31,569.96	35,994.84	38,599.42
1992	10	51,325.12	32,919.24	33,203.33	37,140.06	39,842.00
% change 1983-1992		52.4%	70.1%	92.0%	150.0%	90.8%

Table 6: Mean and Median Real Annual Earnings (in 2004 Dollars) by Tax Year (YSL) and Admission Category, All Female Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Adm. Cat. 1 Independent Economic	Adm. Cat. 2 Other Economic	Adm. Cat. 3 Family Class	Adm. Cat. 4 Refugee Class	Total, All Admission Categories
			Mean Real Annual Earnings (2004 Dollars)			
1982	0	$16,599.74	$10,131.72	$11,283.15	$6,249.54	$11,479.81
1983	1	24,565.60	14,542.92	13,953.34	10,632.97	15,475.00
1984	2	25,602.23	16,253.50	15,541.93	14,562.47	17,319.32
1985	3	27,036.57	17,812.77	16,475.88	16,721.33	18,634.12
1986	4	28,077.30	19,072.79	17,507.50	18,942.94	19,860.73
1987	5	29,262.72	20,659.95	18,920.54	20,611.05	21,279.59
1988	6	30,188.74	22,250.75	20,149.54	22,702.48	22,696.86
1989	7	31,710.16	23,563.91	21,473.79	24,119.09	24,036.14
1990	8	33,703.17	24,670.39	22,447.80	24,732.01	25,129.04
1991	9	33,266.14	25,149.40	22,505.97	25,011.96	25,271.93
1992	10	35,071.10	26,377.02	23,838.07	26,548.59	26,694.07
% change 1983-1992		42.8%	81.4%	70.8%	149.7%	72.5%
			Median Real Annual Earnings (2004 Dollars)			
1982	0	$11,864.60	$8,101.82	$8,240.15	$3,902.08	$8,169.55
1983	1	18,569.34	12,647.64	11,291.63	9,125.09	12,299.62
1984	2	20,841.61	14,373.97	13,270.54	13,047.61	14,647.02
1985	3	22,897.18	15,741.86	14,156.96	15,128.00	15,926.27
1986	4	24,562.47	17,060.99	15,054.00	17,651.28	17,234.09
1987	5	25,653.20	18,346.10	16,113.23	19,458.33	18,543.32
1988	6	27,197.39	20,037.32	17,454.96	21,431.72	20,020.42
1989	7	28,399.53	21,010.37	18,569.49	22,754.06	21,212.67
1990	8	30,708.47	22,230.23	19,231.44	23,018.83	22,053.95
1991	9	30,132.32	22,723.99	19,075.81	23,656.91	22,251.53
1992	10	30,997.92	23,462.13	19,990.78	25,159.18	23,290.18
% change 1983-1992		66.9%	85.5%	77.0%	175.7%	89.4%

Table 7: Mean and Dispersion of Immigrant Real Annual Earnings by Tax Year (YSL), ALL4 Analysis Sample of 1982 Landing Cohort

All Immigrants (Males and Females)				
Tax Year	YSL	Mean	Std. Dev.	CV
1982	0	$18,320.76	$23,871.90	0.7675
1983	1	23,716.75	25,176.00	0.9420
1984	2	26,583.43	25,141.03	1.0574
1985	3	28,458.34	25,246.61	1.1272
1986	4	29,974.35	25,133.61	1.1926
1987	5	31,809.98	27,903.62	1.1400
1988	6	33,953.73	30,079.29	1.1288
1989	7	35,505.32	29,803.84	1.1913
1990	8	35,944.18	29,635.73	1.2129
1991	9	35,698.57	29,569.40	1.2073
1992	10	36,979.64	32,411.66	1.1409

Male Immigrants				
Tax Year	YSL	Mean	Std. Dev.	CV
1982	0	$22,091.03	$27,856.98	0.7930
1983	1	29,045.48	29,357.18	0.9894
1984	2	32,905.28	28,967.62	1.1359
1985	3	35,425.95	28,840.05	1.2284
1986	4	37,463.73	28,418.00	1.3183
1987	5	39,769.29	32,227.70	1.2340
1988	6	42,593.69	34,940.72	1.2190
1989	7	44,473.18	34,202.27	1.3003
1990	8	44,411.85	33,832.29	1.3127
1991	9	43,918.63	33,846.51	1.2976
1992	10	45,211.65	37,698.75	1.1993

Female Immigrants				
Tax Year	YSL	Mean	Std. Dev.	CV
1982	0	$11,479.81	$11,102.92	1.0339
1983	1	15,475.00	13,013.61	1.1891
1984	2	17,319.32	13,575.41	1.2758
1985	3	18,634.12	14,085.80	1.3229
1986	4	19,860.73	14,703.10	1.3508
1987	5	21,279.59	15,489.89	1.3738
1988	6	22,696.86	16,401.11	1.3839
1989	7	24,036.14	17,142.38	1.4021
1990	8	25,129.04	18,154.50	1.3842
1991	9	25,271.93	18,328.22	1.3789
1992	10	26,694.07	19,923.83	1.3398

Table 8: Lower Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Immigrant Earners (Both Sexes) in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p05/p50	p10/p50	p20/p50	p25/p50
1982	0	27,665	0.1592	0.2242	0.3697	0.4527
1983	1	37,080	0.1710	0.2668	0.4472	0.5374
1984	2	37,065	0.1555	0.2426	0.4384	0.5342
1985	3	36,490	0.1531	0.2461	0.4413	0.5391
1986	4	35,820	0.1459	0.2470	0.4391	0.5396
1987	5	35,020	0.1473	0.2495	0.4370	0.5363
1988	6	34,640	0.1465	0.2509	0.4414	0.5435
1989	7	33,880	0.1455	0.2534	0.4502	0.5526
1990	8	32,660	0.1452	0.2547	0.4478	0.5463
1991	9	31,250	0.1320	0.2340	0.4296	0.5300
1992	10	30,170	0.1285	0.2351	0.4271	0.5258

Table 9: Lower Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Male Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p05/p50	p10/p50	p20/p50	p25/p50
1982	0	17,835	0.1415	0.2096	0.3553	0.4354
1983	1	22,520	0.1842	0.2906	0.4722	0.5610
1984	2	22,030	0.1625	0.2719	0.4789	0.5694
1985	3	21,350	0.1681	0.2773	0.4894	0.5780
1986	4	20,580	0.1671	0.2773	0.4930	0.5874
1987	5	19,945	0.1655	0.2774	0.4986	0.5939
1988	6	19,600	0.1725	0.2842	0.5053	0.5997
1989	7	19,015	0.1730	0.2933	0.5189	0.6122
1990	8	18,320	0.1623	0.2835	0.5051	0.5997
1991	9	17,475	0.1440	0.2556	0.4817	0.5825
1992	10	16,760	0.1370	0.2442	0.4681	0.5629

Table 10: Lower Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Female Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p05/p50	p10/p50	p20/p50	p25/p50
1982	0	9,830	0.1950	0.2612	0.3976	0.4902
1983	1	14,560	0.1774	0.2640	0.4398	0.5225
1984	2	15,035	0.1639	0.2478	0.4157	0.5135
1985	3	15,140	0.1565	0.2483	0.4272	0.5179
1986	4	15,240	0.1507	0.2460	0.4299	0.5221
1987	5	15,075	0.1557	0.2531	0.4361	0.5267
1988	6	15,040	0.1490	0.2544	0.4327	0.5181
1989	7	14,870	0.1457	0.2511	0.4406	0.5288
1990	8	14,340	0.1453	0.2560	0.4511	0.5386
1991	9	13,775	0.1403	0.2376	0.4180	0.5152
1992	10	13,415	0.1388	0.2387	0.4275	0.5243

Table 11: Upper Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Immigrant Earners (Both Sexes) in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p95/p50	p90/p50	p80/p50	p75/p50
1982	0	27,665	4.9428	3.6466	2.3881	2.0126
1983	1	37,080	3.9394	3.0962	2.0588	1.7655
1984	2	37,065	3.4296	2.7333	1.9528	1.6868
1985	3	36,490	3.2107	2.6117	1.9184	1.6825
1986	4	35,820	3.0290	2.4862	1.8665	1.6495
1987	5	35,020	2.9046	2.4098	1.8434	1.6344
1988	6	34,640	2.8350	2.3436	1.8102	1.6100
1989	7	33,880	2.7569	2.2831	1.7621	1.5868
1990	8	32,660	2.7469	2.2747	1.7501	1.5744
1991	9	31,250	2.8052	2.3108	1.7856	1.5972
1992	10	30,170	2.8154	2.3265	1.7838	1.5963

Table 12: Upper Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Male Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p95/p50	p90/p50	p80/p50	p75/p50
1982	0	17,835	4.6497	3.4910	2.3749	2.0192
1983	1	22,520	3.6063	2.9152	2.1167	1.7964
1984	2	22,030	3.0215	2.5045	1.8878	1.6678
1985	3	21,350	2.7778	2.3202	1.8159	1.6169
1986	4	20,580	2.5860	2.1881	1.7371	1.5728
1987	5	19,945	2.4886	2.1021	1.6932	1.5417
1988	6	19,600	2.4209	2.0534	1.6480	1.5078
1989	7	19,015	2.3660	2.0074	1.6314	1.4869
1990	8	18,320	2.3896	2.0277	1.6262	1.4792
1991	9	17,475	2.4585	2.0805	1.6684	1.5196
1992	10	16,760	2.4839	2.0958	1.6643	1.5132

Table 13: Upper Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Female Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p95/p50	p90/p50	p80/p50	p75/p50
1982	0	9,830	4.0701	3.0311	2.0768	1.8442
1983	1	14,560	3.5521	2.5515	1.8242	1.6210
1984	2	15,035	3.0995	2.3253	1.7335	1.5610
1985	3	15,140	2.9939	2.2609	1.7224	1.5522
1986	4	15,240	2.8175	2.2174	1.7028	1.5429
1987	5	15,075	2.7932	2.1915	1.6954	1.5448
1988	6	15,040	2.6781	2.1321	1.6722	1.5289
1989	7	14,870	2.6199	2.1350	1.6680	1.5334
1990	8	14,340	2.6041	2.1595	1.6783	1.5354
1991	9	13,775	2.6654	2.1851	1.6998	1.5467
1992	10	13,415	2.7164	2.2350	1.6966	1.5485

Table 14: Upper to Lower Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Immigrant Earners (Both Sexes) in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p95/p05	p90/p10	p80/p20	p75/p25
1982	0	27,665	31.0465	16.2673	6.4588	4.4457
1983	1	37,080	23.0422	11.6057	4.6035	3.2851
1984	2	37,065	22.0558	11.2668	4.4547	3.1576
1985	3	36,490	20.9661	10.6130	4.3476	3.1211
1986	4	35,820	20.7677	10.0671	4.2506	3.0570
1987	5	35,020	19.7178	9.6588	4.2180	3.0476
1988	6	34,640	19.3554	9.3406	4.1008	2.9624
1989	7	33,880	18.9437	9.0086	3.9140	2.8712
1990	8	32,660	18.9209	8.9305	3.9085	2.8818
1991	9	31,250	21.2553	9.8739	4.1563	3.0136
1992	10	30,170	21.9149	9.8951	4.1766	3.0360

Table 15: Upper to Lower Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Male Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p95/p05	p90/p10	p80/p20	p75/p25
1982	0	17,835	32.8567	16.6591	6.6844	4.6372
1983	1	22,520	19.5767	10.0312	4.4823	3.2021
1984	2	22,030	18.5902	9.2117	3.9417	2.9289
1985	3	21,350	16.5231	8.3661	3.7106	2.7972
1986	4	20,580	15.4780	7.8916	3.5234	2.6776
1987	5	19,945	15.0348	7.5770	3.3958	2.5958
1988	6	19,600	14.0372	7.2241	3.2618	2.5142
1989	7	19,015	13.6790	6.8442	3.1438	2.4289
1990	8	18,320	14.7245	7.1522	3.2194	2.4667
1991	9	17,475	17.0772	8.1391	3.4635	2.6087
1992	10	16,760	18.1294	8.5827	3.5553	2.6881

Table 16: Upper to Lower Median-Relative Percentile Real Earnings Ratios by Tax Year (YSL), All Female Immigrant Earners in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Nobs	p95/p05	p90/p10	p80/p20	p75/p25
1982	0	9,830	20.8695	11.6026	5.2229	3.7618
1983	1	14,560	20.0240	9.6635	4.1477	3.1024
1984	2	15,035	18.9129	9.3848	4.1703	3.0400
1985	3	15,140	19.1340	9.1067	4.0322	2.9970
1986	4	15,240	18.7014	9.0151	3.9610	2.9554
1987	5	15,075	17.9349	8.6583	3.8881	2.9329
1988	6	15,040	17.9759	8.3817	3.8645	2.9511
1989	7	14,870	17.9864	8.5020	3.7857	2.9000
1990	8	14,340	17.9183	8.4347	3.7203	2.8506
1991	9	13,775	18.9976	9.1977	4.0664	3.0018
1992	10	13,415	19.5665	9.3649	3.9686	2.9535

Table 17: Total Number of Immigrant Earners (Males and Females) by Post-Landing Tax Years 1983-1992 in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Adm. Cat. 1 Independent Economic	Adm. Cat. 2 Other Economic	Adm. Cat. 3 Family Class	Adm. Cat. 4 Refugee Class	Total, All Admission Categories
1983	1	12,315	5,305	11,885	7,575	37,080
1984	2	11,875	5,470	12,185	7,520	37,050
1985	3	11,335	5,535	12,120	7,490	36,480
1986	4	10,855	5,615	12,005	7,340	35,815
1987	5	10,390	5,595	11,885	7,140	35,010
1988	6	10,160	5,600	11,810	7,065	34,635
1989	7	9,885	5,595	11,540	6,855	33,875
1990	8	9,505	5,485	11,085	6,585	32,660
1991	9	9,110	5,245	10,635	6,245	31,235
1992	10	8,815	5,045	10,270	6,035	30,165
% change 1983-1992		-28.42%	-4.90%	-13.59%	-20.33%	-18.65%

Table 18: Number of Male Immigrant Earners by Post-Landing Tax Years 1983-1992 in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Adm. Cat. 1 Independent Economic	Adm. Cat. 2 Other Economic	Adm. Cat. 3 Family Class	Adm. Cat. 4 Refugee Class	Total, All Admission Categories
1983	1	9,655	1,560	6,230	5,070	22,515
1984	2	9,255	1,495	6,295	4,980	22,025
1985	3	8,820	1,450	6,140	4,935	21,345
1986	4	8,435	1,425	5,965	4,755	20,580
1987	5	8,085	1,395	5,885	4,585	19,950
1988	6	7,875	1,375	5,830	4,510	19,590
1989	7	7,675	1,355	5,625	4,365	19,020
1990	8	7,400	1,305	5,435	4,170	18,310
1991	9	7,090	1,225	5,190	3,950	17,455
1992	10	6,825	1,170	4,970	3,780	16,745
% change 1983-1992		-29.31%	-25.00%	-20.22%	-25.44%	-25.63%

Table 19: Number of Female Immigrant Earners by Post-Landing Tax Years 1983-1992 in ALL4 Analysis Sample of 1982 Landing Cohort

Tax Year	YSL	Adm. Cat. 1 Independent Economic	Adm. Cat. 2 Other Economic	Adm. Cat. 3 Family Class	Adm. Cat. 4 Refugee Class	Total, All Admission Categories
1983	1	2,660	3,740	5,650	2,505	14,555
1984	2	2,625	3,985	5,890	2,540	15,040
1985	3	2,515	4,085	5,980	2,565	15,145
1986	4	2,420	4,195	6,040	2,585	15,240
1987	5	2,315	4,205	6,000	2,565	15,085
1988	6	2,280	4,220	5,980	2,555	15,035
1989	7	2,210	4,240	5,915	2,495	14,860
1990	8	2,105	4,175	5,650	2,410	14,340
1991	9	2,025	4,020	5,445	2,280	13,770
1992	10	1,990	3,870	5,295	2,250	13,405
% change 1983-1992		-25.19%	3.48%	-6.28%	-10.18%	-7.90%

Table 20: Percentage Changes Between 1983 and 1992 of the 90/50 and 95/50 Percentile Earnings Ratios by Admission Category, Male and Female Immigrant Earners in the ALL4 Analysis Sample of the 1982 Landing Cohort

	Independent Economic	***Other Economic***	***Family Class***	***Refugees***	***All Immigrants***
Men					
90/50	-15.8%	-4.1%	-11.1%	-15.9%	-28.1%
95/50	-22.8%	-10.3%	-13.7%	-22.5%	-31.1%
Women					
90/50	-21.1%	-3.5%	-7.1%	-12.6%	-12.4%
95/50	-21.9%	-4.3%	-6.2%	-12.8%	-23.5%

Source: Authors' calculations.

Table 21: Percentage Distribution by Tax Year (YSL) of All Immigrant Earners (Both Sexes) Across Median-Relative Real Earnings Categories of the Aggregate Immigrant Earnings Distribution, ALL4 Analysis Sample of 1982 Landing Cohort

		Median-Relative Real Earnings Category, All Immigrants						
Tax Year	YSL	VL	LO	LM	HM	HI	VH	Total
1982	0	11.86	15.78	22.36	15.23	9.56	25.20	100.00
1983	1	9.06	13.89	27.05	18.90	10.18	20.92	100.00
1984	2	10.38	12.70	26.93	19.96	10.79	19.24	100.00
1985	3	10.18	12.79	27.03	20.18	11.24	18.58	100.00
1986	4	10.17	12.94	26.89	20.88	11.80	17.32	100.00
1987	5	10.02	13.14	26.84	21.39	11.94	16.66	100.00
1988	6	9.94	12.80	27.26	21.71	12.74	15.55	100.00
1989	7	9.80	12.52	27.68	22.34	13.05	14.61	100.00
1990	8	9.80	12.77	27.42	22.48	13.18	14.34	100.00
1991	9	10.72	12.59	26.69	21.85	12.93	15.21	100.00
1992	10	10.81	12.89	26.30	21.93	12.94	15.13	100.00

Table 22: Percentage Distribution by Tax Year (YSL) of All Male Immigrant Earners Across Median-Relative Real Earnings Categories of the Aggregate Immigrant Earnings Distribution, ALL4 Analysis Sample of 1982 Landing Cohort

		Median-Relative Real Earnings Category, All Males						
Tax Year	YSL	VL	LO	LM	HM	HI	VH	Total
1982	0	13.19	15.32	21.48	14.75	9.86	25.39	100.00
1983	1	8.00	13.59	28.41	18.50	9.73	21.77	100.00
1984	2	9.02	12.01	28.96	20.62	11.61	17.77	100.00
1985	3	8.78	11.82	29.40	21.52	12.69	15.79	100.00
1986	4	8.79	11.55	29.66	22.76	13.48	13.76	100.00
1987	5	8.68	11.39	29.93	23.45	14.40	12.14	100.00
1988	6	8.53	11.22	30.25	24.75	14.22	11.03	100.00
1989	7	8.37	10.64	30.99	25.57	14.31	10.12	100.00
1990	8	8.69	11.08	30.24	25.70	13.89	10.40	100.00
1991	9	9.74	11.13	29.13	24.24	14.12	11.63	100.00
1992	10	10.25	11.55	28.21	24.45	13.49	12.07	100.00

Table 23: Percentage Distribution by Tax Year (YSL) of All Female Immigrant Earners Across Median-Relative Real Earnings Categories of the Aggregate Immigrant Earnings Distribution, ALL4 Analysis Sample of 1982 Landing Cohort

		Median-Relative Real Earnings Category, All Females						
Tax Year	YSL	VL	LO	LM	HM	HI	VH	Total
1982	0	9.31	16.37	24.32	16.60	12.01	21.38	100.00
1983	1	9.20	14.48	26.32	21.29	12.26	16.44	100.00
1984	2	10.14	14.17	25.69	23.06	12.64	14.30	100.00
1985	3	10.11	13.87	26.02	23.15	13.03	13.82	100.00
1986	4	10.18	13.68	26.14	23.32	13.60	13.08	100.00
1987	5	9.79	13.93	26.28	23.22	14.25	12.54	100.00
1988	6	9.79	14.18	26.03	23.88	14.17	11.95	100.00
1989	7	9.91	13.62	26.47	23.78	14.32	11.89	100.00
1990	8	9.72	13.20	27.08	23.64	13.95	12.40	100.00
1991	9	10.74	13.52	25.74	23.34	13.70	12.96	100.00
1992	10	10.56	13.10	26.34	22.99	13.80	13.21	100.00

Table 24: Percentage Distribution in 1983 and 1992 of All Earners (Male and Female), All Male Earners, and All Female Earners Across Median-Relative Real Earnings Categories of the Aggregate Canadian Earnings Distribution

Year	*VL*	*LO*	*LM*	*HM*	*HI*	*VH*
All Earners (Male and Female)						
1983	12.0	13.9	24.2	21.3	14.8	13.9
1992	12.4	14.0	23.6	21.0	14.0	15.0
All Male Earners						
1983	8.2	10.5	19.1	21.2	19.7	21.3
1992	9.4	11.3	19.5	20.2	17.5	22.1
All Female Earners						
1983	17.2	18.5	31.3	21.4	8.1	3.5
1992	16.0	17.3	28.5	21.9	9.7	6.5

Source: Beach and Finnie (2000, Table 1).

PART 2: Immigrant Earnings Mobility

Four-Year Transition Matrices within the Aggregate Annual Real Earnings Distribution for All Immigrants in the ALL4 Analysis Sample for the 1982 Landing Cohort

Table 25: Four-Year Transition Matrix for All Immigrant Earners (Males and Females) in 1982 Landing Cohort, Post-Landing Years 1 to 5 (1983-1987), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1987	VL 1987	LO 1987	LM 1987	HM 1987	HI 1987	VH 1987	Row Sum
VL 1983	**19.41**	23.14	35.30	14.37	5.21	2.56	100.0
LO 1983	15.86	**21.83**	37.02	16.45	5.94	2.91	100.0
LM 1983	9.65	16.10	**40.92**	21.35	8.33	3.65	100.0
HM 1983	6.35	8.63	34.94	**31.55**	12.93	5.60	100.0
HI 1983	4.61	5.14	17.99	40.01	**21.35**	10.89	100.0
VH 1983	1.89	2.10	6.05	11.23	23.09	**55.64**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	31.78
Average Prob. of Moving Up/Down	=	68.22
Average Prob. of Moving Up	=	34.28
Average Prob. of Moving Down	=	33.94
Average Net Prob. of Moving Up	=	0.3350
Sum of diagonal probabilities/100	=	1.9070
Prais Mobility Index	=	0.8186
Average Upward Jump	=	0.5898
Average Downward Jump	=	0.5232

Table 26: Four-Year Transition Matrix for All Male Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 1 to 5 (1983-1987), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1987	VL 1987	LO 1987	LM 1987	HM 1987	HI 1987	VH 1987	Row Sum
VL 1983	**12.28**	18.86	31.47	21.88	10.04	5.47	100.0
LO 1983	13.38	**18.16**	31.32	21.88	10.05	5.22	100.0
LM 1983	7.14	12.58	**34.64**	26.75	12.96	5.93	100.0
HM 1983	5.26	7.00	30.47	**32.94**	16.75	7.58	100.0
HI 1983	3.57	5.10	16.44	38.30	**23.80**	12.78	100.0
VH 1983	1.59	1.67	5.11	9.94	20.97	**60.72**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	30.42
Average Prob. of Moving Up/Down	=	69.58
Average Prob. of Moving Up	=	39.82
Average Prob. of Moving Down	=	29.75
Average Net Prob. of Moving Up	=	10.07
Sum of diagonal probabilities/100	=	1.8254
Prais Mobility Index	=	0.8349
Average Upward Jump	=	0.5898
Average Downward Jump	=	0.4534

Table 27: Four-Year Transition Matrix for All Female Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 1 to 5 (1983-1987), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1987	VL 1987	LO 1987	LM 1987	HM 1987	HI 1987	VH 1987	Row Sum
VL 1983	**23.95**	25.87	37.74	9.59	2.13	0.71	100.0
LO 1983	17.96	**24.94**	41.87	11.83	2.45	0.94	100.0
LM 1983	12.50	20.11	**48.09**	15.19	3.06	1.06	100.0
HM 1983	8.36	11.62	43.17	**29.00**	5.91	1.94	100.0
HI 1983	7.63	5.26	22.50	45.00	**14.21**	5.39	100.0
VH 1983	3.58	4.50	11.30	18.45	34.95	**27.22**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	27.90
Average Prob. of Moving Up/Down	=	72.10
Average Prob. of Moving Up	=	27.61
Average Prob. of Moving Down	=	44.48
Average Net Prob. of Moving Up	=	-16.87
Sum of diagonal probabilities/100	=	1.6741
Prais Mobility Index	=	0.8652
Average Upward Jump	=	0.5898
Average Downward Jump	=	0.7209

Table 28: Four-Year Transition Matrix for All Immigrant Earners (Males and Females) in 1982 Landing Cohort, Post-Landing Years 6 to 10 (1988-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1988/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1988	**29.88**	26.54	28.59	9.74	3.77	1.48	100.0
LO 1988	19.97	**30.42**	34.17	11.27	2.92	1.24	100.0
LM 1988	9.63	14.59	**50.20**	20.32	3.99	1.27	100.0
HM 1988	5.01	6.76	22.00	**46.48**	16.17	3.59	100.0
HI 1988	3.22	3.67	8.29	23.12	**42.06**	19.65	100.0
VH 1988	1.62	1.78	3.81	5.94	14.65	**72.21**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	45.21
Average Prob. of Moving Up/Down	=	54.79
Average Prob. of Moving Up	=	30.79
Average Prob. of Moving Down	=	24.01
Average Net Prob. of Moving Up	=	6.775
Sum of diagonal probabilities/100	=	2.7125
Prais Mobility Index	=	0.6575
Average Upward Jump	=	0.4683
Average Downward Jump	=	0.3686

Table 29: Four-Year Transition Matrix for All Male Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 6 to 10 (1988-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1988/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1988	**25.31**	20.37	29.48	15.12	6.64	3.09	100.0
LO 1988	18.23	**27.53**	32.13	14.62	5.14	2.35	100.0
LM 1988	9.69	13.77	**46.45**	22.78	5.53	1.78	100.0
HM 1988	5.26	6.91	21.71	**45.81**	16.45	3.86	100.0
HI 1988	3.66	3.69	8.24	24.36	**41.02**	19.03	100.0
VH 1988	1.53	1.71	3.76	5.80	14.80	**72.39**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	43.09
Average Prob. of Moving Up/Down	=	56.92
Average Prob. of Moving Up	=	33.06
Average Prob. of Moving Down	=	23.85
Average Net Prob. of Moving Up	=	9.208
Sum of diagonal probabilities/100	=	2.5851
Prais Mobility Index	=	0.6830
Average Upward Jump	=	0.4683
Average Downward Jump	=	0.3690

Table 30: Four-Year Transition Matrix for All Female Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 6 to 10 (1988-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1988/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1988	**31.93**	29.30	28.20	7.33	2.49	0.76	100.0
LO 1988	20.92	**31.99**	35.28	9.46	1.71	0.64	100.0
LM 1988	9.59	15.19	**52.94**	18.53	2.86	0.89	100.0
HM 1988	4.54	6.47	22.54	**47.73**	15.64	3.07	100.0
HI 1988	1.44	3.59	8.48	18.10	**46.26**	22.13	100.0
VH 1988	2.44	2.44	4.27	7.32	13.11	**70.43**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	46.88
Average Prob. of Moving Up/Down	=	53.12
Average Prob. of Moving Up	=	29.72
Average Prob. of Moving Down	=	23.41
Average Net Prob. of Moving Up	=	6.308
Sum of diagonal probabilities/100	=	2.8128
Prais Mobility Index	=	0.6374
Average Upward Jump	=	0.4683
Average Downward Jump	=	0.3642

Table 31: Probabilities of Moving Up and Moving Down One or More Median-Relative Real Earnings Categories From One-Year Transition Matrices for All Male Immigrant Earners and All Female Immigrant Earners in the ALL4 Analysis Sample for the 1982 Landing Cohort

	Years 1-2	***Years 5-6***	***Years 9-10***
All Male Immigrant Earners			
Pr. moving up	33.9%	29.6%	24.9%
Pr. moving down	24.3%	16.7%	15.9%
Net Pr. moving up	9.6%	12.9%	9.0%
All Female Immigrant Earners			
Pr. moving up	24.0%	20.9%	20.5%
Pr. moving down	33.8%	24.0%	15.3%
Net Pr. moving up	-9.8%	-3.1%	5.1%

Source: Appendix Tables A6, A7, A9, A10, A12, and A13.

<u>Nine-Year</u> Transition Matrices within the Aggregate Annual Real Earnings Distribution for All Immigrants in the ALL4 Analysis Sample for the 1982 Landing Cohort

Table 32: Nine-Year Transition Matrix for All Immigrant Earners (Males and Females) in 1982 Landing Cohort, Post-Landing Years 1 to 10 (1983-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1983	**18.01**	18.71	33.43	17.96	8.23	3.64	100.0
LO 1983	15.43	**18.62**	34.44	19.44	8.08	4.01	100.0
LM 1983	11.87	15.96	**35.86**	23.03	9.15	4.12	100.0
HM 1983	8.60	11.22	32.33	**29.47**	12.11	6.28	100.0
HI 1983	6.76	7.00	22.05	33.35	**19.34**	11.50	100.0
VH 1983	2.90	3.07	8.65	14.22	22.09	**49.08**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	28.40
Average Prob. of Moving Up/Down	=	71.60
Average Prob. of Moving Up	=	35.69
Average Prob. of Moving Down	=	35.92
Average Net Prob. of Moving Up	=	-0.2283
Sum of diagonal probabilities/100	=	1.7038
Prais Mobility Index	=	0.8592
Average Upward Jump	=	0.6567
Average Downward Jump	=	0.6074

Table 33: Nine-Year Transition Matrix for All Male Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 1 to 10 (1983-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1983	**13.88**	14.56	28.44	21.97	13.88	7.28	100.0
LO 1983	12.14	**15.37**	29.00	24.54	12.47	6.47	100.0
LM 1983	10.19	12.43	**31.15**	27.42	12.57	6.23	100.0
HM 1983	7.71	9.84	28.37	**31.47**	14.64	7.97	100.0
HI 1983	6.52	6.84	20.88	32.80	**19.98**	12.98	100.0
VH 1983	2.56	2.86	7.83	13.59	20.90	**52.26**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	27.35
Average Prob. of Moving Up/Down	=	72.65
Average Prob. of Moving Up	=	40.07
Average Prob. of Moving Down	=	32.58
Average Net Prob. of Moving Up	=	7.493
Sum of diagonal probabilities	=	1.6411
Prais Mobility Index	=	0.8718
Average Upward Jump	=	0.6567
Average Downward Jump	=	0.5552

Table 34: Nine-Year Transition Matrix for All Female Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 1 to 10 (1983-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1983	**20.44**	21.16	36.37	15.61	4.91	1.51	100.0
LO 1983	18.12	**21.27**	38.90	15.25	4.48	1.99	100.0
LM 1983	13.80	20.00	**41.25**	18.01	5.23	1.70	100.0
HM 1983	10.22	13.75	39.57	**25.82**	7.47	3.17	100.0
HI 1983	7.51	7.51	25.56	34.98	**17.41**	7.03	100.0
VH 1983	4.84	4.27	13.37	17.78	28.88	**30.87**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	26.18
Average Prob. of Moving Up/Down	=	73.82
Average Prob. of Moving Up	=	30.47
Average Prob. of Moving Down	=	43.36
Average Net Prob. of Moving Up	=	-12.90
Sum of diagonal probabilities/100	=	1.5706
Prais Mobility Index	=	0.8859
Average Upward Jump	=	0.6567
Average Downward Jump	=	0.7466

Table 35: Values of Prais Mobility Index for Male and Female Immigrants in 1982 Landing Cohort and for All Canadian Earners, Males and Females, Various Transition Periods

	Males	***Females***
1982 immigrants, initial 4-year period 1983-1987	0.835	0.865
1982 immigrants, full 9-year period 1983-1992	0.872	0.886
All earners, 12-year period 1982-1994	0.826	0.780

Source: Tables 26, 27, 33, and 34; Appendix Table A15.

Appendix Tables

Table A1: Definition of Admission Categories (admcat) in Terms of IMCAT Codes

Admission Category (admcat) Code	Admission Category Label	IMCAT Code	IMCAT Code Description
admcat = 0	Other	**16**	**Live-in Caregiver**
		17	**Backlog Case**
		18	Administrative Review
		19	Humanitarian & Compassionate Case
		20	Other H & C Case outside Famly Cl/PubPolicy
		21	**Other Immigrant**
admcat = 1	Independent Economic	**07**	**Skilled Worker PA, ABR, No SPG**
admcat = 2	Other Economic	**08**	**Skilled Worker PA, CAN, SPG**
		09	**Skilled Worker Spouse & Dependent**
admcat = 3	Family Class	**01**	**Family Class**
admcat = 4	Refugees	**12**	**Government Assisted Refugee**
		13	**Privately Sponsored Refugee**
		14	Landed in Canada Refugee
		15	Refugee Dependent
admcat = 5	Business Class	**02**	**Entrepreneur PA, ABR, No SPG**
		03	**Self Employed PA, ABR, No SPG**
		04	Investor PA, ABR, No SPG
		05	**Other Business PA, CAN, SPG**
		06	**Business Class Spouse & Dependent**

Table A2: Distribution of Person-Year Records by IMCAT Code and Admission Category in Master File for 1982 Landing Cohort

IMCAT Code	Admission Category (admcat)					
	Other admcat = 0	Independent Economic admcat = 1	Other Economic admcat = 2	Family Class admcat = 3	Refugees admcat = 4	Business Class admcat = 5
01	0	0	0	160,720	0	0
02	0	0	0	0	0	2,325
03	0	0	0	0	0	10,040
05	0	0	0	0	0	55
06	0	0	0	0	0	9,125
07	0	131,490	0	0	0	0
08	0	0	22,205	0	0	0
09	0	0	58,270	0	0	0
12	0	0	0	0	60,940	0
13	0	0	0	0	30,455	0
16	570	0	0	0	0	0
17	20	0	0	0	0	0
21	1,235	0	0	0	0	0
Total	1,835	131,490	80,470	160,720	91,400	21,535

Table A3: Selection of ALL4 Analysis Sample from Master File, 1982 Landing Cohort

Analysis Sample Exclusion Criteria	Number of Master File Records	Percent of Master File Records
Master File, 1982 Landing Cohort	**487,456**	**100.00%**
Records with missing values for:		
1. Landing year (landyear)	0	0.00%
2. Person ID (personid)	0	0.00%
3. Tax Year (taxyear)	0	0.00%
4. Sex Code (sexcode)	0	0.00%
5. Birth Year (birthyr)	0	0.00%
6. Age at Landing (ageland)	0	0.00%
7. Marital Status at Landing (landmarstat)	0	0.00%
8. Admission Category (admcat)	0	0.00%
9. Education at Landing (landeduc2)	0	0.00%
10. Province of Residence (taxprov)	0	0.00%
11. Annual Wage & Salary Earnings (wsearn)	0	0.00%
Records in Admission Category:		
12. "Other Immigrants' (admcat = 0)	1,836	0.38%
13. "Business Class' (admcat = 5)	21,536	4.42%
Records with Annual Wage & Salary Earnings:		
14. equal to zero (wsearn = 0)	80,160	16.44%
15. less than minimum cutoff (wsearn < cutoff)	103,850	21.30%
ALL4 Analysis Sample, 1982 Landing Cohort	**371,752**	**76.26%**
Records excluded from 1982 Master File	115,704	23.74%

Table A4: Eight-Year Transition Matrices for All Male Earners and All Female Earners in Canada, 1982-1990, from Beach (2006)

1982/90	VL	LO	LM	HM	HI	VH
All Male Earners in Canada: Prais Index M = 0.776						
VL	**15.04**	19.16	27.93	21.52	10.60	5.75
LO	10.75	**19.02**	29.31	22.84	11.76	6.31
LM	5.89	11.65	**30.19**	29.40	14.58	8.29
HM	3.28	5.25	14.62	**37.78**	26.45	12.62
HI	2.18	3.04	7.50	17.72	**38.12**	31.44
VH	1.85	2.22	4.54	6.41	13.06	**71.91**
All Female Earners in Canada: Prais Index M = 0.718						
VL	**22.95**	24.46	32.21	14.56	4.41	1.39
LO	15.24	**25.39**	37.05	16.09	4.56	1.68
LM	8.56	13.03	**40.53**	28.45	6.92	2.52
HM	5.10	5.99	17.74	**45.08**	19.91	6.17
HI	3.14	3.53	9.09	18.15	**41.58**	24.50
VH	2.43	2.52	5.15	7.77	16.89	**65.24**

Percentage Distribution of Earners by Earnings Categories

	VL	*LO*	*LM*	*HM*	*HI*	*VH*
Males						
1982	7.50	9.65	19.73	23.06	19.97	20.09
1990	7.64	10.27	20.07	22.54	18.33	21.15
1991	8.91	10.81	19.55	20.92	17.71	22.10
Females						
1982	16.80	18.68	33.21	20.59	7.54	3.18
1990	15.91	17.89	30.94	21.39	9.05	4.82
1991	16.15	17.54	29.26	21.70	9.52	5.83

Source: Beach (2006, Table 4.1, p. 107).

One-Year Transition Matrices, ALL4 Analysis Sample, 1982 Landing Cohort, Median-Relative Earnings Categories for All Immigrants

Table A5: One-Year Transition Matrix for All Immigrant Earners (Males and Females) in 1982 Landing Cohort, Post-Landing Years 1 to 2 (1983-1984), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1984	VL 1984	LO 1984	LM 1984	HM 1984	HI 1984	VH 1984	Row Sum
VL 1983	**29.45**	29.07	31.39	7.25	2.24	0.61	100.0
LO 1983	21.40	**26.13**	39.32	9.66	2.34	1.15	100.0
LM 1983	9.25	15.89	**49.26**	19.08	4.48	2.04	100.0
HM 1983	3.64	5.68	30.37	**45.62**	10.47	4.22	100.0
HI 1983	1.72	2.58	9.15	38.97	**35.27**	12.32	100.0
VH 1983	0.60	0.94	2.67	4.60	15.49	**75.71**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	43.57
Average Prob. of Moving Up/Down	=	56.43
Average Prob. of Moving Up	=	29.27
Average Prob. of Moving Down	=	27.16
Average Net Prob. of Moving Up	=	2.115
Sum of diagonal probabilities/100	=	2.6144
Prais Mobility Index	=	0.6771
Average Upward Jump	=	0.4354
Average Downward Jump	=	0.3663

Table A6: One-Year Transition Matrix for All Male Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 1 to 2 (1983-1984), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1984	VL 1984	LO 1984	LM 1984	HM 1984	HI 1984	VH 1984	Row Sum
VL 1983	**21.87**	25.72	35.16	12.33	3.95	0.96	100.0
LO 1983	18.19	**23.13**	39.36	13.45	3.81	2.05	100.0
LM 1983	8.09	13.91	**43.93**	24.08	6.83	3.15	100.0
HM 1983	3.79	5.13	26.64	**45.89**	13.03	5.53	100.0
HI 1983	1.52	2.39	8.54	36.38	**37.14**	14.04	100.0
VH 1983	0.56	0.83	2.22	3.93	13.81	**78.64**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	41.77
Average Prob. of Moving Up/Down	=	58.23
Average Prob. of Moving Up	=	33.91
Average Prob. of Moving Down	=	24.32
Average Net Prob. of Moving Up	=	9.587
Sum of diagonal probabilities/100	=	2.5060
Prais Mobility Index	=	0.6988
Average Upward Jump	=	0.4354
Average Downward Jump	=	0.3295

Table A7: One-Year Transition Matrix for All Female Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 1 to 2 (1983-1984), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1983/1984	VL 1984	LO 1984	LM 1984	HM 1984	HI 1984	VH 1984	Row Sum
VL 1983	**34.38**	31.25	28.93	3.94	1.13	0.38	100.0
LO 1983	24.15	**28.69**	39.28	6.42	1.08	0.38	100.0
LM 1983	10.58	18.13	**55.30**	13.40	1.81	0.78	100.0
HM 1983	3.38	6.67	37.08	**45.13**	5.87	1.87	100.0
HI 1983	2.30	3.10	10.92	46.44	**29.89**	7.36	100.0
VH 1983	0.76	1.53	5.06	8.21	24.55	**59.89**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	42.21
Average Prob. of Moving Up/Down	=	57.79
Average Prob. of Moving Up	=	23.98
Average Prob. of Moving Down	=	33.81
Average Net Prob. of Moving Up	=	-9.830
Sum of diagonal probabilities/100	=	2.5328
Prais Mobility Index	=	0.6934
Average Upward Jump	=	0.4354
Average Downward Jump	=	0.4614

Table A8: One-Year Transition Matrix for All Immigrant Earners (Males and Females) in 1982 Landing Cohort, Post-Landing Years 5 to 6 (1987-1988), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1987/1988	VL 1988	LO 1988	LM 1988	HM 1988	HI 1988	VH 1988	Row Sum
VL 1987	**36.72**	32.58	25.05	4.41	1.09	0.15	100.0
LO 1987	19.18	**38.05**	34.70	6.44	1.33	0.30	100.0
LM 1987	7.05	12.64	**62.05**	15.64	1.95	0.66	100.0
HM 1987	2.14	2.97	19.80	**62.23**	11.14	1.72	100.0
HI 1987	0.65	1.43	5.05	21.14	**59.53**	12.21	100.0
VH 1987	0.33	0.69	1.50	3.56	14.46	**79.46**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	56.34
Average Prob. of Moving Up/Down	=	43.66
Average Prob. of Moving Up	=	24.90
Average Prob. of Moving Down	=	18.77
Average Net Prob. of Moving Up	=	6.130
Sum of diagonal probabilities	=	3.3804
Prais Mobility Index	=	0.5239
Average Upward Jump	=	0.3368
Average Downward Jump	=	0.2445

Table A9: One-Year Transition Matrix for All Male Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 5 to 6 (1987-1988), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1987/1988	VL 1988	LO 1988	LM 1988	HM 1988	HI 1988	VH 1988	Row Sum
VL 1987	**27.45**	30.91	31.14	7.50	2.54	0.46	100.0
LO 1987	15.45	**34.42**	36.31	10.50	2.71	0.61	100.0
LM 1987	6.85	10.77	**56.48**	21.31	3.46	1.12	100.0
HM 1987	2.07	3.02	16.84	**62.10**	13.98	2.00	100.0
HI 1987	0.67	1.56	4.23	20.06	**60.24**	13.24	100.0
VH 1987	0.33	0.63	1.39	3.14	13.17	**81.35**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	53.67
Average Prob. of Moving Up/Down	=	46.33
Average Prob. of Moving Up	=	29.63
Average Prob. of Moving Down	=	16.70
Average Net Prob. of Moving Up	=	12.94
Sum of diagonal probabilities	=	3.2204
Prais Mobility Index	=	0.5559
Average Upward Jump	=	0.3368
Average Downward Jump	=	0.2211

Table A10: One-Year Transition Matrix for All Female Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 5 to 6 (1987-1988), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1987/1988	VL 1988	LO 1988	LM 1988	HM 1988	HI 1988	VH 1988	Row Sum
VL 1987	**41.22**	33.39	22.09	2.91	0.39	0.00	100.0
LO 1987	21.37	**40.19**	33.74	4.06	0.52	0.12	100.0
LM 1987	7.21	14.07	**66.30**	11.31	0.80	0.31	100.0
HM 1987	2.27	2.87	25.01	**62.47**	6.14	1.24	100.0
HI 1987	0.58	0.93	8.05	25.09	**56.94**	8.40	100.0
VH 1987	0.40	1.20	2.40	7.20	25.60	**63.20**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	55.05
Average Prob. of Moving Up/Down	=	44.95
Average Prob. of Moving Up	=	20.90
Average Prob. of Moving Down	=	24.04
Average Net Prob. of Moving Up	=	-3.138
Sum of diagonal probabilities	=	3.3032
Prais Mobility Index	=	0.5394
Average Upward Jump	=	0.3368
Average Downward Jump	=	0.3129

Table A11: One-Year Transition Matrix for All Immigrant Earners (Males and Females) in 1982 Landing Cohort, Post-Landing Years 9 to 10 (1991-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1991/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1991	**46.93**	30.71	18.00	3.35	0.51	0.51	100.0
LO 1991	19.90	**45.62**	29.14	4.33	0.82	0.18	100.0
LM 1991	6.46	11.23	**65.39**	15.21	1.45	0.26	100.0
HM 1991	2.27	3.13	14.43	**66.48**	12.59	1.11	100.0
HI 1991	1.13	1.60	4.76	13.51	**64.25**	14.75	100.0
VH 1991	0.40	1.05	1.82	2.32	8.70	**85.71**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	62.40
Average Prob. of Moving Up/Down	=	37.60
Average Prob. of Moving Up	=	22.15
Average Prob. of Moving Down	=	15.45
Average Net Prob. of Moving Up	=	6.702
Sum of diagonal probabilities	=	3.7438
Prais Mobility Index	=	0.4512
Average Upward Jump	=	0.2846
Average Downward Jump	=	0.2148

Table A12: One-Year Transition Matrix for All Male Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 9 to 10 (1991-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1991/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1991	**39.98**	28.35	23.13	6.76	0.95	0.83	100.0
LO 1991	21.75	**38.95**	30.27	6.96	1.89	0.17	100.0
LM 1991	7.29	11.02	**61.06**	18.31	1.92	0.40	100.0
HM 1991	2.70	3.21	13.85	**65.43**	13.61	1.21	100.0
HI 1991	1.28	1.64	4.46	14.02	**64.17**	14.43	100.0
VH 1991	0.39	1.11	1.74	2.31	8.49	**85.96**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	59.26
Average Prob. of Moving Up/Down	=	40.74
Average Prob. of Moving Up	=	24.87
Average Prob. of Moving Down	=	15.88
Average Net Prob. of Moving Up	=	8.988
Sum of diagonal probabilities	=	3.5555
Prais Mobility Index	=	0.4889
Average Upward Jump	=	0.2846
Average Downward Jump	=	0.2224

Table A13: One-Year Transition Matrix for All Female Immigrant Earners in 1982 Landing Cohort, Post-Landing Years 9 to 10 (1991-1992), Aggregate Earnings Distribution of All Immigrant Earners in ALL4 Analysis Sample

1991/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1991	**50.79**	32.02	15.15	1.45	0.26	0.33	100.0
LO 1991	18.87	**49.29**	28.52	2.89	0.24	0.19	100.0
LM 1991	5.84	11.39	**68.66**	12.87	1.09	0.15	100.0
HM 1991	1.58	2.99	15.37	**68.19**	10.92	0.96	100.0
HI 1991	0.67	1.45	5.69	11.94	**64.51**	15.74	100.0
VH 1991	0.44	0.66	2.40	2.40	10.26	**83.84**	100.0

Average Summary Transition Probabilities

Average Prob. of Staying	=	64.21
Average Prob. of Moving Up/Down	=	35.79
Average Prob. of Moving Up	=	20.46
Average Prob. of Moving Down	=	15.33
Average Net Prob. of Moving Up	=	5.138
Sum of diagonal probabilities	=	3.8528
Prais Mobility Index	=	0.4294
Average Upward Jump	=	0.2846
Average Downward Jump	=	0.2091

Table A14: One-Year Transition Matrices for All Male Earners and All Female Earners in Canada, 1991-92

1991/92		VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992
Men	**VL 1991**	**46.27**	29.49	19.03	3.97	0.83	0.40
	LO 1991	19.71	**42.51**	29.81	6.18	1.29	0.49
	LM 1991	7.11	14.11	**56.46**	18.53	2.86	0.94
	HM 1991	2.16	3.47	14.26	**62.05**	15.95	2.12
	HI 1991	.086	1.35	4.11	13.17	**65.35**	15.16
	VH 1991	0.41	0.62	1.66	2.86	8.94	**85.51**
Women	**VL 1991**	**55.86**	29.24	12.93	1.66	0.22	0.08
	LO 1991	20.28	**49.73**	26.19	3.32	0.37	0.11
	LM 1991	5.67	12.17	**65.54**	14.95	1.36	0.31
	HM 1991	1.42	2.67	13.27	**71.04**	10.51	1.09
	HI 1991	0.61	0.98	4.45	12.83	**67.10**	14.02
	VH 1991	0.34	0.54	1.68	3.56	9.90	**83.99**

Source: Beach (2006, Table 4.4, p. 109).

Table A15: Twelve-Year Transition Matrices for All Male Earners and All Female Earners in Canada, 1982-1994

1982/1994	VL 1994	LO 1994	LM 1994	HM 1994	HI 1994	VH 1994
All Male Earners: Prais Mobility Index = 0.826						
VL 1982	**13.8**	17.5	25.6	20.7	12.1	10.3
LO 1982	11.3	**17.4**	26.3	21.3	13.3	10.4
LM 1982	7.3	12.1	**26.0**	27.1	15.7	11.8
HM 1982	4.4	6.7	14.9	**29.8**	25.7	18.6
HI 1982	3.1	4.3	9.0	14.1	**30.4**	39.0
VH 1982	3.1	3.4	6.2	7.2	10.8	**69.4**
All Female Earners: Prais Mobility Index = 0.780						
VL 1982	**19.9**	21.2	31.0	18.0	6.5	3.5
LO 1982	14.6	**21.6**	33.1	20.2	6.8	3.7
LM 1982	9.6	12.8	**32.0**	31.0	9.7	4.9
HM 1982	5.6	6.7	16.0	**37.8**	22.8	11.2
HI 1982	3.7	4.1	8.6	15.0	**32.4**	36.2
VH 1982	3.3	3.1	5.5	8.1	13.7	**66.3**

Source: Beach and Finnie (1998, Table 3, p. 9).