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### Earnings Mobility of Canadian Immigrants: A Transition Matrix Approach

*Michael G. Abbott*  
Queen's University

*Charles M. Beach*  
Queen's University

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## Abstract

This Study examines the earnings mobility of Canadian immigrants using the large IMDB microdata file. We examine earnings transition matrices of immigrants over ten years after landing in Canada for three landing cohorts – 1982, 1988, and 1994. Immigrants also arrive under four separate admission classes: independent economic, other economic, family class, and refugees.

The study reports five major empirical findings. First, overall earnings mobility was slightly greater for male immigrant earners than for male workers as a whole in the Canadian labour market, but was considerably greater for female immigrant earners than for all female earners in Canada. But both male and female immigrants over their first decade in Canada were much more likely to experience downward earnings mobility than were all earners of the same gender in Canada. Second, across the four immigrant admission classes, independent economic immigrants have markedly the highest average probability of moving up and the lowest probability of moving down the earnings distribution. Third, overall earnings mobility is slightly higher for female than male immigrants – opposite to the situation for workers as whole in Canada. Fourth, the degree of immigrant earnings mobility declines over immigrants' first ten post-landing years in Canada as they integrate into the Canadian labour market. Fifth, overall earnings mobility across landing cohorts has shown only minor changes between the 1982 and 1994 cohorts, where the average probability of moving up has significantly increased and the average probability of moving down has significantly decreased. The early 1990s economic recession is seen to have had substantial negative or dampening effects on immigrant earnings mobility for the 1988 landing cohort.

## Executive Summary

This study examines the earnings mobility of Canadian immigrants between 1982 and 2005 using the large IMDB microdata file of immigrants to Canada. The distinguishing – indeed novel – feature of the study is its analysis of earnings mobility in terms of earnings transition matrices which divide the immigrant earnings distribution into six earnings categories (defined in terms of immigrants' median earnings levels from less-than-25%-of-the-median up to more-than-200%-of-the-median) and then show how the immigrants in a given earnings category experience earnings change over a specified period of time. In our analysis, we follow immigrants for a ten-year period beginning with their first full year after landing in Canada.

There are several key dimensions to the analysis. Male and female immigrants are treated separately so their possibly different labour market experiences can be allowed for. The paper examines the earnings transitions of three different landing cohorts – immigrants landing in the years 1982, 1988, and 1994 – in order to identify robust common patterns of earnings adjustment. Immigrants are followed for ten full years in each of these landing cohorts. Thus the analysis focuses on nine-year earnings transitions (i.e., over a ten-year period), though the paper also provides results for four-year and even one-year transitions (i.e., over five and two years respectively) in order to see how immigrants' earnings mobility varies with years since landing in Canada. Further, immigrants arrive under different admission programs. The study distinguishes among four major admission classes – independent economic immigrants (i.e., principal applicants who are evaluated under a skills-based point system screen), other economic immigrants (i.e., other family members accompanying the principal applicant), family class immigrants (who are sponsored by a resident family), and refugee class immigrants (who are admitted on humanitarian grounds). So a policy-relevant question is whether and how much better immigrants in one admission class do relative to those arriving in other classes.

The paper makes several contributions. It offers a novel empirical framework for the study of immigrant earnings adjustment, and provides a comparison of immigrant earnings mobility with that for workers as a whole in the Canadian labour market. It also provides a comparison of immigrant earnings mobility patterns across the major immigrant admission classes, and hence offers a framework for a similar analysis of specific immigration programs. The study also compares immigrant earnings mobility outcomes over time (from the 1980s to the early 2000s) in Canada.

This paper can be viewed as a companion piece to an earlier CLSRN study by Abbott and Beach (2011) which uses the same data over the same period and the same major breakdowns. The earlier paper, however, looked at immigrant (real) earnings levels and growth rates over the immigrants' first ten years in Canada, whereas the current paper examines their earnings *mobility patterns* over the same periods.

The study reports five major empirical findings. First, overall earnings mobility over their first decade in Canada was slightly greater for male immigrant earners than for male workers as a whole in the Canadian labour market, but was considerably greater for female immigrant earners than for all female earners in Canada. But both male and female immigrants over their first ten years in Canada were much more likely to experience downward earnings mobility than were all earners of the same gender in Canada.

Second, in terms of earnings mobility patterns across the four immigrant admission classes, the study has found that, for both men and women and across the three landing cohorts, independent economic immigrants have markedly the highest average probability of moving up one or more earnings categories over their first ten years in Canada and the lowest probability of moving down, whereas family class immigrants display the lowest average probability of moving up and the highest average probability of moving down. As a result, the net average probability of moving up is markedly the highest among independent economic immigrants and the lowest among family class immigrants.

Third, there are a number of differences in the earnings mobility patterns between male and female immigrants. Measures of total or overall mobility (the Prais index and the average probability of moving between earnings categories) are both higher for female than for male immigrants on average by 2-7 percent. Interestingly, this is opposite to the case for male and female workers as a whole in the Canadian labour market. The higher overall mobility among female as compared to male immigrants is due both to a higher average probability of moving up one or more earnings categories and to a higher average probability of moving down across categories. This suggests the need for further investigation of the earnings adjustment process that female immigrants experience after landing in Canada.

Fourth, the degree of immigrant earnings mobility declines over immigrants' first ten post-landing years in Canada as they integrate into the Canadian labour market, consistent with conventional economic theory.

Fifth, the overall earnings mobility across landing cohorts has shown only minor changes between the 1982 and 1994 cohorts of immigrants which, in a regression framework, show up as only marginally significant increases. Where the trend changes in mobility patterns do show up as highly statistically significant (and quite large in the case of male immigrants) are a rise in the average probability of moving up, a fall in the average probability of moving down, and thus an increase in the net probability of moving up. That is, while average initial earnings levels of immigrants have fallen or worsened over the period, the speed of their upward earnings mobility after landing has indeed increased. The early 1990s economic recession is seen to have had substantial negative or dampening effects on immigrant earnings mobility for the 1988 landing cohort. For example, both measures of overall earnings mobility are lower by 4.9 percent for men and by 7.1 percent for women in the 1988 cohort compared to the averages of the other two landing cohorts. The dampening effect of the recession is evident across all four immigrant admission classes.

Keywords: Immigrant earnings, transition matrices, Canadian immigrants  
JEL Codes: J31, J61.

## **1. Introduction**

This study analyzes patterns of earnings mobility of immigrants to Canada. The novel feature of the empirical analysis is the use of transition matrices to characterize how the earnings of immigrants change over their first ten years after their landing in Canada. That is, we divide up the initial full-year earnings of immigrants into six separate earnings categories (defined in terms of immigrants' median earnings levels from less-than-25%-of-the-median up to more-than-200%-of-the-median), and then examine what happens to the real earnings of immigrant workers within each of these categories by the end of the ten-year transition period. This allows one to examine how immigrants' earnings change over different regions of the immigrants' earnings distribution. This disaggregative or distributional approach thus complements the more conventional empirical approach to immigrant earnings adjustment of looking at how immigrants' mean or median earnings change or evolve the longer immigrants remain working in Canada. We can look at what fractions of immigrant workers overall and within each earnings category move up the earnings distribution or move down, and thus the relative incidence of gain or loss in immigrants' earnings adjustment.

The empirical analysis makes use of the large IMDB microdata base of immigrant landings in Canada that then follows these immigrants in terms of their annual income tax filing. We look at three separate landing cohorts of immigrants – those landing in 1982, those landing in 1988, and those arriving in 1994. Each of these cohorts is then followed for ten full years in terms of their reported earnings. Male and female immigrants are treated separately so their possibly different labour market experiences can be allowed for. The immigrants are also divided up into four major admission classes – skill-evaluated principal applicants or “independent

economic immigrants”, accompanying family members or “other economic immigrants”, family class immigrants, and refugees. This allows one to examine the relative economic or earnings success of these different policy categories of immigrants to Canada.

Examination of immigrant earnings mobility is of interest for a number of reasons. First, the real earnings of immigrants to Canada have been slipping over recent decades, so there is social concern about decreasing economic well-being of immigrants and possibly reduced economic opportunities available to more recent immigrants coming to Canada, and hence about the ability of Canada to attract desirable immigrants. Not only are mean or median real earnings outcomes of interest, but economic opportunity is also reflected in the mobility of immigrants’ earnings and their experience in getting ahead in the Canadian labour market. High or increasing degrees of upward mobility of earnings may indicate increasing opportunities for economic advancement, whereas low degrees of upward mobility or high degrees of downward mobility may reflect limited or deteriorating opportunities for economic advancement. Second, there exists virtually no empirical evidence in the current literature on how earnings mobility of immigrants varies with duration of years since landing in Canada, varies across different admission classes of immigrants, or has changed over time. Such evidence could help us better understand the Chiswick-Borjas hypothesis of how mean earnings of immigrants in the arrival country (Canada) changes as duration of years since immigration increases and hence the earnings adjustment processes involved. Third, Canada is in the midst of major changes in its immigration policy and any additional evidence on immigrant economic outcomes can help inform such changes. One key aspect of immigration policy is the relative importance to put on economic class vs non-economic class immigrants. Another is how immigrants are affected by

economic recessions and hence whether the total level of immigration flows should perhaps reflect such business cycle considerations. Improving Canadian immigration policy can help Canada to better compete internationally for desirable immigrants, and to better address the oncoming need to replace retiring baby boomers and loss of human capital from the Canadian economy.

Correspondingly, this paper has several objectives. For the first time in the immigrant earnings adjustment literature – to the authors’ awareness – this study makes use of a disaggregative transition matrix approach to examine earnings mobility patterns or signatures (both up and down) across different regions of the immigrant earnings distribution. It also aggregates across these different regions to capture patterns of immigrant earnings mobility as a whole, again both upward and downward. The paper then identifies this immigrant earnings mobility signature broken down by gender, by different major immigrant admission classes, and across three different immigrant landing cohorts. And more specifically, because of the timing of the three landing cohorts considered, we can examine the effects of a major economic recession (of the early 1990s) on immigrants’ earnings mobility patterns.

The paper thus makes several contributions to the literature on immigrant earnings adjustment patterns post landing in a new host country (Canada in this case). It offers a novel empirical framework for the study of immigrant earnings adjustment. It provides a comparison of immigrant earnings mobility patterns (over their first ten years after landing in Canada) across major immigrant admission classes, and hence provides a framework for a similar analysis for specific immigration programs. It also provides a comparison of immigrant earnings mobility



outcomes over time (from the 1980s to the early 2000s), and hence allows analysis of the effects of a severe recession on immigrant earnings adjustment patterns.

The paper proceeds as follows. Section 2 reviews the literature on earnings mobility and its application to immigrants in Canada. Section 3 describes the data source for the study and the construction of the estimation samples used in the empirical analysis. In doing so, it also describes the different landing cohorts and immigrant admission classes that are the focus of the study. In Section 4, the transition matrix approach to characterizing earnings mobility is outlined and the specific earnings categories defined. A detailed overview of the transition matrix results for the 1994 landing cohort is provided. In Section 5, we examine earnings mobility differences across the four immigrant admission classes. Section 6 then turns to immigrant earnings mobility differences across the three landing cohorts of the study, for 1982, 1988 and 1994. In Section 7, we combine the above results in terms of descriptive or characteristic regressions to identify the net differences in earnings mobility of the various characteristics examined above. The paper concludes with a review of our major empirical findings and some discussion of their possible implications for Canadian immigration policy.

## **2. A Review of Immigrant Earnings Mobility**

Income or earnings mobility typically arise in two broad contexts. One is with respect to inter-generational mobility or the degree to which the incomes (or other economic outcomes) of offspring relate to that of their parents (Corak et al., 2012; Corak, 2004, 2008; and Solon, 1999). The other context – and the focus of the present paper – considers how incomes or earnings of

workers change from one year to a subsequent year over some transition period such as a year or possibly longer such as over five or ten years.

In the latter context, the analysis of income or earnings mobility has taken several approaches. One approach involves the use of a number of summary or aggregative descriptive statistics of income mobility, such as the proportion of people who changed their income group (up or down) from one period to the next. Such measures are called aggregative because they are single statistics that summarize mobility information across the whole distribution. A convenient summary of such measures can be found, for example, in Conlisk (1990) or Atkinson et al. (1992). An early application for Canada is Kennedy (1989).

A second approach to studying year-to-year income or earnings mobility is to characterize the earnings generation process of individual workers in terms of stochastic processes which can be estimated so the earnings processes can be simulated and total year-to-year earnings variation can be decomposed into permanent or long-run inequality and short-run transitory earnings or earnings instability (Gottschalk and Moffitt, 1994, 2009). Studies based on this approach either formulate a detailed parametric modelling technique of the underlying stochastic processes to the earnings variances decomposition (Baker and Solon, 2003; Morissette and Ostrovsky, 2005; and Ostrovsky, 2008, 2010) or follow a non-parametric random-effects technique (Beach et al, 2003, 2005, and 2010). Alone among these papers, Ostrovsky (2008) applies the analysis to immigrants' earnings in Canada.

A third approach to studying year-to-year income and earnings changes is to look at these changes in a more disaggregative fashion, i.e., how different mobility patterns occur over different regions of the income or earnings distribution. A natural way of implementing this is by

a transition matrix approach, which shows how people change income categories over a given transition period. Contributions to the application and interpretation of such income transition matrices include Atkinson (1983), Atkinson and Bourguignon (1992), Conlisk (1989), Markandya (1984), Shorrocks (1978a,b), and Yitzhaki and Wodon (2004). Major empirical transition matrix-based studies of income mobility in the United States include Fields and Ok (1999), Gottschalk (1997), Hungerford (2011), and the U.S. Department of Treasury (2007). Analogous Canadian empirical studies are far fewer and focus just on earnings mobility; these include Finnie (1997a, 1997b, and 1999), Beach and Finnie (1998, 2004), and Beach (2006). None of these studies, though, relates to immigrant earnings mobility.

Two Canadian studies that do look at disaggregative earnings adjustment of immigrants are Boudarbat and Lemieux (2010) and Abbott and Beach (2011). The former study uses unconditional quantile regression techniques to essentially estimate human capital-type earnings equations corresponding to the lower (10<sup>th</sup> percentile earnings level), middle (50<sup>th</sup> percentile or median earnings level), and upper (90<sup>th</sup> percentile) ends of the overall earnings distribution for the two earnings years of 1980 and 2000 in order to analyze the major determinants of the gap in earnings between immigrants and Canadian-born workers over these three regions of the earnings distribution.<sup>1</sup> The authors find that most of the growth in the immigrant earnings gap over this period occurred at the lower end of the earnings distribution; and that the amount of Canadian work experience, place of birth, and education contributed differently to the size of the immigrant wage gap among these three regions of the earnings distribution. Disaggregative analysis is thus essential to better understanding the immigrant earnings adjustment process over different regions of the distribution and among different skill groups.

Abbott and Beach (2011), a companion piece to the current paper, also uses longitudinal IMDB micro data to document the annual earnings outcomes of Canadian immigrants in the same four admission classes and for the same three landing cohorts as the present study. The earlier paper, however, looked at immigrant (real) earnings *levels and growth rates* over the immigrants' first ten year in Canada, whereas the current paper examines their earnings *mobility patterns* over the same periods. The earlier paper found, for example, that skill-assessed economic immigrants had consistently and substantially the highest annual earnings levels among the four admission classes for both male and female immigrants in all three landing cohorts. Family class immigrants and refugees had the lowest earnings levels. It also found discernable negative effects of the early 1990s recession on immigrants' earnings levels and growth rates, with the adverse effects more pronounced for male than for female immigrants. But the earlier study also provided growth rates of earnings by decile over the full immigrant earnings distribution, so that one can see that the earnings adjustment experience was indeed different over different regions of the immigrant earnings distribution. More specifically, the study found evidence of increasing earnings inequality at the lower end of the immigrant earnings distribution with years since landing in Canada as the lowest-earning immigrants lost ground relative to the middle-earning immigrants over their first ten years in Canada. On the other hand, earnings dispersion in the upper end of the immigrant earnings distribution tended to decrease over immigrants' first decade in the Canadian labour market as immigrants in the middle of the earnings distribution realized generally faster earnings growth than did the highest-earning immigrants.

### **3. Data Source and Immigrant Analysis Samples**

#### **3.1 Data Source and Three Immigrant Landing Cohorts**

This paper is based entirely on individual micro data from the longitudinal Immigration Data Base (IMDB) of Citizenship and Immigration Canada (CIC). This data base contains two broad categories of variables. (For a more detailed description of the IMDB data base, see Abbott 2003.) The first is each immigrant's landing characteristics obtained from landing documents. These characteristics are fixed or unchanged for each immigrant throughout the post-landing period. Included among the landing characteristics the IMDB contains 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), country of birth, and country of last permanent residence. Of the data on immigrant landing characteristics in the IMDB, this study uses only the information on immigrants' gender, landing cohort, and admission category.<sup>2</sup> The second category of variables in the IMDB is obtained from personal income tax returns and includes immigrants' annual income and earnings, their current place of residence, and their current marital status; unlike immigrants' landing characteristics, these variables can and do change year by year for each immigrant after landing.<sup>3</sup>

The principal outcome variable of this study is the level of real annual wage and salary earnings from paid employment<sup>4</sup> for each immigrant in each of the first ten full post-landing calendar years for which the immigrant filed a personal income tax return. To convert annual nominal earnings measured in current dollars into real annual earnings, we deflated 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; all annual earnings figures in this paper are thus expressed in terms of constant (inflation-adjusted) 2004 dollars.<sup>5</sup>

This study employs IMDB data on immigrants in the three annual landing cohorts for the calendar years 1982, 1988, and 1994. For each landing cohort, we assembled income tax data on each immigrant's annual wage and salary earnings in the year of their landing in Canada and in each of the first ten calendar years that immediately followed their landing year. For example, for the 1994 landing cohort, the first post-landing year is 1995, and the tenth post-landing year is 2004. For each of these three annual landing cohorts, the duration period of Canadian residence is measured by years since landing, or YSL, which varies from 1 for the first post-landing year to 10 for the tenth post-landing year.<sup>6</sup>

The 1982, 1988 and 1994 immigrant landing cohorts experienced different macroeconomic environments over their first post-landing decade in Canada, specifically different recessionary experiences at different times in their first ten post-landing years. The 1982 cohort landed during the quite sharp but short 1981-1982 economic recession, and its last three post-landing years coincided with the 1990-1991 recession, from which the recovery was both weak and prolonged.<sup>7</sup> The 1988 cohort encountered the 1990-1991 recession early in its first post-landing decade; its second, third and fourth post-landing years (1990, 1991 and 1992) coincided with the 1990-1991 recession and the weak labour market recovery from it. This quite severe recession was concentrated in the industrial heartland of the country where a substantial majority of immigrants settle. Recovery from the 1990-1991 recession was also protracted because of ongoing industrial restructuring following the FTA and NAFTA agreements and government fiscal consolidation of the middle 1990s as federal and provincial governments in

Canada acted to reduce their large budget deficits. The 1994 cohort landed as recovery from the early 1990s recession was strengthening, but the last three or four years of its first post-landing decade coincided with the economic slowdown of the early 2000s in Canada (which, unlike the United States, did not officially experience a recession following the IT bust of 1999).

The 1982, 1988 and 1994 immigrant cohorts were also landed in Canada under different immigration policy regimes. Changes to the point system in 1986 increased the weight assigned to long-run skill factors (education, work experience and language) and raised the pass mark applied to independent/skilled worker applicants. Apart from some minor changes to the points system in 1993 (which reduced the pass mark for independent/skilled worker applicants from 70 to 67 out of a maximum of 100), the only major legislative or regulatory change that occurred between 1988 and 1994 was the creation of the Immigration and Refugee Board on January 1, 1989, which clearly altered the procedures governing refugee determination and admission for the 1994 landing cohort compared to the 1988 and 1982 cohorts. Also notable is the substantial increase in the absolute and relative scale of Canadian immigration between 1982 and 1994. The total number of immigrants landed as permanent residents in Canada (and total immigrants as a percentage of the Canadian population) was 121,179 (0.5 percent) in 1982, 161,582 (0.6 percent) in 1988, and 224,397 (0.8 percent) in 1994. Thus, the total number of immigrants to Canada was 103,218, or 85.2 percent, greater in 1994 than it was in 1982. But over the 1985-1993 sub-period, the total level of annual immigration to Canada rose even more dramatically, from a low of 84.3 thousand in 1985 to a high of 256.7 thousand in 1993, an increase of about 205 percent.

Meanwhile, the number of *economic* immigrants landed increased by 305 percent, from 26.1 thousand in 1985 to 105.7 thousand in 1993. Thus the proportion of immigrants landed

under the skilled worker program (i.e., independent economic immigrants and their dependants) increased from 31.0 percent in 1985 to 45.6 percent in 1994 (while the proportion coming in under the family class category was correspondingly reduced). Also note that the total level of immigration was kept relatively high throughout the early 1990s recession and the ensuing slow recovery from that recession.<sup>8</sup>

A major limitation of the IMDB is that it does not contain data on non-immigrants. We therefore are unable in this study to compare directly the annual earnings distributions of immigrants and non-immigrants in Canada over a common period of time.

### **3.2 The Analysis Samples and Four Immigrant Admission Categories**

In order to operationally define the major admission categories in which we are interested, we adopted a six-group classification of the detailed immigrant category, or IMCAT, codes used by Citizenship and Immigration Canada to designate each immigrant's admission class in the IMDB; this classification is presented in detail in appendix Table A1. However, the present study includes only the major admission classes 1, 2, 3 and 4. These are defined as follows:

1. Independent Economic Immigrants are skilled-assessed principal applicants who were landed from abroad under no special programs. Over the time period covered by the analysis of this paper, these admissions occurred under the Federal Skilled Work Program.
2. Other Economic Immigrants include both (i) skilled worker principal applicants who were landed from within Canada or who were assessed under some special program and (ii)



spouses and dependants of skilled worker principal applicants. The numbers coming in under (ii) vastly dominate those coming in under (i).

3. Family Class Immigrants include all immigrants landed in the family class category.
4. Refugee Immigrants include all government-assisted refugees, privately-sponsored refugees, landed-in-Canada refugees, and refugee dependants.

The analysis samples for the three landing cohorts in this study were selected in two stages. In the first stage, a cohort master file was selected of all immigrants in a given landing cohort who were 20-54 years of age at time of landing, who filed at least one personal income tax return during the first eleven tax years following their landing in Canada (including the year of landing and the first ten post-landing years), and whose person-year records included no missing or invalid values for the key variables of this study. The resulting total numbers of immigrants in the IMDB master files for the three landing cohorts are approximately 54,385 for the 1982 cohort, 73,785 for the 1988 cohort, and 102,335 for the 1994 landing cohort.<sup>9</sup> In the second stage, the actual analysis samples for the three landing cohorts were further restricted to include only the person-year records of those immigrants in the four admission classes defined above and whose real annual wage and salary earnings in their first and tenth calendar years were at least \$1000 (in 2004 dollars).<sup>10</sup>

The analysis samples employed in this study thus consist of immigrants in the above four admission classes who were landed in Canada in the calendar years 1982, 1988 or 1994, who were 20-54 years of age at time of landing, and who filed a personal income tax return for the first and tenth full calendar years following landing on which they reported real annual wage and salary earnings of at least 1,000 dollars (in constant 2004 dollars).

There are therefore several reasons why some immigrants in the four aggregate admission classes may be excluded from our analysis sample for their landing cohort. The sample inclusion criteria we adopt exclude immigrants who did not file a Canadian personal income tax return in their first and tenth full calendar post-landing years; they therefore exclude immigrants who leave Canada for any reason following landing and therefore cease filing Canadian personal income tax returns. These would include return migrants, i.e., immigrants who, subsequent to arriving in Canada, decided to return to their country of origin (perhaps because of a lack of economic success in Canada), and onward migrants, i.e., those immigrants who move on to third countries, principally the United States, often in search of better economic opportunities. There are good reasons to think that such sample attrition is non-random across immigrants, but a detailed analysis of it would constitute a separate study. Appendix Table A2 tabulates the total number of immigrants in the cohort master file for each landing cohort by the tax year of each immigrant's last person-year record. Table A2 shows that approximately 80 percent of the landed immigrants in each cohort master file actually filed a Canadian income tax return in their tenth post-landing year, meaning that about 20 percent of the immigrants in each cohort master file were not observed in their tenth post-landing year. Of this 20 percent, some immigrants may have left Canada prior to the last year of their cohort's first post-landing decade, while others were still resident in Canada but simply did not file a Canadian income tax return for that tenth post-landing year.

The sample selection criteria also excluded from the analysis sample for each landing cohort those immigrants who filed an income tax return on which they reported positive wage and salary earnings for a given post-landing year but whose real annual earnings for that year

were below the minimum real annual earnings cutoff of \$1,000 in 2004 dollars. The proportion of all male immigrants with positive annual earnings whose real annual earnings were less than the minimum earnings cutoff ranged between 1.4 and 3.0 percent across the ten post-landing years for the 1982 landing cohort, between 1.5 and 3.6 percent for the 1988 landing cohort, and between 3.9 and 5.5 percent for the 1994 landing cohort. The proportion of all female immigrants with positive annual earnings whose real annual earnings were less than the minimum earnings cutoff ranged between 4.6 and 17.1 percent for the 1982 landing cohort, between 4.3 and 6.6 percent for the 1988 landing cohort, and between 7.1 and 14.3 percent for the 1994 landing cohort. For each of the three landing cohorts, the proportion of all immigrants with positive earnings that was censored by the minimum real earnings cutoff was substantially smaller for male immigrants than for female immigrants. Our sample inclusion criteria thus involve some censoring of immigrants with very low real annual earnings; however, their intent is purposely to limit the analysis to those immigrants who had a strong attachment to the labour market for paid employment.

## **4. The Immigrant Earnings Transition Matrix and Earnings Mobility**

### **4.1 A Transition Matrix Approach**

The general approach we take to measuring immigrant earnings mobility in this paper is based on the transition matrix. Our implementation of this approach consists of two main elements: the transition matrix itself, which provides disaggregated information on individuals' earnings mobility within an 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.

A *transition matrix* is a two-dimensional array that shows how individual workers become redistributed among ordered earnings categories over some period of time. That is, it shows how workers in each of several ordered earnings categories move among these categories over some subsequent period of time (Atkinson et al., 1992). For example, 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 lowest to the highest) 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 starting in earnings category  $i$  in year  $t$  will end up being in earnings category  $j$  in year  $t+s$  – it is the proportion (or percentage) of workers 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 of the transition matrix sum to 1 (or 100 in the case of percentages as used in this paper), then the array is called a conditional transition matrix. This is what we use in the present study and is illustrated in Table 1 for 9-year transition matrices (i.e.,  $s=9$ ), separately for male and female immigrants in the 1994 landing cohort (i.e., for the ten years 1995-2004).

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 distributions 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 earnings distribution. We adopt a variant of the latter option used, for example, by Beach and Finnie (2004) and Beach (2006). Specifically, we define six ordered earnings categories (i.e.,  $K = 6$ ) in relation to the median level of real annual earnings (separately for men and women) for the beginning year ( $t$ ) and final year ( $t+s$ ) in the transition interval in our analysis samples:

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).

Note that the analysis samples include those workers with above-minimum reported earnings levels for just the two interval end years ( $t$  and  $t+s$ ); they need not have reported earnings for every year in the transition interval. Appendix Table A3 provides the median real earnings levels used in these calculations. The proportions of workers appearing in each of these earnings categories for the first years for all immigrants are provided in Appendix Table A4.

The figures in the Table 1 transition matrices are readily interpretable. For example, among male earners in the 1994 landing cohort who had earnings in the lowest earnings category (VL) in their first full year after landing (1995), 14.09 percent remained in this lowest earnings category nine years later in 2004 – and thus 85.91 percent moved up one or more earnings categories over the nine-year transition interval. 13.18 percent moved up exactly one earnings

category, 31.65 percent moved up by two categories, and indeed 8.20 percent managed to move up all the way from the lowest to the highest earnings category after nine years in Canada.

Looking at the high middle (HM) earnings category in 1995, one can see that 37.31 percent of males in this earnings category experienced a drop by one earnings category after nine years, while 16.94 (=10.40 + 6.54) percent saw their earnings go up by one or more categories. For female immigrants in Table 1(b), 38.84 percent of 1994 arrivals who began working in the top earnings category remained there after nine years, while 61.16 (= 100 - 38.84) percent saw their early earnings decline by one or more earnings categories at the end of nine years in Canada. In general, the probabilities of moving up one or more categories are given by figures above the principal diagonal, and the probabilities of moving down the distribution are given by figures below the principal diagonal.

To repeat, note that these mobility figures all relate to *relative* earnings mobility (i.e., relative to what happens to the immigrants' median real earnings level over the 9-year transition interval). So if the median has risen over this period, a slip in one earnings category may well be consistent with a rise in actual real earnings levels of workers in this category, though not as rapidly as that of the median earnings level over this period.

This paper also employs 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, calculated as the average of the staying probabilities or diagonal elements in heavy font in Table 1;

2. The average mobility rate or average probability of moving one or more earnings categories, calculated as the average value of 100-immobility ratio averaged across all six earnings categories;
3. The average probability of moving *up* one or more earnings categories, calculated as the sum of the moving up probabilities (within a given row of the transition matrix) averaged across all six earnings categories;
4. The average probability of moving *down* one or more earnings categories, calculated as the sum of the moving down probabilities (within a given row of the transition matrix) averaged across all six earnings categories;
5. The Prais mobility index (explained below);
6. The average size of upward jump, calculated as the weighted average (or expected value) of staying or one or more upward category changes then averaged across all six earnings category rows; and
7. The average size of downward jump, calculated as the weighted average (or expected value) of staying or one or more downward category changes then averaged across all six earnings category rows.

Obviously, the average mobility rate is the sum of the average probabilities of moving up and of moving down.

The Prais mobility index (1955) (Shorrocks, 1978b) is one of the most widely used scalar measures of mobility. It can be computed as

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

where  $K$  denotes the number of earnings categories (i.e., number of rows or columns) of the transition matrix  $P$  and  $\text{tr}(P)$  denotes the trace of  $P$  (i.e., the sum of the empirical probabilities on the principal diagonal of  $P$ ). Shorrocks (1978b) 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  $\text{tr}(P) = K$ ; and  $M = 1$  corresponds to perfect mobility, in which case all  $K$  rows of  $P$  contain exactly the same vector of empirical probabilities and  $\text{tr}(P) = 1$ .

Note also the linear relationship between the average mobility rate (measure #2 above) and the Prais index (#5). The average mobility rate is

$$100 - [\text{tr}(P) / K]$$

where  $\text{tr}(P)$  is the trace of the transition matrix  $P$ . For a given  $K$ , then, any factor affecting the elements of  $P$  will change the average mobility rate and the Prais index in an exact linear fashion.

These alternative summary measures of mobility are displayed below the transition matrices of Table 1.

Mobility plays two distinct roles in this study. Overall measures of earnings mobility such as measures 1,2, and 5 capture what the literature calls positional or reranking mobility; i.e., the degree to which individuals change their relative rankings (either up or down) across earnings categories over a period of time. If everyone remained in the same earnings category they started off in, then observed cross-sectional earnings inequality is indicative of long-run earnings status and a highly stratified labour market with widely unequal earnings opportunities. If, on the other hand, overall earnings mobility is high so that everyone gets to experience times of low, middle and high earnings levels over a period of time, then observed cross-sectional



earnings inequality is less indicative of long-run earnings status and there is much greater opportunity to move around the earnings distribution. Thus overall measures of earnings mobility have a normative or social welfare aspect that tempers what concern we place on observed changes in earnings inequality in the labour market and on differences in economic opportunities available to different individuals in the labour market (Shorrocks, 1978a; Buchinsky and Hunt, 1996; Hungerford, 2011).

The second role played by earnings mobility in this paper may be referred to as directional mobility and is captured by measures 3, 4, 6, and 7. These measures look at separate upward movements within the immigrant earnings distribution or separate downward movements. They provide greater structural detail on the predominant nature of a given degree of overall earnings mobility, especially for various subgroups of the immigrant population. They can also be useful in raising policy flags about those groups who may be losing out over time, and can be helpful in interpreting various economic models and hypotheses concerning immigrant workers' earnings adjustment process following their landing in Canada.

## **4.2 Long-Term Immigrant Earnings Mobility for the 1994 Landing Cohort**

### *4.2.1 Positional or Overall Earnings Mobility*

The figures in Table 1 show that the earnings of immigrants over a nine-year period are quite dynamic. Excepting the top earnings category, the probabilities of moving up or down one or more categories vary from 60.3-85.9 percent for male immigrants and from 68.65-86.9 percent for female immigrants in the 1994 landing cohort. Surveying the diagonal elements in Table 1, one can see that there is a natural grouping of immigrant earnings categories into three

groups: the bottom two categories ( VL and LO) which manifest very high (largely upward) earnings mobility, the middle three categories (LM, HM, and HI) which show a lower degree of earnings mobility, and the very top category (VH) which demonstrates very low (downward) mobility. For male immigrants, the average probability of moving declines with earnings from 85.1 percent for the bottom group, to 70.6 percent for middle earners, and to 48.6 percent for top earners. For female immigrants, the decline in mobility across earnings groups is similar: from 85.6 percent to 75.8 percent, and to 61.2 percent.

Indeed, the degree of earnings mobility is somewhat higher for immigrants within their first decade in Canada than earnings mobility as a whole in the Canadian labour market. Eight-year earnings transition matrices for men and women as a whole in the Canadian labour market (constructed in similar fashion to Table 1) are provided for comparison in appendix Tables A5 and A6 for 1982-90 and 1991-99, respectively, and a matrix of 12-year transitions for men and women as a whole over 1982-94 appears in Table A7. Again excepting the top earnings category, the probabilities of moving up or down one or more categories (averaged across Tables A5 and A6) range from 60.8-83.7 percent for men and from 54.1-75.8 percent for women. If one again calculates the average probability of moving (up or down) for the above three earnings groupings – averaged across Tables A5 and A6 – one can see that mobility also declines across earnings groups for workers as a whole in the Canadian labour market. For women, earnings mobility declines from 74.6 percent for the bottom group to 56.9 percent for the middle group, and to 35.0 percent for top earners. For male workers in the labour market, mobility correspondingly declines from 81.8 percent to 63.4 percent and to 27.8 percent.

Thus the degree of higher earnings mobility for immigrants than for workers as a whole in the labour market varies dramatically by earnings groups:

	<u>Bottom Earnings Group</u>	<u>Middle Earnings Group</u>	<u>Top Earnings Group</u>
Males	+ 3.3 points	+ 7.3 points	+ 20.9 points
Females	+ 11.1 points	+ 19.0 points	+ 26.1 points

That is, the degree of earnings mobility experienced by immigrants in their first decade in Canada compared to workers as a whole in the Canadian labour market is much greater among middle and top earners than among lower-earning workers in the earnings distribution. The mobility gap is also larger for women than for male earners in the labour market.

This greater degree of earnings mobility among immigrants than for earners in the Canadian labour market as a whole is further supported by looking at the summary measures of mobility. The average Prais mobility index over nine years for male and female immigrants is 0.862 for males and 0.920 for females. Not only are these higher than for both the eight-year matrices in Tables A5 and A6, but also exceed the Prais mobility values for the 12-year transition matrices in Table A7 ( $M = .826$  for men and 0.780 for women as a whole). A similar result is found for the average probability of moving either up or down one or more earnings categories – 71.8 percent (immigrant men) and 76.7 percent (immigrant women) over nine years vs. 68.9 percent for male earners as a whole and 65.0 percent for female earners as a whole over a twelve-year period.

#### 4.2.2 *Directional Earnings Mobility Patterns*

A more dramatic aspect of immigrant earnings mobility, though, is that it incorporates a much greater likelihood of (relative) earnings decline than for workers as a whole in the Canadian labour market. Table 2 displays the separate average probabilities of moving up one or more earnings categories and average probabilities of moving down one or more categories for the immigrant transition matrices in Table 1 and for the earnings transition matrices for workers as a whole in the Canadian labour market (listed in Tables A5-A7). For males, the average probability of immigrants moving up one or more earnings categories over the transition period is slightly lower than for a workers as a whole. But for both male and female immigrants, the average probability of moving down one or more categories is considerably higher than for workers as a whole in the Canadian labour market. What is essentially driving this result is the relatively large probabilities of moving down one earnings category (i.e., the diagonal row of immediately lower off-diagonal elements in Table 1). As a consequence, the average net probability of moving up is dramatically lower for immigrants – both male and female – than for earners as a whole in the Canadian labour market.

Third, mobility patterns differ over different regions of the immigrant earnings distribution. There is much greater mobility up out of the bottom end of the earnings distribution than down from the top end. Table 3 breaks down the mobility results in Table 2 by three earnings groups – Bottom earners (earnings categories VL and LO), Middle earners (LM, HM, and HI), and Top earners (VH) – for the 1994 immigrant landing cohort and for the 1991-99 earnings transitions for earners as a whole in Canada (corresponding to columns 2 and 4 in Table 2). Not surprisingly, in all cases, the average probability of moving up declines from Bottom to

Top earnings groups, while the average probability of moving down slows the reverse pattern. Now consider each of these mobility components separately. The average probability of moving up from the Bottom group is somewhat higher among immigrants than among workers as a whole – more so for female than for male workers – while the average probability of moving up for the Middle group is substantially lower among immigrants than for workers as a whole – more so now for male than for female workers.

But the biggest differences in mobility between immigrant earners and all earners occur in their average probabilities of moving down one or more earnings categories. The average probability of moving down for both Middle and Top earners is much greater among immigrants than among workers as a whole – more so for females than for males. When one then adds these two directional mobility effects, the average probability of moving (either up or down) is higher among immigrants than for workers as a whole for all earnings groups (and markedly so for Top earners). But this broad pattern of greater earnings mobility among immigrants is largely driven by immigrants' much higher average probability of moving down the earnings distribution. Furthermore, when one subtracts the downward from the upward mobility measures to get a net dominant directional measure of earnings mobility, one finds even stronger results. The average *net* probability of moving up is somewhat larger in a positive direction among immigrants (compared to workers as a whole) in the Bottom earnings group. But the net probability is dramatically greater in a *negative* direction among immigrants (compared to all workers) over the Middle and Top earnings groups for both male and female workers in the Canadian labour market.

#### 4.2.3 Differences in Earnings Mobility Patterns Between Male and Female Immigrants

Fourth, there are a number of differences in the earnings mobility patterns between male and female immigrants in Tables 1-3. The average probability of moving and the Prais mobility index are both higher for female than for male immigrants, and this is opposite to the case for male and female workers as a whole in the Canadian labour market. Thus the gap in earnings mobility between immigrants and workers as a whole is greater among female workers than among male workers across all earnings groups. Indeed the probability of moving is higher for female than for male immigrants in every earnings category, i.e., in every row of Table 1. In the very highest earnings category, the probability of staying is dramatically higher for male immigrants than for female immigrants. But this higher mobility among female immigrants is largely due to a higher average probability of moving down one or more earnings categories over the nine-year transition period. Consequently, the average net probability of moving up is markedly higher for male (3.90 percentage points) than for female (0.60 percentage points) immigrants. More specifically, the average probability of moving up is pretty similar between male and female immigrants across all three earnings groups, but the average probability of moving down is greater for female than for male immigrants over the Middle and Top earnings groups (and particularly so among Top earners). The average size of jumps across earnings categories – both upward and downward – is also larger for female than for male immigrants. That is, when female immigrants move up, they move up further than male immigrants; and when female immigrants move down, they move down further than do male immigrants.

### **4.3 Shorter-Term Earnings Mobility for the 1994 Landing Cohort**

This study also looks at shorter-interval earnings transition matrices in order to confirm the general mobility patterns identified above and to investigate how earnings mobility varies with length of time in the Canadian labour market (or years since landing, YSL).

Tables 4 and 5 – laid out in similar fashion to Table 1 – provide earnings transition matrices for four-year transition intervals (i.e.,  $s=4$ ) for the 1994 immigrant landing cohort. Table 4 refers to the initial years after landing (i.e., 1995-1999), while Table 5 refers to the later post-landing years 2000-2004. They thus cover the first half and second half of the full nine-year transition period of Table 1.

The first thing to notice in Tables 4 and 5 is that earnings mobility over shorter intervals is lower than over longer intervals where workers have a longer period in order to adjust to their new labour market environment in Canada. The probabilities of staying within each earnings category or row of Tables 4 and 5 are uniformly higher than their corresponding figures in Table 1. Not surprisingly, then, the average probabilities of moving one or more earnings categories are lower than in Table 1, as are also the Prais mobility index, the average probabilities of moving up and moving down, and the average sized jumps are also reduced.

Second, it is still the case with four-year transition matrices that earnings mobility is higher for female immigrants than for male immigrants. And once again, a major portion of this gap – almost half – comes from female immigrants having a larger average probability of moving down one or more earnings intervals. It is also still the case that mobility out of the bottom end of the immigrant earnings distribution is much greater than mobility out of the top end. Those who start out with relatively high earnings have a greater likelihood of retaining these

higher earnings levels, whereas there may be many reasons why immigrants start off with low earnings levels and then move up the earnings distribution.

Third, earnings mobility decreases dramatically with years since landing (YSL). The probability of staying in a given earnings category is uniformly larger row by row in Table 5 than in Table 4. Averaged across rows, then, the average probability of moving and the Prais mobility index both decline dramatically from Table 4 to Table 5. And again, so also do the average probabilities of moving up and moving down and the average jump size. That is, the earnings adjustment of immigrants – for both men and women – occurs much faster or is more concentrated in the earlier years immediately after landing than in the later years after entering the Canadian labour market. Also, the average probability of moving down one or more earnings categories decreases across years since landing more strongly than the average probability of moving up one or more earnings categories, so the average net probability of moving up substantially rises the longer immigrants remain working in Canada.

The mobility adjustment pattern with number of years since landing is further highlighted in Table 6, which summarizes average mobility information from Tables 4 and 5 as well as earnings mobility results from three sets of one-year earnings transition matrices for years 1 to 2, 5 to 6, and 9 to 10 over the first post-landing decade of immigrants again in the 1994 landing cohort. The actual transition matrices for these sets of one-year transition intervals appear as Tables A8-A10 in the appendix. Again, the degree of earnings mobility is smaller over one-year transition intervals than over longer intervals. But the main point to note in Table 6 is again how the degree of earnings mobility declines with YSL; i.e., it declines markedly the longer immigrants have been working in the Canadian labour market. Or alternatively put, immigrant



earnings adjustment is most rapid in the early years after landing in Canada and thereafter attenuates on average. This strong finding is very much supportive of the early Chiswick (1978) and Borjas (1985) hypotheses for immigrant earners in their adopted country's labour market. But the latter models do not reflect the quite remarkable amount of downward earnings mobility that is a major feature of immigrants' earnings adjustment over their first decade in Canada. Such earnings adjustment models should better recognize the variability of earnings over this adjustment process and the implications of this variability for the occupation and employment choices that immigrants make. To do this, such models should also recognize institutional restrictions in the labour market and aspects of Canadian immigration policy. So, for example, the current point system under which the federal Skilled Worker Program operates puts a lot of weight on high levels of education, yet professional credential and accreditation restrictions may well result in well educated immigrants having to take jobs below their skill or training levels in order to make ends meet. Empirical analysis of mean or median earnings profiles of post-landing immigrants – such as in Abbott and Beach (2011) – just do not provide enough richness on the immigrant earnings experience to properly model and understand the various issues at play in this adjustment process.

Also the fall-off in the rate of adjustment is not markedly different between male and female immigrants. And, as can be seen, the adjustment of earnings is not all upward. On net, earnings increase in the sense of moving up across earnings categories. But the average probability of moving down is only 1.5 - 8 percentage points lower than the average probability of moving up. Clearly, a great deal of dynamic adjustment is occurring in immigrant earnings over this period – both down as well as up – though the average probability of moving down

generally declines faster as YSL advances than does the average probability of moving up, with the result that the average net probability of moving up generally rises with YSL (though this tails off by the end of the immigrants' first post-landing decade).

It is also important to note, though, that a downward shift across earnings categories need not mean an actual decline in real earnings levels since each of the earnings categories in this analysis is relative to immigrants' median earnings levels which have been shown in Abbott and Beach (2011) to consistently rise with years since landing (YSL) in Canada. All the results here are thus relative to the median of immigrants' earnings.

Finally, does earnings adjustment occur faster over different regions of the immigrant earnings distribution? This is addressed in appendix Table A11 which shows summary mobility rates by earnings group for the initial and final 4-year transition sub-periods for the 1994 immigrant landing cohort. Figures in parentheses in column (2) of the table are the percentages that the initial 4-year mobility values are of the full 9-year mobility values, and figures in square brackets in column (3) are the years 6-10 mobility values as a percentage of the initial years 1-5 mobility values.

Three results are evident. First, turning to the average probability of moving (either up or down), one can see that the speed of earnings adjustment is fastest in the Bottom earning group and slowest at the Top. But, second, there is still a considerable amount of earnings adjustment going on in years 6-10 for the Bottom and Middle earnings groups. Basically, those arriving at the upper end of the earnings distribution start off with well-paying stable jobs, while it is those starting off at the lower or mid earnings ranges who have to make job changes and perhaps learn new North American labour-market-relevant skills (such as greater fluency in either English or

French) in order to move ahead. Third, the average probability of moving down falls off much faster than the average probability of moving up (one or more earnings categories), and in the Middle earnings group the latter continues almost as actively in years 6-10 as in the earlier years 1-5.

## **5. Immigrant Mobility Differences Across Immigrant Admission Classes**

This section provides evidence on different immigrant earnings mobility patterns across the four broad immigrant admission classes identified in section 3.2: independent economic immigrants (i.e., principal applicants under the federal Skilled Worker Program), other or tied economic immigrants (i.e., largely spouses and dependants accompanying principal applicant immigrants), family class immigrants, and refugee class immigrants. Independent economic immigrants have to pass the point system screen and are admitted on the basis of their evaluated labour market skills. Immigrants in other classes are admitted for other reasons and hence may face more difficult adjustments getting ahead in the Canadian labour market. Canadian immigration policy the past several years has also seen a distinct shift in favour of economic immigrants as opposed to family class immigrants and refugees (Beach et al., 2011), so it is of interest to investigate how well these different immigrant classes have done in the Canadian labour market.

### **5.1 Positional and Directional Mobility Differences across Admission Classes**

Tables 7, 8, 9, and 10 present nine-year transition matrices for the four respective admission classes of immigrants, again for the 1994 landing cohort. One can see immediately

that – for both male and female immigrants – independent economic immigrants are least likely to remain at the bottom end of the earnings distribution and are the most likely to remain at the top end. On the other hand, family class (for men) or refugee class immigrants (for women) are most likely to stay at the bottom earnings category, while refugee class immigrants (for men) or family class immigrants are least likely to remain within the top earnings category. The key earnings mobility information from these tables is more efficiently summarized in Table 11(a) for the 1994 landing cohort. But the differences in patterns across landing cohorts are sufficiently marked that mobility rates averaged across the three landing cohorts are presented in Table 11(b). It is on these latter results that the discussion will focus.

Consider first the differences in positional mobility among the four immigrant admission classes. The principal finding here is that – for both men and women – refugees generally exhibit the greatest degree of overall earnings mobility over their first ten years in Canada as measured both by the average probability of moving (either up or down) and by the conventional Prais index. Also for both male and female immigrants, independent economic class immigrants exhibit the lowest degree of overall earnings mobility over their first decade in Canada, and family class immigrants display the second lowest degree of positional earnings mobility – again for both men and women.

Turn next to differences in directional mobility of earnings across the four immigrant admission classes. The single most consistent finding here is that – for both men and women – independent economic immigrants exhibit the greatest upward earnings mobility and the least downward earnings mobility over their first ten years in Canada. They also had the largest upward earnings jumps and the smallest downward earnings jumps. They thus show markedly

the highest average net probability of moving up to a higher earnings category over this ten-year interval. On the other hand, family class immigrants – both men and women – have the lowest upward earnings mobility among the four admission categories and the highest downward earnings mobility and thus markedly the lowest (indeed negative) average net probability of moving up the immigrant earnings distribution. They also show the lowest upward earnings jump and the second largest downward earnings jump. Immigrants in the refugee category are generally less likely to move up to a higher earnings category than independent economic immigrants, but are more likely to move up to a higher earnings category than family class immigrants of the same sex. Again with respect to the net probability of moving up to a higher earnings category, refugee immigrants are always less likely to move up than independent economic immigrants, but are typically more likely to move up than family class immigrants of the same sex.

## **5.2 Earnings Adjustment Rates across Admission Classes**

But how do earnings adjustment patterns across the different immigrant admission classes change with the number of years since landing in Canada? These results are presented in Table 12 which compares earnings mobility patterns over the first five years after landing in Canada with those over the last five years of their initial decade in the Canadian labour market. There is again a quite evident fall-off or decline in all of the first four earnings mobility measures with years since migration to Canada for all four admission classes. The figures in parentheses in Table 12(a) are the ratios of mobility measures over the first five years of the transition interval relative to those in Table 11 for the full ten-year interval. As can be seen, there is almost as much

earnings mobility over the first five years as for the full post-landing decade as a whole. The figures in parentheses in Table 12(b) show the ratios of mobility measures over the last five years of the transition interval relative to those for the first five-year interval. In this case, the later mobility measures are only 61-82 percent of the former measures.

Across immigrant admission classes, there is not much difference in the rate of fall-off in earnings mobility in terms of the average probability of moving or Prais index as a whole (see Table 12(b)). But for both men and women, the average probability of moving up falls off the fastest for independent economic class immigrants and falls off the least for refugee class immigrants. On the other hand – again for both men and women – the average probability of moving down falls off the least for independent economic immigrants and falls off fastest for refugees. That is, independent economic immigrants start off with relatively high earnings levels on average and move up strongly over their first five years in Canada, but then this rate of advancement attenuates. Refugees, on the other hand, start off with very low average earnings levels and move up relatively weakly over their first five year, but this rate of advancement tails off the least over the next five years in Canada. In sum, independent economic immigrants show the shortest or fastest adjustment patterns after landing in the Canadian labour market, while refugees have the slowest or longest adjustment pattern. Thus if Canada is going to continue admitting substantial numbers of refugee immigrants each year, it should have in place a set of transition policies that appropriately deal with this lengthy period of adjustment to the Canadian work environment. Also, leading models of the immigrant adjustment process such as Chiswick (1978) and Borjas (1985) are most relevant to independent economic class immigrants and perhaps refugees, but do not adequately recognize the role of the household framework in the

immigrant earnings adjustment that would be more appropriate for other economic and family class immigrants.

## **6. Earnings Mobility Differences Across Immigrant Landing Cohorts 1982, 1988 and 1994**

So far, earnings mobility results are presented for only the landing cohort of immigrants who arrived in Canada in 1994, and we have followed them through their first decade in Canada until 2004. This was the most recent data available at the time of our computer work on the IMDB immigrant database. The latter begins, however, with data going back to 1982. So, in order to examine how robust the empirical results already reported are, we also look at earnings mobility patterns for two other immigrant landing cohorts: for those arriving in Canada as permanent residents in 1982 and for those landing in the intermediate year 1988. Each of these immigrant cohorts is also followed for ten years from the IMDB.

As has already been discussed in section 3.1 above, these three landing cohorts faced somewhat different environments which could, in turn, impact their earnings outcomes their first ten years in Canada. They faced somewhat different immigration policy regimes in terms of number of arrivals, the source country mix of immigrant landings, and the human capital characteristics of the different landing cohorts. They also faced different macro-economic environments in the Canadian labour market, particularly in terms of economic recessions and growth. Over the period covered by these three landing cohorts (1982-2004), the Canadian economy experienced two quite severe recessions – the sharp but fairly short recession of 1981-82 and then the 1990-91 recession from which the recovery was both weak and prolonged. Thus,

the 1982 cohort landed in a period of relatively high unemployment and weak job prospects but then experienced relatively solid growth most of the following years, the 1988 cohort experienced a severe recession just as it was starting to get established in the Canadian labour market, while the 1994 cohort arrived amid a weak labour market but didn't actually face a formal recession over its decade of earnings adjustment in Canada. Abbott and Beach (2011) found that the median earnings profiles of these three cohorts indeed showed somewhat different outcomes. So it is of interest to investigate whether their patterns of earnings mobility also appear to show some differences.

### **6.1 Changes in Earnings Mobility over Time**

The full nine-year transition matrices for the 1982 and 1988 immigrant landing cohorts are presented in Tables 13 and 14, respectively. The aggregate earnings mobility measures for all three landing cohorts are summarized in Table 15. Again in Table 15, measures of positional earnings mobility – average probability of moving one or more earnings categories and the traditional Prais index – are higher for female than for male immigrants. But it is also the case that the sizes of both the average upward jump and average downward jump over the nine-year transition intervals are higher for female than for male immigrants as well.

For men, once one nets out the dampening effect of the early nineties' recession on the 1988 landing cohort, there is not much difference in overall mobility measures (average probability of moving and the Prais index) between the 1982 and 1994 cohorts of immigrants. Any changes, however, are not uniform across the earnings distribution. Mobility has increases slightly at the bottom end of the immigrant earnings distribution, but decreased at the top end.



Any small decline that is present is the result of an increase in the average probability of moving up (and of upjump size) and a decrease in the average probability of moving down (and of downjump size as well). So the average net probability of moving up has increased noticeably over this period.

For women, on the other hand, there has been an increase in overall earnings mobility between the 1982 and 1994 landing cohorts. In this case the rise in mobility also occurs across all earnings categories of the immigrant earnings distribution. This overall rise in turn follows from increases in both the average probability of moving up (and of the upjump size) and the average probability of moving down (along with the downjump size as well). The result is virtually no change or only a slight rise in the average net probability of moving up over the period.

The rather weak and differing patterns of change in positional immigrant earnings mobility (rather than the more clear-cut directional mobility effects) may reflect a number of conflicting changes going on that affect immigrant outcomes. Higher education levels are generally associated with greater earnings stability. So one may expect that the marked increase in average levels of education of immigrants over this period would lead to reduced overall immigrant earnings mobility. The Canadian labour market has also shown widening skill differentials in workers' earnings, so there may be less opportunity for workers to move between earnings categories, thus also reducing overall immigrant earnings mobility over this period. On the other hand, there has been a general rise in total earnings variance (for both men and women) in Canada since 1982 (Beach et al., 2010) which has been driven essentially by a quite dramatic rise in permanent or long-run earnings inequality – particularly so for men in the labour market. This in turn reflects growing globalization, out-sourcing and international competitiveness,

restructuring based on free-trade agreements, greater reliance on more flexible non-standard work arrangements, on-going skill-biased technological change based on growing use of chip-based information technology, reduced regulatory protection in a number of sectors, declining proportion of jobs in manufacturing (a traditional entry point of immigrants into the Canadian work force), and waning influence of private-sector unions. So there are a number of major on-going factors at work in the Canadian labour market which could have significant and conflicting effects on overall earnings mobility of immigrants to Canada.

## **6.2 Mobility Effects of the Early Nineties Recession**

The overall mobility patterns for the 1988 landing cohort stand out as quite different from the other two immigrant arrival cohorts, suggesting that economic recessions have quite a discernable negative or dampening effect on immigrants' earnings mobility. The average probability of moving one or more earnings categories and the Prais mobility index are substantially attenuated – for both male and female immigrants – for the 1988 cohort who experienced the quite severe 1990-91 recession early after arriving in Canada. Indeed, with only three exceptions, the individual principal diagonal elements (i.e., the separate probabilities of staying in the same earnings category) for the 1988 transition matrices are all larger than their corresponding elements for the other two landing cohorts for both male and female immigrants. Also, with only two exceptions, the average probability of moving up, the average probability of moving down, and both average size of jump measures are attenuated for the 1988 landing cohort as well. Evidently, the effect of a marked recession and economic slowdown is to reduce (relative) earnings mobility of immigrants in Canada. The two exceptions are for the average

probability of moving up and the average size of upward jumps among male immigrants in the 1988 landing cohort where no recessionary shock is evident. This may reflect a compositional shift in the admission class mix of the 1988 cohort.

Since the early nineties recession falls within the first half of the 1988 cohort's transition interval, it may be useful to examine earnings mobility patterns for the initial four-year transitions for all three immigrant landing cohorts (i.e., 1983-87 for the 1982 landing cohort, 1989-93 for the 1988 cohort, and 1995-99 for the 1994 arrival cohort). These results are presented in Table 16, with a similar lay-out as in the previous table. As is evident, the previous nine-year mobility patterns are also present here. The dampening of the mobility measures in the case of the 1988 landing cohort is also noted (along with the same two exceptions), but is indeed more marked over the 1989-93 transition period in Table 16 than over the full nine-year transition period of Table 15.

Mobility patterns are also provided for the post-landing years 6-10 in Table 17. As expected, all earnings mobility rates are smaller than for the initial four-year transition process in Table 16. Interestingly, though, the mobility rates of males in the 1988 landing cohort have shifted above those in the other cohorts, while the female mobility rates in the 1988 cohort have shifted below those in the other cohorts. That is, the earnings of male immigrants appear to snap back much faster after a major recessionary shock than the earnings of female immigrants.

### **6.3 Cohort Differences in Earnings Group Mobility**

Is there any difference in the earnings mobility patterns by earnings groups across the three landing cohorts of immigrants? More specifically, is the previous finding of a higher

average probability of moving (either up or down) for immigrants in the 1994 landing cohort experienced by all three earnings groups of this cohort? This is examined in Table 18 where the three columns refer to the different landing cohorts and the three rows for each mobility measure refer to the different immigrant earnings groups. Basically, the answer to the above motivating question is yes. The average probability of moving (either up or down) for the 1994 landing cohort is indeed higher for all earnings groups than for the earlier two cohorts of immigrants, except for Top earnings males. This higher average probability of moving is driven by a higher average probability of moving up in the case of men, but by a higher average probability of moving up for Bottom and Middle group women and by a higher average probability of moving down for Middle and Top group immigrant women.

The effects of the early nineties recession can also be seen over different regions of the immigrant earnings distribution. For males, the recession reduced the average probability of moving (either up or down) for the Bottom and Middle earnings groups, and this was driven by a reduced average probability of moving up. For female immigrants, the recession reduced the average probability of moving for Middle and Top earnings groups, and this was driven by a reduced average probability of moving down as the entire earnings distribution was shifted down.

Finally, how has economic growth (and hence labour market conditions) affected the opportunities for moving ahead? The 1994 cohort's first post-landing decade in Canada (1995-2004) was characterized by the highest 10-year growth of real GDP (34.8 percent) and the lowest 10-year average unemployment rate (8.06 percent) among the three landing cohorts, and did not include an economic recession. The 1988 cohort's first post-landing decade in Canada (1989-

1998) was characterized by the lowest 10-year growth of real GDP (20.3 percent), and the post-landing decade following the 1982 cohort's landing saw a growth of 26.2 percent, mid-way between the other two cohorts. Correspondingly, appendix Table A3 shows that immigrants' median real earnings rose fastest for the 1994 landing cohort (103.4 percent for females and 101.2 percent for males), most slowly for the 1988 landing cohort (61.6 percent and 52.7 percent, respectively), and by an intermediate amount for the 1982 cohort (89.3 percent and 90.8 percent). So have immigrant earnings mobility rates been affected as well?

Perhaps the easiest way to consider such economic growth effects on earnings mobility over different regions of the immigrant earnings distribution is to imagine interchanging the first two columns in Table 18 so the landing cohorts are ranked from lowest to highest growth rates of real GDP for the decade following their arrival in Canada. In the case of the Bottom earnings group, the average probability of moving (either up or down) – our primary indicator of overall earnings mobility – increases with economic growth for both men and women, with one exception (females in the 1982 landing cohort). The average net probability of moving up for the Bottom group also increases with economic growth for both genders, and the average probability of moving up rises as well (with the same one exception). In the case of the Middle earnings group, only the average probability of moving (either up or down) rises consistently with economic growth. And for the Top group, again the average probability of moving (either up or down) increases with economic growth, with one exception (males in the 1994 landing cohort). In summary, then, higher economic growth does indeed appear to benefit the opportunities of immigrants for economic mobility, but the strongest beneficiaries are most notably the Bottom earnings group of immigrants.<sup>12</sup>

#### **6.4 Cohort Differences in Immigrant Admission Classes**

How has the pattern of earnings mobility across the four immigrant admission classes changed over time across the three landing cohorts? First, the general observations on the patterns in Table 11 for the 1994 landing cohort hold up for the two earlier landing cohorts as well (presented in Tables 19 for the 1982 landing cohort and 20 for the 1988 cohort). Independent economic immigrants show (with one exception) markedly the highest average probability of moving up one or more earnings categories and the lowest average probability of moving down, whereas family class immigrants (with two exceptions) display the lowest average probability of moving up and the highest average probability of moving down one or more earnings categories. As a result, the average net probability of moving up is markedly the highest among independent economic immigrants and the lowest or second lowest among family class immigrants. Essentially the same pattern is also evident in the average size of upward and downward jumps with independent economic immigrants experiencing the largest upward jumps and smallest downward jumps, and family class immigrants having (with one exception) average downward jumps exceeding their average upward jumps.

Second, the dampening effects on overall earnings mobility from the early nineties recession on the 1988 landing cohort are evident across all four immigrant admission classes. More generally, though, independent economic immigrants appear to have been relatively less affected by the recession, while family class and refugee class immigrants – at least for males – appear to have slipped in their mobility rankings for the 1988 landing cohort. That is, those

immigrants with relatively weaker labour market skills lost out relatively more over this marked recession.

Third, comparing the 1982 cohort and 1994 cohort suggests a possible trend; one sees that for both men and women the average probability of moving up has risen substantially and the average probability of moving down has fallen substantially for independent economic immigrants and for other or accompanying economic immigrants. As a result, for both these immigrant classes, the average net probability of moving up one or more earnings categories has markedly shifted up between these two landing cohorts. More generally, between the 1982 and 1994 landing cohorts for all four admission classes – and for both male and female immigrants – the average probability of moving up rose, the average probability of moving down declined (with two exceptions), and as a consequence the average net probability of moving up also rose (again with the two exceptions of family class female immigrants and male refugees). On the other hand, the relative economic performance of refugee class immigrants – in terms of their relative rankings – has worsened or declined among both male and female immigrants, and among male immigrants alone the relative performance of family class immigrants has also slipped.

Finally, what can we say about how the speed of earnings adjustment or earnings mobility across admission classes has changed over time? Tables 11(a) and 12 allowed one to make a comparison across admission classes for the 1994 immigrant landing cohort. Summary mobility results by separate four-year transition period by admission class for the 1982 and 1988 landing cohorts are found in appendix Tables A12 and A13, respectively. These are set up in analogous fashion to the earlier text Table 12. Part a of each table refers to the earlier four-year

transition interval between years 1 and 5, and part b of each table refers to the later four-year transition interval from year 6 to year 10 of the immigrants' first decade in Canada.

There is indeed a general fall-off or decline in all of the first four earnings mobility measures between years 1-5 and years 6-10 across all four immigrant admission classes in the 1982 landing cohort and the 1988 landing cohort. That is, earnings mobility decreases with years since landing. For the 1994 cohort, summary mobility measures for years 6-10 were between 61 and 82 percent of those for years 1-5. For the 1982 cohort, this range was between 60 to 99 percent; and for the 1988 cohort, the range lay between 73 and 99 percent. This again suggests that the early 1990s recession, which the 1988 cohort was so strongly exposed to shortly after arrival in Canada, had a longer lasting earnings adjustment impact than experienced by the other two landing cohorts. Indeed, the earnings mobility ratios in parentheses in Table 12(b) and Table A13(b) are almost uniformly higher for the 1988 landing cohort than for the 1994 cohort. So the earnings adjustment continued rather longer for the 1988 cohort than for the 1994 cohort.

When comparing the rate of adjustment patterns between the 1982 landing cohort (in Table A12(b)) and the 1994 cohort (in Table 12(b)) one also notes the earnings mobility ratios in parentheses indicate for independent economic immigrants a shorter or faster adjustment for the average probability of moving up and a longer or slower adjustment for the average probability of moving down in the 1994 landing cohort than in the 1982 cohort, but for male refugee class immigrants the opposite pattern is apparent. That is, between the 1982 and 1994 landing cohorts, the upward earnings adjustment of independent economic immigrants has become more concentrated in the early years after landing, while the downward earnings adjustment has become more drawn out over the full post-landing decade. On the other hand, the upward



earnings adjustment of male refugee class immigrants has become more drawn out over the full post-landing decade, and the downward earnings adjustment has become more concentrated in the early years after landing in Canada.

## 7. Regression Analysis of Earnings Mobility Patterns

All of the empirical results on immigrants' earnings mobility patterns discussed in the last three sections refer to *gross* mobility effects along some dimension such as gender, immigrant admission class or landing cohort. But it would be interesting, as well, to obtain estimates of corresponding *net* effects of each of these dimensions (i.e., controlling for all three dimensions together). In the absence of being able to pool the raw data cross landing cohorts and look at individual microdata on changes in earnings across earnings categories, we analyze the summary earnings mobility statistics already provided in this paper. To do so, we make use of a descriptive or characteristics regression technique where various summary mobility measures are taken as dependent variables and sets of dummy variables are used to indicate each of the above key dimensions of analysis.

Thus, for the nine-year transition matrices, we have summary mobility measures broken down by two gender groups, four admission classes, and three landing cohorts or  $2 \times 4 \times 3 = 24$  observations. We can then set out a regression model of the form:

$$MM_i = \beta_1 + \beta_2 DSEX_i + \beta_3 D82_i + \beta_4 D88_i + \beta_5 DOE_i + \beta_6 DFC_i + \beta_7 DRC_i + u_i \quad (1)$$

where MM is some summary mobility measures (such as the average probability of moving one or more earnings categories); DSEX is a dummy variable taking a value of 1 if the results refer to females and zero otherwise; D82 and D88 are dummy indicator variables corresponding to the

1982 and 1988 immigrant landing cohorts; DOE, DFC and DRC are dummy indicator variables corresponding to the other economic, family class and refugee class admission classes; and observations  $i = 1, \dots, 24$ . The default categories are male immigrants in the 1994 landing cohort who entered as independent economic immigrants.

In the case of four-year transition matrices, there is the additional dimension of years-since-landing (i.e., over the first five-year period after landing or over the second five-year period). If we pool these two sets of transition-period results, we now have 48 observations with one additional regressor, a dummy indicator variable for observations occurring in the second transition period (over year 6 to 10), D610:

$$\begin{aligned} MM_i = & \beta_1 + \beta_2 DSEX_i + \beta_3 D82_i + \beta_4 D88_i + \beta_5 DOE_i + \beta_6 DFC_i \\ & + \beta_7 DRC_i + \beta_8 D610_i + u_i \end{aligned} \quad (2)$$

The net characteristics results for the nine-year transition matrices are presented in Table 21. The various summary mobility measures (i.e., dependent variables) are arrayed across the top of the table and the major dimensions of the analysis (i.e., the characteristics regressors) are listed down the left-hand margin of the table. Several general results are immediately apparent from the results in Table 21.

First, one can see that female immigrants experience statistically significantly greater earnings mobility than do male immigrants. Their average probability of moving is higher by 2 percentage points, their average probability of moving up one or more earnings categories is higher by 3 percentage points, and their average net probability of moving up is higher by almost 4 percentage points. Interestingly, there is no significant difference between female and male immigrants in their average probability of moving down over the nine-year transition interval.

Second, among immigrant admission classes, independent economic class immigrants (the default category in Table 21) show a statistically significantly higher average probability of moving up, lower average probability of moving down, and higher average net probability of moving up. Interestingly, they do not show greater overall mobility – this claim is taken by refugee class immigrants. So one can characterize independent economic immigrants as demonstrating the greatest degree of upwardly directed earnings mobility (i.e., significantly greater earnings advancement) over the four major immigrant admission classes over their first decade in Canada.

Third, when comparing the 1982 landing cohort and the 1994 landing cohort, one observes a rising degree of earnings mobility and indeed earnings advancement over time among immigrants in the Canadian labour market. The most recent landing cohort experienced a statistically significantly higher average probability of moving up, lower average probability of moving down, and hence higher average net probability of moving up. Their overall degree of mobility is only marginally significantly higher as well. So again, the more recent landing cohort of immigrants has experienced a more upwardly directed pattern of earnings mobility than the early eighties landing cohort.

Fourth, when comparing the 1988 landing cohort with the other two landing cohorts, and particularly the more recent 1994 cohort, one notes the statistically significant dampening of earnings mobility associated with the effects of the severe early nineties economic recession in Canada. The average probability of moving (either up or down by one or more earnings categories) is 5 percentage points lower for the 1988 landing cohort than for the 1994 cohort, their average probability of moving up is 4 percentage points lower, and their average net

probability of moving up is 3 percentage points lower. Interestingly, the recession doesn't significantly affect the average probability of moving down, but largely operates by dampening the opportunity for upward earnings advancement in the regression framework results.

Table 22 shows a similar set of descriptive regression results for the four-year transition matrices. As can be seen, the above four general patterns of immigrant earnings mobility still hold over this set of much shorter transition intervals. In addition, the last row of regression coefficients in the table also shows a highly statistically significant reduction in the first four measures of earnings mobility with years-since-landing in Canada (i.e., the years 6-10 coefficients are significantly negative by between 4 and 12 percentage points). That is, the speed of adjustment of immigrants' earnings attenuates significantly over their first ten years working in the Canadian labour market. Again, interestingly, this finding does not carry through to the last column in Table 22. That is, the average net probability of moving up actually increases over the second half of this initial earnings decade in Canada compared to the first half decade because of the very strong reduction in the average probability of moving down in the latter half of their initial earnings decade in Canada.

## **8. Summary and Policy Conclusions**

This paper reports and documents the major findings of an empirical analysis of the earnings mobility of male and female immigrants over their first ten post-landing years in Canada. The analysis employs the transition matrix approach to separately investigate the relative earnings mobility of male and female immigrants in a given annual landing cohort within their respective annual earnings distributions for all male and all female immigrants in that

cohort. Our implementation of the transition matrix approach uses annual earnings data between 1982 and 2005 from the longitudinal IMDB database on individual male and female immigrants for the first ten years following their landing in Canada as permanent residents. Earnings mobility is measured in terms of transitions or movements of individuals among six ordered real earnings categories defined relative to the median of the real annual earnings distributions of all male or all female immigrants in a given landing cohort for the start and end years of a transition period that occurs within the first ten complete calendar years that immediately follow the immigrant cohort's year of landing in Canada. Three annual landing cohorts are included in the analysis, specifically the cohorts of Canadian immigrants who were landed as permanent residents in the years 1982, 1988 and 1994; their first post-landing decades are 1983-1992 for the 1982 landing cohort, 1989-1998 for the 1988 landing cohort, and 1995-2004 for the 1994 landing cohort. Earnings transition matrices are computed over six different transition intervals of various lengths that occur within each landing cohort's first ten post-landing years in Canada: one nine-year transition between post-landing years 1 and 10; two four-year transitions between post-landing years 1 and 5, and 6 and 10; and three one-year transitions between post-landing years 1 and 2, 5 and 6, and 9 and 10. This concluding section of the paper summarizes the major empirical findings that emerge from the 18 sets of transition matrices (3 landing cohorts x 6 transition intervals) computed separately for male and female immigrants.

Additionally, immigrants arrive under different admission programs and the study distinguishes four major immigrant admission classes – independent economic immigrants (i.e., principal applicants who are evaluated under a skill-based point system screen), other economic immigrants (i.e., other family members accompanying the principal applicant), family class

immigrants (who are sponsored by a resident family), and refugee class immigrant (who are admitted on humanitarian grounds). So a policy-relevant question is whether and how much better immigrants in one admission class do relative to immigrants in other admission classes.

## **8.1 Overview of Major Findings**

First, we compared our evidence on the earnings mobility of Canadian immigrants over their first post-landing decade in Canada with that of all wage and salary earners of the same gender in Canada over two eight-year transition intervals and one 12-year transition interval. Our first finding is that overall earnings mobility – as measured by the probability of moving to a higher or lower earnings category and by the Prais mobility index – was slightly greater for male immigrant earners than for all male wage earners, but was considerably greater for female immigrant earners than for all female earners in Canada. Second, we compared three summary measures of directional earnings mobility for male and female immigrants with those for all wage earners of the same gender, and obtained three basic findings. First, upward earnings mobility – as measured by the average probability of moving up one or more earnings categories – is considerably lower for male immigrants than for all male workers, but is fairly similar for female immigrants and all female workers. Second, downward earnings mobility – as measured by the average probability of moving down one or more earnings categories – is much greater for both male and female immigrants than for all male and all female workers, respectively. And third, these first two findings imply that the average net probability of moving up one or more earnings categories is far lower both for male immigrants than for all male workers and for female immigrants than for all female workers. Thus, over their first post-landing decade in

Canada, both male and female immigrants were much more likely to experience downward earnings mobility than were all wage earners of the same gender in Canada.

Second, we examined differences in earnings mobility of immigrants across the four immigrant admission categories. We examined, separately for male and female immigrants, 18 sets of earnings transition matrices (six earnings transition intervals for each of three landing cohorts) for differences among admission categories in both overall and directional earnings mobility and in the average size of the resulting upward and downward movements among relative earnings categories. With respect to differences in *overall* earnings mobility across the four admission categories, our main finding is that, with only few exceptions, refugee immigrants – both male and female – exhibited the highest probability of moving to a higher or lower earnings category (and the highest values of the Prais mobility index). Among male immigrants, refugee immigrants had the highest probability of moving up or down in 17 of 18 cases for the three landing cohorts; among female immigrants, refugees had the highest probability of moving up or down in 12 of 12 cases for the 1982 and 1988 landing cohorts, but in only 2 of 6 cases for the 1994 landing cohort. Our analysis of *directional* earnings mobility relies heavily on three summary measures computed for each transition matrix – the average probability of moving to a higher earnings category, the average probability of moving to a lower earnings category, and the average net probability of moving to a higher earnings category. Perhaps our strongest and most consistent findings are those relating to the earnings mobility of both male and female immigrants in the independent economic category. Among male immigrants, independent economic immigrants had the highest or second-highest average probability of moving up in nearly 95 percent of all cases. Among female immigrants,

independent economic immigrants had the highest or second-highest average probability of moving up to a higher earnings category in 100 percent of all cases. Among male immigrants, those in the independent economic category also exhibited the lowest average probability of moving down to a lower earnings category together with the highest net probability of moving up to a higher earnings category in 100 percent of all cases. Similarly, among female immigrants, those in the independent economic category exhibited the lowest average probability of moving down together with the highest net probability of moving up in 100 percent of all cases. Thus, we find that independent economic immigrants always exhibited the lowest average probability of moving down to a lower earnings category and the highest net probability of moving up to a higher earnings category, and had the highest probability of moving up to a higher earnings category in a substantial majority (78 percent) of cases. With respect to the *average size* of the upward and downward movements among earnings categories, the experience of independent economic immigrants again stands out from that of immigrants in the other three admission classes. Male immigrants in the independent economic category experienced the largest upward earnings jumps in 18 of 18 cases and the smallest downward earnings jumps in 17 of 18 cases, compared with males in the other three admission categories. Similarly, female immigrants in the independent economic category experienced the largest upward earnings jumps in 17 of 18 cases and the smallest downward earnings jumps in 18 of 18 cases, compared with females in the other three admission categories. Thus, independent economic immigrants, comprised of skill-assessed immigrants admitted under the Federal Skilled Worker Program, almost always had the largest upward earnings jumps and the smallest downward earnings jumps compared with immigrants in the other three admission categories. We also find that family class immigrants, both males and



females, generally had the smallest upward earnings jumps compared with immigrants in the other three admission categories.

Third, to compare the earnings mobility of male and female immigrants, we again relied on determining how several summary measures of earnings mobility differ between male and female immigrants over a given landing cohort's first post-landing decade in Canada. With respect to overall earnings mobility, we find that female immigrants were more likely than male immigrants to move to a higher or lower earnings category (and had a higher Prais mobility index) in 13 of 15 cases for the 9-year earnings transition, in 28 of 30 cases for the two 4-year earnings transitions, and in 45 of 45 cases for the three 1-year earnings transitions – in other words, in a total of 96 percent of cases. In a regression framework, the average probability of moving is higher for females by 2 percentage points. Interestingly, this is opposite to the situation for male and female workers as a whole in the Canadian labour market where female earners show a lower average probability of moving than male earners by 5-7 percentage points. In terms of directional mobility, female immigrants almost always exhibited a higher probability of moving up to a higher earnings category than did male immigrants in the same landing cohort and admission category, but had a higher probability of moving down than male immigrants in a much smaller percentage of cases. Female immigrants had a higher average probability of moving up to a higher earnings category than did male immigrants in 97 percent of cases, whereas they had a higher average probability of moving down to a lower earnings category than did male immigrants in only 68 percent of cases. Finally, with respect to the magnitude of female-male differences in the size of immigrants' earnings transitions, our evidence clearly indicates that female immigrants generally experienced both larger upward and larger downward

movements among relative earnings categories than did male immigrants in the same landing cohort. The average upward earnings jump was larger for female immigrants than for male immigrants in a total of 98 percent of cases, and the average downward earnings jump was larger for female immigrants than for male immigrants in a total of 81 percent of cases.

Fourth, to investigate whether and how immigrant earnings mobility varies over a given landing cohort's first post-landing decade in Canada, we compared several summary measures of earnings mobility between earlier and later transition intervals within each landing cohort's first ten post-landing years in Canada. Specifically, we compared earnings mobility measures for the year 1-to-5 and year 6-to-10 transitions, for the year 1-to-2 and year 5-to-6 transitions, and for the year 5-to-6 and year 9-to-10 transitions. For each pair of transition intervals, our analysis produced 30 comparisons for each summary mobility measure. We found that all five measures of earnings mobility – the average probability of changing earnings categories, the Prais mobility index, the average probability of moving up, the average probability of moving down, and the average upward jump size – are smaller for the year-6-to-10 transition than for the year-1-to-5 transition, smaller for the year-5-to-6 transition than for the year-1-to-2 transition, and smaller for the year-9-to-10 transition than for the year-5-to-6 transition in 100 percent of cases. Such evidence strongly suggests that the degree of immigrant earnings mobility declines over immigrants' first ten post-landing years in Canada as immigrants integrate into the society and economy of the host country.

Fifth, immigrant earnings mobility has shown some differences across the three annual immigrant landing cohorts included in our analysis. These three immigrant cohorts experienced different aggregate economic conditions during their first post-landing decades in Canada. The

1982 and 1988 landing cohorts both experienced the 1990-1991 recession, but at very different times in their first post-landing decades. The 1990-1991 recession occurred in the second and third post-landing years of the 1988 cohort, but in the eighth and ninth post-landing years of the 1982 cohort. Thus, the 1988 landing cohort experienced the 1990-1991 recession early in its first post-landing decade in Canada whereas the 1982 landing cohort experienced it late in its first post-landing decade. The 1994 cohort did not experience an official recession during its first post-landing decade in Canada. Our most consistent finding concerning cross-cohort differences in earnings mobility is that female immigrants in the 1988 landing cohort for all six earnings transition intervals had the smallest values of five of the seven summary mobility measures we computed compared with female immigrants in the 1982 and 1994 cohorts: the average probability of moving up or down, the Prais mobility index, the average probability of moving down one or more earnings categories, the average upward jump size, and the average downward jump size. In addition, the average probability of moving up one or more earnings categories was lower for female immigrants in the 1988 landing cohort than for female immigrants in the 1994 landing cohort for five of the six transition intervals. Thus, female immigrants in the 1988 landing cohort appear to have exhibited generally lower earnings mobility and smaller relative earnings changes compared with female immigrants in the other two landing cohorts. For the three cohorts of male immigrants, however, evidence of consistent cross-cohort differences in earnings mobility is much less apparent than it is for female immigrants. One notable finding is that the values of six of the seven summary mobility measures are lower for male immigrants in the 1988 landing cohort than for males in the 1994 cohort for the three earlier earnings transitions we consider, specifically the year 1-to-10, year 1-to-5, and year 1-to-2 transitions. But

the reverse is observed for the two later earnings transitions – the year 6-to-10 and year 9-to-10 transitions: all seven earnings mobility measures for the year 6-to-10 transition, and six of seven earnings mobility measures for the year 9-to-10 transition, are larger for male immigrants in the 1988 cohort than for male immigrants male immigrants in the 1994 cohort. The finding that 1988 male immigrants displayed lower earnings mobility than 1994 male immigrants for the three earlier earnings transitions (the year 1-to-10, year 1-to-5, and year 1-to-2 transitions) but greater earnings mobility than 1994 male immigrants for the two later earnings transitions (the year 6-to-10 and year 9-to-10 transitions) might be interpreted as indicating that, whatever depressing effects the 1990-1991 recession may have had on the earnings mobility of 1988 male immigrants early in their initial post-landing decade, these effects had largely dissipated towards the end of that first post-landing decade in Canada.

## **8.2 Immigration Policy Considerations**

The above results reflect on several aspects of Canadian immigration policy. First, immigrants demonstrate greater mobility of earnings in the labour market than do workers as a whole. They thus show greater flexibility in the workforce and help to provide the grease for economic adjustment as the economy develops. Immigrants tend to be more geographically mobile than non-immigrants, at least in their initial years in Canada, and to move toward expanding sectors and away from declining ones. Recent immigrants also demonstrate greater occupational mobility than do non-immigrants, suggesting that they respond to economic shocks and incentives more flexibly than does the native-born workforce (Green, 1999). Reducing

overall immigration levels would thus not be an advisable direction for immigration policy as it could reduce this short-run aspect of flexibility and adjustment in the Canadian labour market.

Second, among the major immigrant admission classes, independent economic immigrants show a significantly greater degree of upward earnings mobility than do the other admission classes. Thus Canadian immigration policy should continue to assign a substantial weight to skill-assessed immigration, and the federal Skilled Worker Program should not be reduced or replaced by programs that do not depend on attracting skilled workers to Canada. This reinforces a similar policy recommendation by the authors in their earlier study (Abbott and Beach, 2011).

Third, refugee class immigrants have been shown to experience a long slow adjustment process of integrating into the Canadian labour market. This means that a broad range of public efforts and programs should be brought to bear on this problem and not a narrow-siloed response (Omidvar and Lopes, 2012; Roundtable Report, 2012).

Fourth, the 1990-91 economic recession appears to have significantly dampened overall earnings mobility and particularly upward earnings mobility of immigrants who arrived in Canada shortly before that time. This finding also complements the results in Abbott and Beach (2011) and reinforces the policy conclusion there that perhaps thought should be given to ways to reduce total immigrant admission levels when a severe recession hits the Canadian economy. It may thus be time to revisit the current policy of maintaining relatively high admission levels of both permanent residents and temporary foreign workers during periods of high unemployment and slow economic growth.

**Table 1(a)**  
**Nine-Year Transition Matrix for All Male Immigrant Earners in the 1994 Landing Cohort,**  
**Post-Landing Years 1 to 10 (1995-2004)**

<b>1995/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 1995	<b>14.09</b>	13.18	31.65	21.57	11.30	8.20	100.0
LO 1995	11.54	<b>15.69</b>	36.34	20.14	8.31	7.97	100.0
LM 1995	8.95	14.20	<b>39.70</b>	23.15	8.47	5.54	100.0
HM 1995	5.70	9.24	37.31	<b>30.81</b>	10.40	6.54	100.0
HI 1995	3.82	6.36	21.99	35.94	<b>17.54</b>	14.36	100.0
VH 1995	2.23	3.19	8.80	16.18	18.26	<b>51.35</b>	100.0

N = 19,600

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	28.20
Average Prob. of Moving Up/Down	=	71.80
Prais Mobility Index	=	0.8616
Average Prob. of Moving Up	=	37.85
Average Prob. of Moving Down	=	33.95
Average Net Prob. of Moving Up	=	3.902
Average Upward Jump	=	0.7590
Average Downward Jump	=	0.5529

**Table 1(b)**  
**Nine-Year Transition Matrix for All Female Immigrant Earners in the 1994 Landing**  
**Cohort, Post-Landing Years 1 to 10 (1995-2004)**

<b>1995/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 1995	<b>13.12</b>	15.26	26.79	21.86	10.41	12.56	100.0
LO 1995	11.42	<b>15.64</b>	31.61	22.23	9.88	9.22	100.0
LM 1995	10.56	17.79	<b>31.35</b>	22.95	9.25	8.10	100.0
HM 1995	10.02	12.46	33.11	<b>24.96</b>	10.12	9.32	100.0
HI 1995	5.74	8.24	26.53	31.14	<b>16.14</b>	12.22	100.0
VH 1995	3.82	4.82	12.26	19.90	20.35	<b>38.84</b>	100.0

N = 13,480

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	23.34
Average Prob. of Moving Up/Down	=	76.66
Prais Mobility Index	=	0.9199
Average Prob. of Moving Up	=	38.63
Average Prob. of Moving Down	=	38.03
Average Net Prob. of Moving Up	=	0.6033
Average Upward Jump	=	0.8136
Average Downward Jump	=	0.6760

**Table 2**  
**Average Probability of Moving Up and Moving Down and Prais Index Among**  
**Immigrants and Earners as a Whole in Canada**

	<b>All Workers 8-Yr Transition 1982-90 (%)</b>	<b>All workers 8-Yr Transition 1991-99 (%)</b>	<b>All Workers 12-Yr Transition 1982-94 (%)</b>	<b>Immigrants 9-Yr Transition 1995-04 (%)</b>
<b>Males</b>				
Avg Pr of Moving	64.66	62.71	68.87	71.80
Prais Index	0.776	0.753	0.826	0.862
Avg Pr of Moving Up	46.33	44.08	49.24	37.85
Avg Pr of Moving Down	18.33	18.63	19.63	33.95
Avg Net Pr of Moving Up	28.00	25.55	29.61	3.90
<b>Females</b>				
Avg Pr of Moving	59.87	58.42	65.00	76.66
Prais Index	0.718	0.701	0.780	0.920
Avg Pr of Moving Up	37.48	35.61	43.27	38.63
Avg Pr of Moving Down	22.39	22.81	21.73	38.03
Avg Net Pr of Moving Up	15.09	12.80	21.54	0.60

Sources: Tables 1, and A5-A7.

**Table 3**  
**Average Probability of Moving Up and Down by Earnings Group**  
**Among Immigrants and Earners as a Whole in Canada**

	Males		Females	
	All Workers 8-Yr Transition 1991-99 (%)	Immigrants 9-Yr Transition 1995-04 (%)	All Workers 8-Yr Transition 1991-99 (%)	Immigrants 9-Yr Transition 1995-04 (%)
Avg Pr of Moving Up				
- Bottom	76.17	79.34	65.16	79.91
- Middle	38.38	22.82	27.79	23.99
- Top	0	0	0	0
Avg Pr of Moving Down				
- Bottom	5.98	5.77	8.12	5.71
- Middle	24.10	47.84	28.43	51.86
- Top	27.52	48.65	35.31	61.16
Avg Pr of Moving				
- Bottom	80.65	85.11	73.28	85.62
- Middle	62.49	70.65	56.21	75.85
- Top	27.52	48.65	35.31	61.16
Avg Net Pr of Moving Up				
- Bottom	70.19	73.57	57.04	74.20
- Middle	14.28	-25.02	-0.64	-27.87
- Top	-27.52	-48.65	-35.31	-61.16

Sources: Tables 1 and A6.



**Table 4(a)**  
**Four-Year Transition Matrix for All Male Immigrant Earners in the 1994 Landing Cohort,**  
**Post-Landing Years 1 to 5 (1995-1999)**

<b>1995/1999</b>	<b>VL 1999</b>	<b>LO 1999</b>	<b>LM 1999</b>	<b>HM 1999</b>	<b>HI 1999</b>	<b>VH 1999</b>	<b>Row Sum</b>
VL 1995	<b>17.24</b>	16.34	33.26	17.82	8.51	6.82	100.0
LO 1995	13.71	<b>18.78</b>	36.01	18.12	7.30	6.08	100.0
LM 1995	8.90	15.27	<b>42.40</b>	22.36	6.63	4.44	100.0
HM 1995	4.56	7.32	38.45	<b>34.14</b>	9.30	6.23	100.0
HI 1995	3.14	3.96	16.89	41.13	<b>20.81</b>	14.08	100.0
VH 1995	1.89	1.76	4.94	13.40	20.71	<b>57.31</b>	100.0

N = 22,370

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	31.78
Average Prob. of Moving Up/Down	=	68.22
Prais Mobility Index	=	0.8186
Average Prob. of Moving Up	=	35.55
Average Prob. of Moving Down	=	32.67
Average Net Prob. of Moving Up	=	2.878
Average Upward Jump	=	0.6795
Average Downward Jump	=	0.4862

**Table 4(b)**  
**Four-Year Transition Matrix for All Female Immigrant Earners in the 1994 Landing**  
**Cohort, Post-Landing Years 1 to 5 (1995-1999)**

<b>1995/1999</b>	<b>VL 1999</b>	<b>LO 1999</b>	<b>LM 1999</b>	<b>HM 1999</b>	<b>HI 1999</b>	<b>VH 1999</b>	<b>Row Sum</b>
VL 1995	<b>13.65</b>	16.20	32.48	21.61	9.27	6.79	100.0
LO 1995	12.41	<b>16.37</b>	36.21	20.28	9.13	5.60	100.0
LM 1995	9.05	18.30	<b>35.45</b>	22.19	8.76	6.24	100.0
HM 1995	7.25	10.85	34.96	<b>28.51</b>	10.88	7.55	100.0
HI 1995	4.11	6.75	22.07	35.46	<b>20.55</b>	11.06	100.0
VH 1995	2.85	3.35	8.74	16.12	23.09	<b>45.86</b>	100.0

N = 15,145

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	26.73
Average Prob. of Moving Up/Down	=	73.27
Prais Mobility Index	=	0.8792
Average Prob. of Moving Up	=	37.38
Average Prob. of Moving Down	=	35.89
Average Net Prob. of Moving Up	=	1.482
Average Upward Jump	=	0.7318
Average Downward Jump	=	0.5879

**Table 5(a)**  
**Four-Year Transition Matrix for All Male Immigrant Earners in the 1994 Landing Cohort,**  
**Post-Landing Years 6 to 10 (2000-2004)**

<b>2000/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 2000	<b>31.20</b>	25.42	29.53	9.82	3.06	0.97	100.0
LO 2000	17.75	<b>32.27</b>	36.75	9.41	2.73	1.08	100.0
LM 2000	6.73	12.67	<b>57.23</b>	19.10	3.06	1.22	100.0
HM 2000	3.09	3.86	24.14	<b>52.26</b>	13.16	3.48	100.0
HI 2000	1.75	2.07	6.54	25.26	<b>44.15</b>	20.23	100.0
VH 2000	1.81	1.29	3.41	5.60	15.11	<b>72.78</b>	100.0

N = 22,115

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	48.32
Average Prob. of Moving Up/Down	=	51.69
Prais Mobility Index	=	0.6202
Average Prob. of Moving Up	=	29.84
Average Prob. of Moving Down	=	21.85
Average Net Prob. of Moving Up	=	7.990
Average Upward Jump	=	0.4472
Average Downward Jump	=	0.3122

**Table 5(b)**  
**Four-Year Transition Matrix for All Female Immigrant Earners in the 1994 Landing**  
**Cohort, Post-Landing Years 6 to 10 (2000-2004)**

<b>2000/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 2000	<b>25.08</b>	23.56	30.24	13.70	4.37	3.04	100.0
LO 2000	16.68	<b>27.38</b>	34.45	15.21	3.77	2.51	100.0
LM 2000	10.21	15.59	<b>46.95</b>	19.63	4.91	2.71	100.0
HM 2000	4.44	6.78	27.26	<b>44.44</b>	12.21	4.87	100.0
HI 2000	2.71	3.13	10.58	30.00	<b>36.94</b>	16.63	100.0
VH 2000	1.73	2.23	4.37	6.31	16.83	<b>68.52</b>	100.0

N = 18,275

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	41.55
Average Prob. of Moving Up/Down	=	58.45
Prais Mobility Index	=	0.7014
Average Prob. of Moving Up	=	31.97
Average Prob. of Moving Down	=	26.48
Average Net Prob. of Moving Up	=	5.493
Average Upward Jump	=	0.5337
Average Downward Jump	=	0.3973

**Table 6**  
**Earnings Mobility Patterns by Years-Since-Landing for Four-Year and One-Year**  
**Immigrant Earnings Transition Matrices, 1994 Landing Cohort**

	Years 1-5 (%)	Years 6-10 (%)	Years 1-2 (%)	Years 5-6 (%)	Years 9-10 (%)
<b>Males</b>					
Avg Pr of Moving	68.22	51.69	55.96	41.70	35.33
Prais Index	0.8186	0.6202	0.6715	0.5004	0.4239
Avg Pr of Moving Up	35.55	29.84	30.42	24.64	20.89
Avg Pr of Moving Down	32.67	21.85	25.55	17.07	14.43
Avg Net Pr of Moving Up	2.88	7.99	4.87	7.57	6.46
<b>Females</b>					
Avg Pr of Moving	73.27	58.45	62.68	49.66	40.42
Prais Index	0.8792	0.7014	0.7521	0.5960	0.4851
Avg Pr of Moving Up	37.38	31.97	32.59	28.29	22.96
Avg Pr of Moving Down	35.89	26.48	30.09	21.38	17.47
Avg Net Pr of Moving Up	1.48	5.49	2.50	6.91	5.49

**Table 7(a)**  
**Nine-Year Transition Matrix for Male Immigrant Earners in Admission Category 1**  
**(Independent Economic Immigrants) of the 1994 Landing Cohort, Post-Landing**  
**Years 1 to 10 (1995-2004)**

<b>1995/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 1995	<b>10.87</b>	10.06	24.95	21.33	17.10	15.69	100.0
LO 1995	11.42	<b>12.98</b>	28.37	18.69	12.28	16.26	100.0
LM 1995	8.10	11.77	<b>28.06</b>	24.16	13.46	14.45	100.0
HM 1995	4.57	8.59	32.02	<b>25.28</b>	15.01	14.53	100.0
HI 1995	3.23	6.09	17.02	28.20	<b>20.75</b>	24.72	100.0
VH 1995	1.53	2.23	6.99	12.57	16.33	<b>60.34</b>	100.0

N = 6,135

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	26.38
Average Prob. of Moving Up/Down	=	73.62
Prais Mobility Index	=	0.8834
Average Prob. of Moving Up	=	45.18
Average Prob. of Moving Down	=	28.44
Average Net Prob. of Moving Up	=	16.73
Average Upward Jump	=	1.0028
Average Downward Jump	=	0.4579

**Table 7(b)**  
**Nine-Year Transition Matrix for Female Immigrant Earners in Admission Category 1**  
**(Independent Economic Immigrants) of the 1994 Landing Cohort, Post-Landing**  
**Years 1 to 10 (1995-2004)**

<b>1995/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 1995	<b>3.47</b>	8.33	19.44	27.08	20.83	20.83	100.0
LO 1995	7.80	<b>8.72</b>	23.39	26.61	13.76	19.72	100.0
LM 1995	5.44	11.58	<b>23.40</b>	25.30	14.89	19.39	100.0
HM 1995	8.31	6.11	23.47	<b>23.96</b>	16.14	22.00	100.0
HI 1995	4.83	6.04	16.92	28.40	<b>22.96</b>	20.85	100.0
VH 1995	2.59	4.14	8.93	14.36	21.47	<b>48.51</b>	100.0

N = 2,290

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	21.84
Average Prob. of Moving Up/Down	=	78.16
Prais Mobility Index	=	0.9380
Average Prob. of Moving Up	=	49.76
Average Prob. of Moving Down	=	28.40
Average Net Prob. of Moving Up	=	21.36
Average Upward Jump	=	1.1782
Average Downward Jump	=	0.4951

**Table 8(a)**  
**Nine-Year Transition Matrix for Male Immigrant Earners in Admission Category 2**  
**(Tied Economic Immigrants) of the 1994 Landing Cohort, Post-Landing Years 1 to 10**  
**(1995-2004)**

<b>1995/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 1995	<b>15.17</b>	12.92	28.09	21.35	12.92	9.55	100.0
LO 1995	7.56	<b>9.33</b>	34.22	27.56	11.56	9.78	100.0
LM 1995	5.97	11.94	<b>40.09</b>	24.09	12.15	5.76	100.0
HM 1995	6.94	8.95	33.33	<b>31.99</b>	11.86	6.94	100.0
HI 1995	2.40	5.20	24.00	36.40	<b>19.20</b>	12.80	100.0
VH 1995	3.38	6.33	11.39	17.72	21.52	<b>39.66</b>	100.0

N = 1,805

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	25.91
Average Prob. of Moving Up/Down	=	74.09
Prais Mobility Index	=	0.8891
Average Prob. of Moving Up	=	40.26
Average Prob. of Moving Down	=	33.84
Average Net Prob. of Moving Up	=	6.420
Average Upward Jump	=	0.8332
Average Downward Jump	=	0.5774

**Table 8(b)**  
**Nine-Year Transition Matrix for Female Immigrant Earners in Admission Category 2**  
**(Tied Economic Immigrants) of the 1994 Landing Cohort, Post-Landing Years 1 to 10**  
**(1995-2004)**

<b>1995/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 1995	<b>11.99</b>	9.94	26.02	20.76	11.40	19.88	100.0
LO 1995	10.48	<b>10.95</b>	24.52	24.05	14.29	15.71	100.0
LM 1995	9.36	11.70	<b>24.42</b>	27.63	13.16	13.74	100.0
HM 1995	7.32	8.78	27.64	<b>29.59</b>	13.33	13.33	100.0
HI 1995	3.39	8.09	20.63	34.46	<b>19.84</b>	13.58	100.0
VH 1995	3.55	3.55	11.11	20.09	19.39	<b>42.32</b>	100.0

N = 2,865

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	23.19
Average Prob. of Moving Up/Down	=	76.82
Prais Mobility Index	=	0.9218
Average Prob. of Moving Up	=	43.56
Average Prob. of Moving Down	=	33.26
Average Net Prob. of Moving Up	=	10.30
Average Upward Jump	=	0.9939
Average Downward Jump	=	0.5774

**Table 9(a)**  
**Nine-Year Transition Matrix for Male Immigrant Earners in Admission Category 3**  
**(Family Class Immigrants) of the 1994 Landing Cohort, Post-Landing Years 1 to 10**  
**(1995-2004)**

1995/2004	VL 2004	LO 2004	LM 2004	HM 2004	HI 2004	VH 2004	Row Sum
VL 1995	<b>16.12</b>	17.27	39.31	17.27	6.25	3.78	100.0
LO 1995	12.90	<b>18.55</b>	40.11	19.26	5.30	3.89	100.0
LM 1995	9.40	15.09	<b>44.96</b>	22.82	5.60	2.13	100.0
HM 1995	5.74	9.64	40.80	<b>32.86</b>	8.12	2.84	100.0
HI 1995	3.76	6.85	25.41	41.66	<b>14.59</b>	7.73	100.0
VH 1995	3.35	3.35	10.97	25.84	21.56	<b>34.94</b>	100.0

N = 9,375

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	27.00
Average Prob. of Moving Up/Down	=	73.00
Prais Mobility Index	=	0.8760
Average Prob. of Moving Up	=	33.61
Average Prob. of Moving Down	=	39.39
Average Net Prob. of Moving Up	=	-5.773
Average Upward Jump	=	0.6061
Average Downward Jump	=	0.6474

**Table 9(b)**  
**Nine-Year Transition Matrix for Female Immigrant Earners in Admission Category 3**  
**(Family Class Immigrants) of the 1994 Landing Cohort, Post-Landing Years 1 to 10**  
**(1995-2004)**

1995/2004	VL 2004	LO 2004	LM 2004	HM 2004	HI 2004	VH 2004	Row Sum
VL 1995	<b>15.13</b>	19.90	30.10	21.50	6.53	6.85	100.0
LO 1995	12.83	<b>19.14</b>	36.17	19.94	7.21	4.71	100.0
LM 1995	12.31	21.25	<b>35.06</b>	20.55	6.62	4.21	100.0
HM 1995	11.38	15.13	38.34	<b>22.59</b>	8.07	4.48	100.0
HI 1995	7.01	8.40	32.20	31.35	<b>12.65</b>	8.40	100.0
VH 1995	5.24	5.66	16.14	25.66	20.00	<b>27.31</b>	100.0

N = 7,350

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	21.98
Average Prob. of Moving Up/Down	=	78.02
Prais Mobility Index	=	0.9362
Average Prob. of Moving Up	=	34.21
Average Prob. of Moving Down	=	43.82
Average Net Prob. of Moving Up	=	-9.610
Average Upward Jump	=	0.6556
Average Downward Jump	=	0.7984

**Table 10(a)**  
**Nine-Year Transition Matrix for Male Immigrant Earners in Admission Category 4**  
**(Refugee Immigrants) of the 1994 Landing Cohort, Post-Landing Years 1 to 10 (1995-2004)**

<b>1995/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 1995	<b>14.60</b>	10.74	29.75	29.20	11.02	4.68	100.0
LO 1995	10.27	<b>15.18</b>	38.17	20.54	9.15	6.70	100.0
LM 1995	10.56	16.16	<b>35.36</b>	22.08	10.72	5.12	100.0
HM 1995	7.19	8.83	34.29	<b>32.03</b>	10.47	7.19	100.0
HI 1995	7.47	6.64	23.65	39.83	<b>16.18</b>	6.22	100.0
VH 1995	4.80	9.60	19.20	20.80	24.00	<b>21.60</b>	100.0

N = 2,280

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	22.49
Average Prob. of Moving Up/Down	=	77.51
Prais Mobility Index	=	0.9301
Average Prob. of Moving Up	=	36.96
Average Prob. of Moving Down	=	40.55
Average Net Prob. of Moving Up	=	-3.590
Average Upward Jump	=	0.7480
Average Downward Jump	=	0.7393

**Table 10(b)**  
**Nine-Year Transition Matrix for Female Immigrant Earners in Admission Category 4**  
**(Refugee Immigrants) of the 1994 Landing Cohort, Post-Landing Years 1 to 10 (1995-2004)**

<b>1995/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 1995	<b>16.67</b>	14.58	21.53	20.83	14.58	11.81	100.0
LO 1995	10.22	<b>15.59</b>	32.80	25.27	9.68	6.45	100.0
LM 1995	6.88	13.77	<b>30.07</b>	27.54	12.68	9.06	100.0
HM 1995	9.73	12.97	22.16	<b>34.59</b>	5.95	14.59	100.0
HI 1995	5.71	14.29	27.62	25.71	<b>12.38</b>	14.29	100.0
VH 1995	4.35	11.59	15.94	20.29	17.39	<b>30.43</b>	100.0

N = 965

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	23.29
Average Prob. of Moving Up/Down	=	76.71
Prais Mobility Index	=	0.9205
Average Prob. of Moving Up	=	40.27
Average Prob. of Moving Down	=	36.44
Average Net Prob. of Moving Up	=	3.837
Average Upward Jump	=	0.8420
Average Downward Jump	=	0.7260

**Table 11(a)**  
**Earnings Mobility Patterns by Immigrant Admission Class for Nine-Year Transition**  
**Matrices, 1994 Landing Cohort**  
**(relative ranks in parentheses)**

	<b>Independent Economic (%)</b>	<b>Other Economic (%)</b>	<b>Family Class (%)</b>	<b>Refugee Class (%)</b>
<b>Males</b>				
Avg Pr of Moving	73.62 (3)	74.09 (2)	73.00 (4)	77.51 (1)
Prais Index	0.8834 (3)	0.8891 (2)	0.8760 (4)	0.9301 (1)
Avg. Pr of Moving Up	45.18 (1)	40.26 (2)	33.61 (4)	36.96 (3)
Avg Pr of Moving Down	28.44 (4)	33.84 (3)	39.39 (2)	40.55 (1)
Avg Net Pr of Moving Up	16.73 (1)	6.42 (2)	-5.77 (4)	-3.59 (3)
Avg Up Jump	1.0028 (1)	0.8332 (2)	0.6061 (4)	0.7480 (3)
Avg Down Jump	0.4579 (4)	0.5774 (3)	0.6474 (2)	0.7393 (1)
<b>Females</b>				
Avg Pr of Moving	78.16 (1)	76.82 (3)	78.02 (2)	76.71 (4)
Prais Index	0.9380 (1)	0.9218 (3)	0.9362 (2)	0.9205 (4)
Avg Pr of Moving Up	49.76 (1)	43.56 (2)	34.21 (4)	40.27 (3)
Avg Pr of Moving Down	28.40 (4)	33.26 (3)	43.82 (1)	36.44 (2)
Avg. Net Pr of Moving Up	21.36 (1)	10.30 (2)	-9.61 (4)	3.84 (3)
Avg Up Jump	1.1782 (1)	0.9939 (2)	0.6556 (4)	0.8420 (3)
Avg Down Jump	0.4951 (4)	0.5774 (3)	0.7984 (1)	0.7260 (2)



**Table 11(b)**  
**Earnings Mobility Patterns by Immigrant Admission Class for Nine-Year Transition**  
**Matrices, Average over 1982, 1988, and 1994 Landing Cohorts**  
**(relative ranks in parentheses)**

	<b>Independent Economic (%)</b>	<b>Other Economic (%)</b>	<b>Family Class (%)</b>	<b>Refugee Class (%)</b>
<b>Males</b>				
Avg Pr of Moving	71.40 (4)	73.22 (2)	72.26 (3)	74.24 (1)
Prais Index	0.8568 (4)	0.8787 (2)	0.8671 (3)	0.8909 (1)
Avg. Pr of Moving Up	40.19 (1)	35.37 (3)	32.51 (4)	36.11 (2)
Avg Pr of Moving Down	31.22 (4)	37.86 (3)	39.75 (1)	38.13 (2)
Avg Net Pr of Moving Up	8.97 (1)	-2.50 (3)	-7.23 (4)	-2.02 (2)
Avg Up Jump	0.8321 (1)	0.6953 (2)	0.5812 (4)	0.6619 (3)
Avg Down Jump	0.5000 (4)	0.6326 (3)	0.6575 (2)	0.8446 (1)
<b>Females</b>				
Avg Pr of Moving	73.13 (4)	75.07 (2)	74.49 (3)	76.78 (1)
Prais Index	0.8776 (4)	0.9008 (2)	0.8938 (3)	0.9214 (1)
Avg Pr of Moving Up	43.73 (1)	40.27 (2)	33.69 (4)	38.25 (3)
Avg Pr of Moving Down	29.40 (4)	34.81 (3)	40.80 (1)	38.54 (2)
Avg. Net Pr of Moving Up	14.33 (1)	5.45 (2)	-7.12 (4)	-0.29 (3)
Avg Up Jump	0.9573 (1)	0.8371 (2)	0.6229 (4)	0.7693 (3)
Avg Down Jump	0.4930 (4)	0.8036 (1)	0.7266 (2)	0.7073 (3)

**Table 12(a)**  
**Earnings Mobility Patterns by Immigrant Admission Class for Four-Year Transition**  
**Matrices (Years 1-5), 1994 Landing Cohort**

	<b>Independent Economic</b>	<b>Other Economic</b>	<b>Family Class</b>	<b>Refugee Class</b>
<b>Males</b>				
Avg Pr of Moving	70.22 [2] (95.4)	70.16 [3] (94.7)	69.27 [4] (94.9)	74.47 [1] (96.1)
Prais Index	0.8427 [2] (95.4)	0.8419 [3] (94.7)	0.8312 [4] (94.9)	0.8937 [1] (96.1)
Avg. Pr of Moving Up	43.84 [1] (97.0)	37.05 [2] (92.0)	30.85 [4] (91.8)	34.31 [3] (92.8)
Avg Pr of Moving Down	26.38 [4] (92.8)	33.11 [3] (97.8)	38.42 [2] (97.5)	40.16 [1] (99.0)
Avg Net Pr of Moving Up	17.46 [1]	3.94 [2]	-7.56 [4]	-5.85 [3]
Avg Up Jump	0.9446 [1]	0.7168 [2]	0.5262 [4]	0.6438 [3]
Avg Down Jump	0.3990 [4]	0.4917 [3]	0.5736 [2]	0.6512 [1]
<b>Females</b>				
Avg Pr of Moving	73.95 [2] (94.6)	73.69 [3] (95.9)	75.03 [1] (96.2)	73.33 [4] (95.6)
Prais Index	0.8874 [2] (94.6)	0.8843 [3] (95.9)	0.9003 [1] (96.2)	0.8799 [4] (95.6)
Avg Pr of Moving Up	47.64 [1] (95.7)	42.06 [2] (96.5)	33.34 [4] (97.5)	37.84 [3] (94.0)
Avg Pr of Moving Down	26.31 [4] (92.6)	31.64 [3] (95.1)	41.68 [1] (95.1)	35.49 [2] (97.4)
Avg. Net Pr of Moving Up	21.33 [1]	10.41 [2]	-8.34 [4]	2.34 [3]
Avg Up Jump	1.0546 [1]	0.8829 [2]	0.6010 [4]	0.7375 [3]
Avg Down Jump	0.4350 [4]	0.5210 [3]	0.6951 [1]	0.6074 [2]

Notes: Figures in parentheses are percentages the 4-year mobility values are of the 9-year mobility values in Table 11.  
 Figures in square brackets are rankings across admission classes.

**Table 12(b)**  
**Earnings Mobility Patterns by Immigrant Admission Class for Four-Year Transition**  
**Matrices (Years 6-10), 1994 Landing Cohort**

	<b>Independent Economic</b>	<b>Other Economic</b>	<b>Family Class</b>	<b>Refugee Class</b>
<b>Males</b>				
Avg Pr of Moving	51.25 [4] (73.0)	52.58 [2] (74.9)	51.87 [3] (74.9)	56.64 [1] (76.1)
Prais Index	0.6149 [4] (73.0)	0.6310 [2] (74.9)	0.6224 [3] (74.9)	0.6797 [1] (76.1)
Avg. Pr of Moving Up	31.89 [2] (72.7)	30.45 [3] (82.2)	27.26 [4] (88.4)	32.09 [1] (93.5)
Avg Pr of Moving Down	19.36 [4] (73.4)	22.14 [3] (66.9)	24.60 [1] (64.0)	24.55 [2] (61.1)
Avg Net Pr of Moving Up	12.53 [1]	8.31 [2]	2.66 [4]	7.54 [3]
Avg Up Jump	0.4969 [1]	0.4932 [2]	0.3956 [4]	0.4840 [3]
Avg Down Jump	0.2794 [4]	0.3110 [3]	0.3450 [2]	0.3799 [1]
<b>Females</b>				
Avg Pr of Moving	58.39 [3] (79.0)	57.55 [4] (78.1)	60.34 [1] (80.4)	59.07 [2] (80.6)
Prais Index	0.7007 [3] (79.0)	0.6906 [4] (78.1)	0.7241 [1] (80.4)	0.7088 [2] (80.6)
Avg Pr of Moving Up	36.85 [1] (77.4)	34.19 [2] (81.3)	29.52 [4] (88.5)	33.92 [3] (89.6)
Avg Pr of Moving Down	21.55 [4] (81.9)	23.36 [3] (73.8)	30.82 [1] (73.9)	25.16 [2] (70.9)
Avg. Net Pr of Moving Up	15.30 [1]	10.84 [2]	-1.31 [4]	8.76 [3]
Avg Up Jump	0.6988 [1]	0.6146 [2]	0.4659 [4]	0.5723 [3]
Avg Down Jump	0.3215 [4]	0.3443 [3]	0.4736 [1]	0.3772 [2]

Notes: Figures in parentheses are percentages the years 6-10 mobility values are of the years 1-5 values in Table 12(a).  
 Figures in square brackets are rankings across admission classes.

**Table 13(a)**  
**Nine-Year Transition Matrix for All Male Immigrant Earners in the 1982 Landing Cohort,**  
**Post-Landing Years 1 to 10 (1983-1992)**

1983/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1983	<b>18.38</b>	15.52	34.10	21.24	8.19	2.57	100.0
LO 1983	16.12	<b>15.86</b>	34.60	22.57	8.03	2.81	100.0
LM 1983	11.81	14.71	<b>39.15</b>	24.69	7.33	2.31	100.0
HM 1983	8.76	10.88	35.26	<b>30.56</b>	10.29	4.24	100.0
HI 1983	6.20	7.21	23.79	35.78	<b>20.49</b>	6.54	100.0
VH 1983	2.42	2.85	6.63	18.59	27.41	<b>42.09</b>	100.0
N = 14,750							
<b>Average Summary Transition Probabilities</b>							
Average Prob. of Staying	=			27.76			
Average Prob. of Moving Up/Down	=			72.25			
Prais Mobility Index	=			0.8669			
Average Prob. of Moving Up	=			34.17			
Average Prob. of Moving Down	=			38.07			
Average Net Prob. of Moving Up	=			-3.898			
Average Upward Jump	=			0.6329			
Average Downward Jump	=			0.6259			

**Table 13(b)**  
**Nine-Year Transition Matrix for All Female Immigrant Earners in the 1982 Landing**  
**Cohort, Post-Landing Years 1 to 10 (1983-1992)**

1983/1992	VL 1992	LO 1992	LM 1992	HM 1992	HI 1992	VH 1992	Row Sum
VL 1983	<b>15.82</b>	15.08	29.17	23.11	10.38	6.43	100.0
LO 1983	13.19	<b>19.44</b>	29.34	22.71	8.92	6.40	100.0
LM 1983	11.56	14.96	<b>31.69</b>	25.22	9.34	7.24	100.0
HM 1983	8.41	11.82	32.93	<b>29.52</b>	11.62	5.69	100.0
HI 1983	7.71	9.12	24.18	30.03	<b>17.45</b>	11.51	100.0
VH 1983	4.26	5.11	11.92	18.24	19.16	<b>41.31</b>	100.0
N = 9,180							
<b>Average Summary Transition Probabilities</b>							
Average Prob. of Staying	=			25.87			
Average Prob. of Moving Up/Down	=			74.13			
Prais Mobility Index	=			0.8895			
Average Prob. of Moving Up	=			37.03			
Average Prob. of Moving Down	=			37.10			
Average Net Prob. of Moving Up	=			-0.0733			
Average Upward Jump	=			0.7395			
Average Downward Jump	=			0.6713			

**Table 14(a)**  
**Nine-Year Transition Matrix for All Male Immigrant Earners in the 1988 Landing Cohort,**  
**Post-Landing Years 1 to 10 (1989-1998)**

1989/1998	VL 1998	LO 1998	LM 1998	HM 1998	HI 1998	VH 1998	Row Sum
VL 1989	<b>20.18</b>	16.87	33.64	18.06	7.74	3.50	100.0
LO 1989	15.94	<b>18.31</b>	38.65	18.21	6.42	2.47	100.0
LM 1989	10.01	13.40	<b>43.13</b>	23.48	7.08	2.90	100.0
HM 1989	5.53	6.50	30.95	<b>36.41</b>	14.81	5.80	100.0
HI 1989	3.43	4.06	15.50	35.22	<b>26.16</b>	15.62	100.0
VH 1989	2.68	2.58	7.83	17.40	24.87	<b>44.64</b>	100.0
N = 18,220							
<b>Average Summary Transition Probabilities</b>							
Average Prob. of Staying	=			31.47			
Average Prob. of Moving Up/Down	=			68.53			
Prais Mobility Index	=			0.8223			
Average Prob. of Moving Up	=			35.88			
Average Prob. of Moving Down	=			32.65			
Average Net Prob. of Moving Up	=			3.225			
Average Upward Jump	=			0.6323			
Average Downward Jump	=			0.5148			

**Table 14(b)**  
**Nine-Year Transition Matrix for All Female Immigrant Earners in the 1988 Landing**  
**Cohort, Post-Landing Years 1 to 10 (1989-1998)**

1989/1998	VL 1998	LO 1998	LM 1998	HM 1998	HI 1998	VH 1998	Row Sum
VL 1989	<b>15.34</b>	17.40	37.14	20.21	5.89	4.02	100.0
LO 1989	15.13	<b>17.36</b>	34.33	21.93	7.67	3.59	100.0
LM 1989	10.68	14.73	<b>38.47</b>	23.99	7.88	4.25	100.0
HM 1989	7.03	9.25	33.86	<b>33.89</b>	10.93	5.03	100.0
HI 1989	3.84	4.76	14.65	36.22	<b>27.38</b>	13.16	100.0
VH 1989	2.64	2.49	6.45	15.82	25.42	<b>47.18</b>	100.0
N = 13,810							
<b>Average Summary Transition Probabilities</b>							
Average Prob. of Staying	=			29.94			
Average Prob. of Moving Up/Down	=			70.06			
Prais Mobility Index	=			0.8408			
Average Prob. of Moving Up	=			36.24			
Average Prob. of Moving Down	=			33.83			
Average Net Prob. of Moving Up	=			2.408			
Average Upward Jump	=			0.6636			
Average Downward Jump	=			0.5323			

**Table 15(a)**  
**Earnings Mobility Patterns for Nine-Year Transition Matrices**  
**Across Immigrant Landing Cohorts**

	<b>1982 Landing Cohort</b>	<b>1988 Landing Cohort</b>	<b>1994 Landing Cohort</b>	<b>Average Over Three Cohorts</b>
<b>Males</b>				
Avg Pr of Moving	72.25	68.53	71.80	70.86
Prais Index	0.8669	0.8223	0.8616	0.8503
Avg. Pr of Moving Up	34.17	35.88	37.85	35.97
Avg Pr of Moving Down	38.07	32.65	33.95	34.89
Avg Net Pr Moving Up	-3.898	3.225	3.902	1.076
Avg Up Jump	0.6329	0.6323	0.7590	0.6747
Avg Down Jump	0.6259	0.5148	0.5529	0.5645

**Table 15(b)**  
**Earnings Mobility Patterns for Nine-Year Transition Matrices**  
**Across Immigrant Landing Cohorts**

	<b>1982 Landing Cohort</b>	<b>1988 Landing Cohort</b>	<b>1994 Landing Cohort</b>	<b>Average Over Three Cohorts</b>
<b>Females</b>				
Avg Pr of Moving	74.13	70.06	76.66	73.62
Prais Index	0.8895	0.8408	0.9199	0.8834
Avg. Pr of Moving Up	37.03	36.24	38.63	37.30
Avg Pr of Moving Down	37.10	33.83	38.03	36.32
Avg Net Pr Moving Up	-0.0733	2.408	0.6033	0.979
Avg Up Jump	0.7395	0.6636	0.8136	0.7389
Avg Down Jump	0.6713	0.5323	0.6760	0.6266

**Table 16(a)**  
**Earnings Mobility Patterns for Initial Four-Year Transition Matrices**  
**Across Immigrant Landing Cohorts**

	<b>1982 Landing Cohort (1983-87)</b>	<b>1988 Landing Cohort (1989-93)</b>	<b>1994 Landing Cohort (1995-99)</b>	<b>Average Over Three Cohorts</b>
<b>Males</b>				
Avg Pr of Moving	69.11	62.97	68.22	66.77
Prais Index	0.8293	0.7556	0.8186	0.8012
Avg. Pr of Moving Up	32.85	34.08	35.55	34.16
Avg Pr of Moving Down	36.26	28.90	32.67	32.61
Avg Net Pr Moving Up	-3.402	5.182	2.878	1.553
Avg Up Jump	0.5646	0.5626	0.6795	0.6022
Avg Down Jump	0.5354	0.4843	0.4862	0.5020

**Table 16(b)**  
**Earnings Mobility Patterns for Initial Four-Year Transition Matrices**  
**Across Immigrant Landing Cohorts**

	<b>1982 Landing Cohort (1983-87)</b>	<b>1988 Landing Cohort (1989-93)</b>	<b>1994 Landing Cohort (1995-99)</b>	<b>Average Over Three Cohorts</b>
<b>Females</b>				
Avg Pr of Moving	71.81	65.50	73.27	70.19
Prais Index	0.8617	0.7860	0.8792	0.8423
Avg. Pr of Moving Up	36.53	34.54	37.38	36.15
Avg Pr of Moving Down	35.28	30.96	35.89	34.05
Avg Net Pr Moving Up	1.245	3.582	1.482	2.103
Avg Up Jump	0.6595	0.6096	0.7318	0.6670
Avg Down Jump	0.5875	0.4888	0.5879	0.5547

**Table 17(a)**  
**Earnings Mobility Patterns for Final Four-Year Transition Matrices**  
**For Post-Landing Years 6-10 Across Immigrant Landing Cohorts**

	<b>1982 Landing Cohort</b>	<b>1988 Landing Cohort</b>	<b>1994 Landing Cohort</b>	<b>Average Over Three Cohorts</b>
<b>Males</b>				
Avg Pr of Moving	53.22	54.68	51.69	53.20
Prais Index	0.6386	0.6562	0.6202	0.6383
Avg. Pr of Moving Up	30.62	30.30	29.84	30.25
Avg Pr of Moving Down	22.61	24.39	21.85	22.95
Avg Net Pr Moving Up	8.007	5.912	7.990	7.303
Avg Up Jump	0.4573	0.4766	0.4472	0.4604
Avg Down Jump	0.3423	0.3187	0.3122	0.3244

**Table 17(b)**  
**Earnings Mobility Patterns for Final Four-Year Transition Matrices**  
**For Post-Landing Years 6-10 Across Immigrant Landing Cohorts**

	<b>1982 Landing Cohort</b>	<b>1988 Landing Cohort</b>	<b>1994 Landing Cohort</b>	<b>Average Over Three Cohorts</b>
<b>Females</b>				
Avg Pr of Moving	58.61	55.05	58.45	57.37
Prais Index	0.7034	0.6606	0.7014	0.6885
Avg. Pr of Moving Up	33.02	30.26	31.97	31.75
Avg Pr of Moving Down	25.59	24.80	26.48	25.62
Avg Net Pr Moving Up	7.427	5.457	5.493	6.126
Avg Up Jump	0.5372	0.4817	0.5337	0.5175
Avg Down Jump	0.4054	0.3352	0.3973	0.3793



**Table 18**  
**Average Probability of Moving Up and Down by Earnings Group**  
**Among Immigrants Across Landing Cohorts for 9-Year Transitions**

(a) Males			
	1982 Landing Cohort 1983-1992 (%)	1988 Landing Cohort 1989-1998 (%)	1994 Landing Cohort 1995-2004 (%)
Avg Pr of Moving Up			
- Bottom	74.82	72.78	79.34
- Middle	18.47	23.23	22.82
- Top	0	0	0
Avg Pr of Moving Down			
- Bottom	8.06	7.97	5.77
- Middle	51.47	41.53	47.84
- Top	57.91	55.36	48.65
Avg Pr of Moving			
- Bottom	82.88	80.75	85.11
- Middle	69.94	64.76	70.65
- Top	57.91	55.36	48.65
Avg Net Pr of Moving Up			
- Bottom	66.76	64.81	73.57
- Middle	-33.00	-18.30	-25.02
- Top	-57.91	-55.36	-48.65

**Table 18 continued**

<b>(b) Females</b>			
	<b>1982 Landing Cohort 1983-1992 (%)</b>	<b>1988 Landing Cohort 1989-1998 (%)</b>	<b>1994 Landing Cohort 1995-2004 (%)</b>
Avg Pr of Moving Up			
- Bottom	75.78	76.09	79.91
- Middle	23.54	21..75	23.99
- Top	0	0	0
Avg Pr of Moving Down			
- Bottom	6.60	7.56	6.71
- Middle	50.24	45.01	51.86
- Top	58.69	52.82	61.16
Avg Pr of Moving			
- Bottom	82.38	83.65	85.62
- Middle	73.78	66.76	75.85
- Top	58.69	52.82	61.16
Avg Net Pr of Moving Up			
- Bottom	69.18	68.53	74.20
- Middle	-26.70	-23.26	-27.87
- Top	-58.69	-52.82	-61.16

Sources: Tables 1, 13, and 14.

**Table 19**  
**Earnings Mobility Patterns by Immigrant Admission Class for Nine-Year Transition**  
**Matrices, 1982 Landing Cohort**

	<b>Independent Economic</b>	<b>Other Economic</b>	<b>Family Class</b>	<b>Refugee Class</b>
<b>Males</b>				
Avg Pr of Moving	71.59 (4)	74.50 (3)	74.69 (2)	74.99 (1)
Prais Index	0.8591 (4)	0.8940 (3)	0.8962 (2)	0.8998 (1)
Avg. Pr of Moving Up	36.12 (2)	30.20 (4)	31.31 (3)	36.45 (1)
Avg Pr of Moving Down	35.47 (4)	40.31 (2)	43.38 (1)	38.55 (3)
Avg Net Pr of Moving Up	0.64 (1)	-14.12 (4)	-12.07 (3)	-2.10 (2)
Avg Up Jump	0.7222 (1)	0.5866 (3)	0.5574 (4)	0.6584 (2)
Avg Down Jump	0.5802 (4)	0.7348 (2)	0.7453 (1)	0.6405 (3)
<b>Females</b>				
Avg Pr of Moving	71.93 (4)	77.10 (2)	74.19 (3)	77.71 (1)
Prais Index	0.8631 (4)	0.9252 (2)	0.8903 (3)	0.9325 (1)
Avg Pr of Moving Up	40.25 (1)	38.66 (3)	33.52 (4)	39.34 (2)
Avg Pr of Moving Down	31.68 (4)	38.45 (2)	40.67 (1)	38.38 (3)
Avg Net Pr of Moving Up	8.56 (1)	0.21 (3)	-7.15 (4)	0.96 (2)
Avg Up Jump	0.8486 (1)	0.7819 (3)	0.6340 (4)	0.8245 (2)
Avg Down Jump	0.5483 (4)	0.7057 (3)	0.7405 (2)	0.7485 (1)

Note: Figures in parentheses are rankings across admission classes.

**Table 20**  
**Earnings Mobility Patterns by Immigrant Admission Class for Nine-Year Transition**  
**Matrices, 1988 Landing Cohort**

	<b>Independent Economic</b>	<b>Other Economic</b>	<b>Family Class</b>	<b>Refugee Class</b>
<b>Males</b>				
Avg Pr of Moving	68.99 (4)	71.08 (1)	69.09 (3)	70.23 (2)
Prais Index	0.8279 (4)	0.8530 (1)	0.8290 (3)	0.8428 (2)
Avg. Pr of Moving Up	39.26 (1)	35.64 (2)	32.62 (4)	34.93 (3)
Avg Pr of Moving Down	29.74 (4)	35.44 (2)	36.47 (1)	35.30 (3)
Avg Net Pr of Moving Up	9.52 (1)	0.20 (2)	-3.85 (4)	-0.37 (3)
Avg Up Jump	0.7714 (1)	0.6660 (2)	0.5802 (3)	0.5793 (4)
Avg Down Jump	0.4620 (4)	0.5856 (1)	0.5799 (3)	0.5850 (2)
<b>Females</b>				
Avg Pr of Moving	69.30 (4)	71.30 (2)	71.25 (3)	75.92 (1)
Prais Index	0.8316 (4)	0.8555 (2)	0.8550 (3)	0.9111 (1)
Avg Pr of Moving Up	41.19 (1)	38.58 (2)	33.33 (4)	35.13 (3)
Avg Pr of Moving Down	28.11 (4)	32.72 (3)	37.92 (2)	40.79 (1)
Avg Net Pr of Moving Up	13.08 (1)	5.86 (2)	-4.59 (3)	-5.66 (4)
Avg Up Jump	0.8451 (1)	0.7356 (2)	0.5791 (4)	0.6415 (3)
Avg Down Jump	0.4355 (4)	0.5034 (3)	0.6409 (2)	0.6473 (1)

Note: Figures in parentheses are rankings across admission classes.

**Table 21**  
**Net Characteristics Regression Effects of Major Dimensions on Summary Earnings**  
**Mobility Measures 9-Year Transition Matrices**

	<b>Prob of Moving</b>	<b>Prais Index</b>	<b>Prob of Moving Up</b>	<b>Prob of Moving Down</b>	<b>Net Prob of Moving</b>
Female	2.086 (3.38)	0.0250 (3.38)	2.938 (3.13)	-0.853 (0.79)	3.794 (1.97)
1982 Cohort	-1.404 (1.86)	-0.0169 (1.86)	-4.745 (4.13)	3.344 (2.52)	-8.093 (3.42)
1988 Cohort	-5.096 (6.75)	-0.0612 (6.74)	-4.141 (3.60)	-0.956 (0.72)	-3.185 (1.35)
Other Economic	1.883 (2.16)	0.0226 (2.16)	-4.143 (3.12)	6.030 (3.94)	-10.173 (3.73)
Family Class	1.108 (1.27)	0.0133 (1.27)	-8.860 (6.68)	9.968 (6.51)	-18.823 (6.90)
Refugee Class	3.247 (3.72)	0.0390 (3.72)	-4.780 (3.60)	8.028 (5.25)	-12.802 (4.69)
R <sup>2</sup>	0.815	0.814	0.815	0.779	0.794
F-stat (prob value)	12.46 (0.000)	12.43 (0.000)	12.47 (0.000)	9.99 (0.000)	10.90 (0.000)

Note: Figures in parentheses are (absolute values of) t-ratios, except for the F-stat of the regression. The OLS regressions also include an intercept (which has not been reported).

**Table 22**  
**Net Characteristics Regression Effects of Major Dimensions on Summary Earnings**  
**Mobility Measures 4-Year Transition Matrices**

	<b>Prob of Moving</b>	<b>Prais Index</b>	<b>Prob of Moving Up</b>	<b>Prob of Moving Down</b>	<b>Net Prob of Moving</b>
Female	3.204 (4.31)	0.0384 (4.31)	3.258 (5.37)	-0.052 (0.07)	3.309 (2.80)
1982 Cohort	1.443 (1.21)	0.0173 (1.21)	-2.531 (2.60)	3.973 (3.18)	-6.500 (3.43)
1988 Cohort	-2.273 (2.70)	-0.0273 (2.71)	-1.916 (2.79)	-0.359 (0.41)	-1.557 (1.16)
Other Economic	0.279 (0.27)	0.0034 (0.27)	-4.336 (5.05)	4.617 (4.19)	-8.953 (5.35)
Family Class	0.323 (0.35)	0.0045 (0.35)	-7.882 (9.13)	8.203 (7.44)	-16.033 (9.58)
Refugee Class	3.387 (3.22)	0.0405 (3.22)	-3.904 (4.55)	7.293 (6.61)	-11.198 (6.69)
Years 6-10	-12.389 (14.72)	-0.1487 (14.73)	-4.624 (6.72)	-7.764 (8.78)	3.139 (2.34)
R <sup>2</sup>	0.905	0.905	0.815	0.846	0.768
F-stat (prob value)	54.53 (0.000)	54.77 (0.000)	25.20 (0.000)	31.30 (0.000)	18.93 (0.000)

Note: Figures in parentheses are (absolute values of) t-ratios, except for the F-stat of the regression. The OLS regressions also include an intercept (which has not been reported).

## 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 CI/PubPolicy
		21	Other Immigrant
admcat = 1	Independent Economic	<b>07</b>	<b>Skilled Worker PA, ABR, No SPG</b>
admcat = 2	Other Economic	<b>08</b>	<b>Skilled Worker PA, CAN, SPG</b>
		<b>09</b>	<b>Skilled Worker Spouse &amp; Dependent</b>
admcat = 3	Family Class	<b>01</b>	<b>Family Class</b>
admcat = 4	Refugees	<b>12</b>	<b>Government Assisted Refugee</b>
		<b>13</b>	<b>Privately Sponsored Refugee</b>
		<b>14</b>	<b>Landed in Canada Refugee</b>
		<b>15</b>	<b>Refugee Dependent</b>
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

Notes: Admission categories and IMCAT codes in bold are those included in the landing cohort master files and cohort analysis samples for this study.

**Table A2**  
**Number of Immigrants in the Master Files for the 1982, 1988 and 1994 Landing Cohorts**  
**by YSL and Tax Year of Last Income Tax Record for Each Immigrant**

YSL	Tax Year	Number of Persons	Percent of Total	Cumulative Percent
1982 Landing Cohort				
0	1982	825	1.51	1.51
1	1983	985	1.81	3.32
2	1984	915	1.68	4.99
3	1985	870	1.62	6.61
4	1986	995	1.83	8.44
5	1987	820	1.52	9.96
6	1988	885	1.63	11.59
7	1989	1,005	1.84	13.43
8	1990	1,275	2.34	15.77
9	1991	2,155	3.96	19.73
10	1992	43,655	80.27	100.00
Total		54,385	100.00	
1988 Landing Cohort				
0	1988	775	1.05	1.05
1	1989	1,070	1.45	2.50
2	1990	1,155	1.57	4.07
3	1991	1,270	1.73	5.80
4	1992	1,525	2.07	7.87
5	1993	1,530	2.07	9.95
6	1994	1,575	2.14	12.09
7	1995	1,670	2.27	14.36
8	1996	1,930	2.62	16.97
9	1997	3,005	4.07	21.04
10	1998	58,255	78.96	100.00
Total		73,785	100.00	
1994 Landing Cohort				
0	1994	1,040	1.03	1.03
1	1995	1,525	1.49	2.52
2	1996	1,675	1.64	4.15
3	1997	2,110	2.07	6.22
4	1998	2,530	2.48	8.71
5	1999	2,400	2.35	11.05
6	2000	2,055	2.01	13.06
7	2001	1,885	1.84	14.90
8	2002	2,600	2.54	17.45
9	2003	3,250	3.18	20.63
10	2004	81,220	79.37	100.00
Total		102,335	100.00	

Source: Authors' calculations from the IMDB.



**Table A3**  
**Median Real Earnings Levels (in 2004 dollars) for First and Last Years of Nine-Year**  
**Transition Matrices by Sex and Landing Cohort**

	1982 Cohort	1988 Cohort	1994 Cohort
<b>Males</b>			
s = 0	\$20,879	\$25,131	\$17,808
s = 9	\$39,842	\$38,377	\$35,833
Pct. increase (%)	90.8	52.7	101.2
<b>Females</b>			
s = 0	\$12,300	\$15,409	\$11,356
s = 9	\$23,290	\$24,896	\$23,330
Pct. increase (%)	89.3	61.6	103.4

Source: Authors' calculations from the IMDB.

Note: Median values used in calculating earnings categories in transition matrices for 1- and 4-year transition intervals and for separate immigrant admission classes are found in Abbott and Beach (2011).

**Table A4**  
**Percentage Distribution of Immigrants Across Earnings Categories in Initial Year**  
**of 9-Year Transitions by Landing Cohort**

	Very Low	Low	Lower Middle	Higher Middle	High	Very High
<b>Males</b>						
1982 Cohort	7.11	13.24	29.66	19.49	10.05	20.44
1988 Cohort	5.95	11.12	32.93	26.60	12.96	10.44
1994 Cohort	8.39	12.15	29.46	25.50	11.22	13.27
<b>Females</b>						
1982 Cohort	8.80	14.28	26.92	22.37	12.29	15.33
1988 Cohort	7.74	13.31	28.95	25.04	15.08	9.88
1994 Cohort	9.33	13.51	27.17	22.19	13.05	14.75

Source: Authors' calculations from the IMDB.

**Table A5(a)**  
**Eight-Year Transition Matrix for All Male Earners in Canada 1982-1990**

1982/1990	<b>VL</b>	<b>L</b>	<b>LM</b>	<b>HM</b>	<b>H</b>	<b>VH</b>
VL	<b>15.04</b>	19.16	27.93	21.52	10.60	5.75
L	10.75	<b>19.02</b>	29.31	22.84	11.76	6.31
LM	5.89	11.65	<b>30.19</b>	29.40	14.58	8.29
HM	3.28	5.25	14.62	<b>37.78</b>	26.45	12.62
H	2.18	3.04	7.50	17.72	<b>38.12</b>	31.44
VH	1.85	2.22	4.54	6.41	13.06	<b>71.91</b>

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	35.3
Average Prob. of Moving Up/Down	=	64.7
Prais Mobility Index	=	0.776
Average Prob. of Moving Up	=	46.3
Average Prob. of Moving Down	=	18.3
Average Net Prob. of Moving Up	=	28.0

**Table A5(b)**  
**Eight-Year Transition Matrix for All Female Earners in Canada 1982-1990**

1982/1990	<b>VL</b>	<b>L</b>	<b>LM</b>	<b>HM</b>	<b>H</b>	<b>VH</b>
VL	<b>22.95</b>	24.46	32.21	14.56	4.41	1.39
L	15.24	<b>25.39</b>	37.05	16.09	4.56	1.68
LM	8.56	13.03	<b>40.53</b>	28.45	6.92	2.52
HM	5.10	5.99	17.74	<b>45.08</b>	19.91	6.17
H	3.14	3.53	9.09	18.15	<b>41.58</b>	24.50
VH	2.43	2.52	5.15	7.77	16.89	<b>65.24</b>

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	40.1
Average Prob. of Moving Up/Down	=	59.9
Prais Mobility Index	=	0.718
Average Prob. of Moving Up	=	37.5
Average Prob. of Moving Down	=	22.4
Average Net Prob. of Moving Up	=	15.1

Source: Beach (2006), Table 4.1.

**Table A6(a)**  
**Eight-Year Transition Matrix for All Male Earners in Canada 1991-1999**

1991/1999	VL	L	LM	HM	H	VH
VL	<b>17.48</b>	20.12	29.56	18.89	8.69	5.26
L	11.96	<b>21.22</b>	32.67	20.52	8.39	5.24
LM	6.37	11.43	<b>34.59</b>	28.97	11.75	6.89
HM	3.32	5.03	16.01	<b>40.34</b>	22.78	12.52
H	2.44	3.03	7.28	17.39	<b>37.61</b>	32.24
VH	2.69	2.35	4.44	5.85	12.18	<b>72.48</b>

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	37.3
Average Prob. of Moving Up/Down	=	62.7
Prais Mobility Index	=	0.753
Average Prob. of Moving Up	=	44.1
Average Prob. of Moving Down	=	18.6
Average Net Prob. of Moving Up	=	25.5

**Table A6(b)**  
**Eight-Year Transition Matrix for All Female Earners in Canada 1991-1999**

1991/1999	VL	L	LM	HM	H	VH
VL	<b>25.41</b>	26.62	30.81	12.14	3.60	1.43
L	16.24	<b>28.03</b>	37.51	13.43	3.39	1.40
LM	8.41	13.55	<b>44.41</b>	25.45	5.76	2.42
HM	4.31	5.56	18.90	<b>46.70</b>	18.06	6.48
H	3.25	3.25	8.40	19.65	<b>40.25</b>	25.21
VH	3.02	2.75	5.24	7.82	16.48	<b>64.69</b>

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	41.6
Average Prob. of Moving Up/Down	=	58.4
Prais Mobility Index	=	0.701
Average Prob. of Moving Up	=	35.6
Average Prob. of Moving Down	=	22.8
Average Net Prob. of Moving Up	=	12.8

Source: Beach (2006), Table 4.2.

**Table A7(a)**  
**Twelve-Year Transition Matrix for All Male Earners in Canada 1982-1994**

1982/1994	<b>VL</b>	<b>L</b>	<b>LM</b>	<b>HM</b>	<b>H</b>	<b>VH</b>
Very High	3.1	3.4	6.2	7.2	10.8	<b>69.4</b>
High	3.1	4.3	9.0	14.1	<b>30.4</b>	39.0
High Middle	4.4	6.7	14.9	<b>29.8</b>	25.7	18.6
Low Middle	7.3	12.1	<b>26.0</b>	27.1	15.7	11.8
Low	11.3	<b>17.4</b>	26.3	21.3	13.3	10.4
Very Low	<b>13.8</b>	17.5	25.6	20.7	12.1	10.3

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	31.1
Average Prob. of Moving Up/Down	=	68.9
Prais Mobility Index	=	0.826
Average Prob. of Moving Up	=	49.2
Average Prob. of Moving Down	=	19.6
Average Net Prob. of Moving Up	=	29.6

**Table A7(b)**  
**Twelve-Year Transition Matrix for All Female Earners in Canada 1982-1994**

1982/1994	<b>VL</b>	<b>L</b>	<b>LM</b>	<b>HM</b>	<b>H</b>	<b>VH</b>
Very High	3.3	3.1	5.5	8.1	13.7	<b>66.3</b>
High	3.7	4.1	8.6	15.0	<b>32.4</b>	36.2
High Middle	5.6	6.7	16.0	<b>37.8</b>	22.8	11.2
Low Middle	9.6	12.8	<b>32.0</b>	31.0	9.7	4.9
Low	14.6	<b>21.6</b>	33.1	20.2	6.8	3.7
Very Low	<b>19.9</b>	21.2	31.0	18.0	6.5	3.5

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	35.0
Average Prob. of Moving Up/Down	=	65.0
Prais Mobility Index	=	0.780
Average Prob. of Moving Up	=	43.3
Average Prob. of Moving Down	=	21.7
Average Net Prob. of Moving Up	=	21.6

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

**Table A8(a)**  
**One-Year Transition Matrix for All Male Immigrant Earners in the 1994 Landing Cohort,**  
**Post-Landing Years 1 to 2 (1995-1996)**

<b>1995/1996</b>	<b>VL 1996</b>	<b>LO 1996</b>	<b>LM 1996</b>	<b>HM 1996</b>	<b>HI 1996</b>	<b>VH 1996</b>	<b>Row Sum</b>
VL 1995	<b>27.26</b>	25.91	31.37	10.16	3.30	2.00	100.0
LO 1995	16.88	<b>27.91</b>	36.95	12.26	3.87	2.13	100.0
LM 1995	8.09	14.82	<b>50.70</b>	19.67	4.39	2.34	100.0
HM 1995	3.29	5.51	29.58	<b>47.24</b>	10.00	4.39	100.0
HI 1995	1.81	2.87	8.97	36.52	<b>36.08</b>	13.76	100.0
VH 1995	0.48	0.77	2.22	5.04	16.44	<b>75.05</b>	100.0

N = 25,350

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	44.04
Average Prob. of Moving Up/Down	=	55.96
Prais Mobility Index	=	0.6715
Average Prob. of Moving Up	=	30.42
Average Prob. of Moving Down	=	25.55
Average Net Prob. of Moving Up	=	4.868
Average Upward Jump	=	0.4866
Average Downward Jump	=	0.3455

**Table A8(b)**  
**One-Year Transition Matrix for All Female Immigrant Earners in the 1994 Landing**  
**Cohort, Post-Landing Years 1 to 2 (1995-1996)**

<b>1995/1996</b>	<b>VL 1996</b>	<b>LO 1996</b>	<b>LM 1996</b>	<b>HM 1996</b>	<b>HI 1996</b>	<b>VH 1996</b>	<b>Row Sum</b>
VL 1995	<b>22.82</b>	24.30	33.50	14.12	3.44	1.83	100.0
LO 1995	15.47	<b>24.45</b>	36.45	17.17	4.64	1.82	100.0
LM 1995	9.81	18.32	<b>40.59</b>	21.81	6.47	3.01	100.0
HM 1995	5.09	8.57	29.87	<b>41.39</b>	10.86	4.22	100.0
HI 1995	2.71	4.33	13.32	36.16	<b>31.59</b>	11.89	100.0
VH 1995	1.30	1.58	5.05	7.42	21.56	<b>63.09</b>	100.0

N = 17,045

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	37.32
Average Prob. of Moving Up/Down	=	62.68
Prais Mobility Index	=	0.7521
Average Prob. of Moving Up	=	32.59
Average Prob. of Moving Down	=	30.09
Average Net Prob. of Moving Up	=	2.495
Average Upward Jump	=	0.5392
Average Downward Jump	=	0.4445

**Table A9(a)**  
**One-Year Transition Matrix for All Male Immigrant Earners in the 1994 Landing Cohort,**  
**Post-Landing Years 5 to 6 (1999-2000)**

<b>1999/2000</b>	<b>VL 2000</b>	<b>LO 2000</b>	<b>LM 2000</b>	<b>HM 2000</b>	<b>HI 2000</b>	<b>VH 2000</b>	<b>Row Sum</b>
VL 1999	<b>38.39</b>	29.25	26.13	4.89	1.13	0.22	100.0
LO 1999	17.18	<b>39.69</b>	35.38	6.21	0.99	0.55	100.0
LM 1999	4.66	10.00	<b>67.75</b>	15.28	1.63	0.68	100.0
HM 1999	1.50	2.31	19.24	<b>66.19</b>	9.04	1.73	100.0
HI 1999	1.16	1.13	4.19	22.76	<b>56.07</b>	14.70	100.0
VH 1999	0.47	0.58	1.73	2.95	12.54	<b>81.73</b>	100.0

N = 25,095

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	58.30
Average Prob. of Moving Up/Down	=	41.70
Prais Mobility Index	=	0.5004
Average Prob. of Moving Up	=	24.64
Average Prob. of Moving Down	=	17.07
Average Net Prob. of Moving Up	=	7.568
Average Upward Jump	=	0.3376
Average Downward Jump	=	0.2206

**Table A9(b)**  
**One-Year Transition Matrix for All Female Immigrant Earners in the 1994 Landing**  
**Cohort, Post-Landing Years 5 to 6 (1999-2000)**

<b>1999/2000</b>	<b>VL 2000</b>	<b>LO 2000</b>	<b>LM 2000</b>	<b>HM 2000</b>	<b>HI 2000</b>	<b>VH 2000</b>	<b>Row Sum</b>
VL 1999	<b>30.12</b>	28.65	30.89	7.62	1.83	0.89	100.0
LO 1999	16.91	<b>34.59</b>	36.14	9.50	1.93	0.93	100.0
LM 1999	6.87	14.97	<b>53.80</b>	19.08	3.73	1.55	100.0
HM 1999	2.45	5.15	24.60	<b>54.34</b>	10.27	3.20	100.0
HI 1999	1.07	2.23	7.25	23.06	<b>52.88</b>	13.51	100.0
VH 1999	0.51	0.62	2.46	4.88	15.23	<b>76.29</b>	100.0

N = 20,295

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	50.34
Average Prob. of Moving Up/Down	=	49.66
Prais Mobility Index	=	0.5960
Average Prob. of Moving Up	=	28.29
Average Prob. of Moving Down	=	21.38
Average Net Prob. of Moving Up	=	6.910
Average Upward Jump	=	0.4185
Average Downward Jump	=	0.2897

**Table A10(a)**  
**One-Year Transition Matrix for All Male Immigrant Earners in the 1994 Landing Cohort,**  
**Post-Landing Years 9 to 10 (2003-2004)**

<b>2003/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 2003	<b>47.45</b>	29.85	17.36	3.96	0.78	0.60	100.0
LO 2003	16.86	<b>46.83</b>	30.56	4.00	1.31	0.44	100.0
LM 2003	4.79	9.53	<b>71.10</b>	13.20	1.01	0.36	100.0
HM 2003	1.26	2.10	15.94	<b>70.27</b>	9.20	1.22	100.0
HI 2003	0.55	1.16	3.20	17.79	<b>65.79</b>	11.50	100.0
VH 2003	0.39	0.29	1.30	2.18	9.23	<b>86.60</b>	100.0

N = 23,230

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	64.67
Average Prob. of Moving Up/Down	=	35.33
Prais Mobility Index	=	0.4239
Average Prob. of Moving Up	=	20.89
Average Prob. of Moving Down	=	14.43
Average Net Prob. of Moving Up	=	6.463
Average Upward Jump	=	0.2771
Average Downward Jump	=	0.1839

**Table A10(b)**  
**One-Year Transition Matrix for All Female Immigrant Earners in the 1994 Landing**  
**Cohort, Post-Landing Years 9 to 10 (2003-2004)**

<b>2003/2004</b>	<b>VL 2004</b>	<b>LO 2004</b>	<b>LM 2004</b>	<b>HM 2004</b>	<b>HI 2004</b>	<b>VH 2004</b>	<b>Row Sum</b>
VL 2003	<b>38.68</b>	28.34	24.45	6.62	1.28	0.64	100.0
LO 2003	17.31	<b>44.74</b>	28.74	7.56	1.27	0.38	100.0
LM 2003	7.52	12.22	<b>63.05</b>	14.25	2.24	0.72	100.0
HM 2003	2.40	3.53	17.63	<b>65.74</b>	8.70	2.01	100.0
HI 2003	0.88	1.83	4.46	20.17	<b>62.13</b>	10.54	100.0
VH 2003	0.59	0.84	1.88	3.17	10.39	<b>83.13</b>	100.0

N = 20,010

**Average Summary Transition Probabilities**

Average Prob. of Staying	=	59.58
Average Prob. of Moving Up/Down	=	40.42
Prais Mobility Index	=	0.4851
Average Prob. of Moving Up	=	22.96
Average Prob. of Moving Down	=	17.47
Average Net Prob. of Moving Up	=	5.487
Average Upward Jump	=	0.3313
Average Downward Jump	=	0.2387



**Table A11**  
**Average Probability of Moving Up and Down by Earnings Group**  
**Among Immigrants by Speeds of Earnings Adjustment for 1994 Landing Cohort**

(a) Males			
	Full 9-Yr. Transition 1995-2004 (%)	Initial 4-Yr. Transition 1995-1999 (%)	Final 4-Yr. Transition 2000-2004 (%)
Avg Pr of Moving Up			
- Bottom	79.34	75.14 (94.7)	59.38 [79.0]
- Middle	22.82	21.01 (92.1)	20.08 [95.6]
- Top	0	0	0
Avg Pr of Moving Down			
- Bottom	5.77	6.86 (118.9)	8.87 [129.3]
- Middle	47.84	46.54 (97.3)	28.70 [61.7]
- Top	48.65	42.69 (87.7)	27.22 [63.8]
Avg Pr of Moving			
- Bottom	85.11	82.00 (96.3)	68.25 [83.2]
- Middle	70.65	67.55 (95.6)	48.78 [72.2]
- Top	48.65	42.69 (87.7)	27.22 [63.8]
Avg Net Pr of Moving Up			
- Bottom	73.57	68.28 (92.8)	50.51 [74.0]
- Middle	-25.02	-25.53 (102.0)	-8.62 [33.8]
- Top	-48.65	-42.69 (87.7)	-27.22 [63.8]

**Table A11 continued**

<b>(b) Females</b>			
	<b>Full 9-Yr. Transition 1995-2004 (%)</b>	<b>Initial 4-Yr. Transition 1995-1999 (%)</b>	<b>Final 4-Yr. Transition 2000-2004 (%)</b>
Avg Pr of Moving Up			
- Bottom	79.91	78.78 (98.6)	65.43 [83.1]
- Middle	23.99	22.23 (92.7)	20.32 [91.4]
- Top	0	0	0
Avg Pr of Moving Down			
- Bottom	5.71	6.21 (108.8)	8.34 [134.3]
- Middle	51.86	49.60 (95.6)	36.90 [74.4]
- Top	61.16	54.14 (88.5)	31.48 [58.1]
Avg Pr of Moving			
- Bottom	85.62	84.99 (99.3)	73.77 [86.8]
- Middle	75.85	71.83 (94.7)	57.22 [79.7]
- Top	61.16	54.14 (88.5)	31.48 [58.1]
Avg Net Pr of Moving Up			
- Bottom	74.20	75.57 (101.8)	57.09 [75.5]
- Middle	-27.87	-27.37 (98.2)	-16.58 [60.6]
- Top	-61.16	-54.14 (88.5)	-31.48 [58.1]

Sources: Tables 1, 4, and 5.

Notes: Figures in parentheses are percentages the initial 4-year mobility values are of the full 9-year mobility values.

Figures in square brackets are percentages the years 6-10 mobility values are of the initial 4-year mobility values.

**Table A12(a)**  
**Earnings Mobility Patterns by Immigrant Admission Class for Four-Year Transition**  
**Matrices (Years 1-5), 1982 Landing Cohort**

	<b>Independent Economic</b>	<b>Other Economic</b>	<b>Family Class</b>	<b>Refugee Class</b>
<b>Males</b>				
Avg Pr of Moving	68.80 [4] (96.1)	71.82 [2] (96.4)	71.32 [3] (95.5)	71.95 [1] (95.9)
Prais Index	0.8256 [4] (96.1)	0.8618 [2] (96.4)	0.8559 [3] (95.5)	0.8634 [1] (95.9)
Avg. Pr of Moving Up	35.32 [2] (97.8)	30.13 [3] (99.8)	28.73 [4] (91.8)	35.67 [1] (97.9)
Avg Pr of Moving Down	33.47 [4] (94.4)	41.69 [2] (103.4)	42.59 [1] (98.2)	36.29 [3] (94.1)
Avg Net Pr of Moving Up	1.85 [1]	-11.56 [3]	-13.86 [4]	-0.61 [2]
Avg Up Jump	0.6431 [1]	0.5377 [3]	0.4722 [4]	0.6116 [2]
Avg Down Jump	0.4899 [4]	0.6199 [2]	0.6516 [1]	0.5691 [3]
<b>Females</b>				
Avg Pr of Moving	69.33 [4] (96.4)	74.01 [2] (96.0)	72.20 [3] (97.3)	75.58 [1] (97.3)
Prais Index	0.8320 [4] (96.4)	0.8881 [2] (96.0)	0.8664 [3] (97.3)	0.9069 [1] (97.3)
Avg Pr of Moving Up	39.64 [2] (98.5)	36.29 [3] (94.4)	33.73 [4] (100.6)	40.29 [1] (102.4)
Avg Pr of Moving Down	29.69 [4] (93.7)	37.72 [2] (98.1)	38.47 [1] (94.6)	35.28 [3] (91.9)
Avg Net Pr of Moving Up	9.95 [1]	-1.43 [3]	-4.73 [4]	5.01 [2]
Avg Up Jump	0.7706 [1]	0.6759 [3]	0.5809 [4]	0.7369 [2]
Avg Down Jump	0.4942 [4]	0.6243 [2]	0.6514 [1]	0.5946 [3]

Notes: Figures in parentheses are percentages the 4-year mobility values are of the 9-year mobility values in Table 18.

Figures in square brackets are rankings across admission classes.

**Table A12(b)**  
**Earnings Mobility Patterns by Immigrant Admission Class for Four-Year Transition**  
**Matrices (Years 6-10), 1982 Landing Cohort**

	<b>Independent Economic</b>	<b>Other Economic</b>	<b>Family Class</b>	<b>Refugee Class</b>
<b>Males</b>				
Avg Pr of Moving	53.15 [4] (77.3)	57.26 [2] (79.7)	54.21 [3] (76.0)	57.33 [1] (79.7)
Prais Index	0.6378 [4] (77.8)	0.6871 [2] (79.7)	0.6506 [3] (76.0)	0.6879 [1] (79.7)
Avg. Pr of Moving Up	33.04 [1] (93.5)	29.02 [3] (96.3)	28.47 [4] (99.1)	29.63 [2] (83.1)
Avg Pr of Moving Down	20.10 [4] (60.1)	28.24 [1] (67.7)	25.74 [3] (60.4)	27.70 [2] (76.3)
Avg Net Pr of Moving Up	12.94 [1]	0.78 [4]	2.73 [2]	1.93 [3]
Avg Up Jump	0.5181 [1]	0.4285 [3]	0.4121 [4]	0.4478 [2]
Avg Down Jump	0.3064 [4]	0.4043 [2]	0.3955 [3]	0.4315 [1]
<b>Females</b>				
Avg Pr of Moving	60.51 [2] (87.3)	57.97 [3] (78.3)	57.61 [4] (79.8)	64.14 [1] (84.9)
Prais Index	0.7262 [2] (87.3)	0.6957 [3] (78.3)	0.6913 [4] (79.8)	0.7697 [1] (84.9)
Avg Pr of Moving Up	37.71 [1] (95.1)	34.13 [3] (94.0)	30.30 [4] (89.8)	34.95 [2] (86.7)
Avg Pr of Moving Down	22.80 [4] (76.8)	23.84 [3] (63.2)	27.31 [2] (71.0)	29.19 [1] (82.7)
Avg Net Pr of Moving Up	14.91 [1]	10.29 [2]	2.99 [4]	5.76 [3]
Avg Up Jump	0.6471 [1]	0.5574 [3]	0.4808 [4]	0.5887 [2]
Avg Down Jump	0.3584 [4]	0.3803 [3]	0.4367 [2]	0.4692 [1]

Notes: Figures in parentheses are percentages the years 6-10 mobility values are of the years 1-5 values in Table A11(a).

Figures in square brackets are rankings across admission classes.

**Table A13(a)**  
**Earnings Mobility Patterns by Immigrant Admission Class for Four-Year Transitions**  
**(Years 1-5), 1988 Landing Cohort**

	<b>Independent Economic</b>	<b>Other Economic</b>	<b>Family Class</b>	<b>Refugee Class</b>
<b>Males</b>				
Avg Pr of Moving	64.00 [2] (92.8)	62.15 [4] (87.4)	62.32 [3] (90.2)	69.19 [1] (98.5)
Prais Index	0.7679 [2] (92.8)	0.7458 [4] (87.4)	0.7478 [3] (90.2)	0.8302 [1] (98.5)
Avg. Pr of Moving Up	38.50 [1] (98.1)	33.51 [2] (94.0)	30.63 [4] (93.9)	32.19 [3] (92.2)
Avg Pr of Moving Down	25.50 [4] (85.7)	28.63 [3] (80.8)	31.69 [2] (86.9)	37.00 [1] (104.8)
Avg Net Pr of Moving Up	13.00 [1]	4.88 [2]	-1.05 [3]	-4.82 [4]
Avg Up Jump	0.7114 [1]	0.5979 [2]	0.4912 [4]	0.5010 [3]
Avg Down Jump	0.4214 [4]	0.4942 [3]	0.5433 [2]	0.6793 [1]
<b>Females</b>				
Avg Pr of Moving	66.44 [3] (95.9)	65.86 [4] (92.4)	67.01 [2] (94.0)	71.65 [1] (94.4)
Prais Index	0.7973 [3] (95.9)	0.7903 [4] (92.4)	0.8041 [2] (94.0)	0.8598 [1] (94.4)
Avg Pr of Moving Up	41.50 [1] (100.8)	36.81 [2] (95.4)	29.80 [4] (89.4)	34.89 [3] (99.3)
Avg Pr of Moving Down	24.94 [4] (88.7)	29.05 [3] (88.8)	37.21 [1] (98.1)	36.76 [2] (90.1)
Avg Net Pr of Moving Up	16.56 [1]	7.76 [2]	-7.40 [4]	-1.87 [3]
Avg Up Jump	0.8286 [1]	0.6774 [2]	0.4956 [4]	0.6124 [3]
Avg Down Jump	0.3832 [4]	0.4504 [3]	0.6200 [2]	0.6413 [1]

Notes: Figures in parentheses are percentages the 4-year mobility values are of the 9-year mobility values in Table 19.

Figures in square brackets are rankings across admission classes.

**Table A13(b)**  
**Earnings Mobility Patterns by Immigrant Admission Class for Four-Year Transitions**  
**(Years 6-10), 1988 Landing Cohort**

	Independent Economic	Other Economic	Family Class	Refugee Class
<b>Males</b>				
Avg Pr of Moving	54.09 [4] (84.5)	55.75 [2] (89.7)	54.76 [3] (87.9)	57.20 [1] (82.7)
Prais Index	0.6491 [4] (84.5)	0.6690 [2] (89.7)	0.6571 [3] (87.9)	0.6864 [1] (82.7)
Avg. Pr of Moving Up	32.01 [1] (83.1)	29.30 [3] (87.4)	27.92 [4] (91.2)	30.63 [2] (95.2)
Avg Pr of Moving Down	22.08 [4] (86.6)	26.45 [3] (92.4)	26.84 [1] (84.7)	26.57 [2] (71.8)
Avg Net Pr of Moving Up	9.93 [1]	2.85 [3]	1.07 [4]	4.06 [2]
Avg Up Jump	0.5311 [1]	0.4642 [3]	0.4237 [4]	0.4780 [2]
Avg Down Jump	0.2890 [4]	0.3492 [3]	0.3525 [1]	0.3506 [2]
<b>Females</b>				
Avg Pr of Moving	57.86 [2] (87.1)	52.54 [4] (79.8)	56.52 [3] (84.3)	58.08 [1] (81.1)
Prais Index	0.6943 [2] (87.1)	0.6305 [4] (79.8)	0.6782 [3] (84.3)	0.6969 [1] (81.1)
Avg Pr of Moving Up	36.04 [1] (86.8)	29.01 [4] (78.8)	29.45 [3] (98.8)	30.72 [2] (88.0)
Avg Pr of Moving Down	21.82 [4] (87.5)	23.54 [3] (81.0)	27.07 [2] (72.7)	27.36 [1] (74.4)
Avg Net Pr of Moving Up	14.22 [1]	5.47 [2]	2.38 [4]	3.36 [3]
Avg Up Jump	0.6391 [1]	0.4637 [3]	0.4518 [4]	0.4955 [2]
Avg Down Jump	0.2961 [4]	0.3082 [3]	0.3777 [1]	0.3753 [2]

Notes: Figures in parentheses are percentages the years 6-10 mobility values are of the years 1-5 values in Table A12(a).

Figures in square brackets are rankings across admission classes.

## Notes

1. They actually look at weekly wage and salary income of full-time workers in the labour market using 1981 and 2001 Census cross-sectional data.
2. IMDB data on age at landing was used only in selecting the analysis samples for each landing cohort on which the current study is conducted.
3. Current age, current educational attainment, and current years of work experience are three important worker characteristics that likely vary over time but are not measured in the IMDB because they are not captured in the data from annual personal income tax returns.
4. All earnings data in this study are earnings from paid employment only, and therefore do not include net self-employment income. We also exclude from this study business class immigrants, for whom self-employment income would obviously be important. Business class immigrants certainly warrant further investigation, but such an investigation is beyond the scope of the current study, which is restricted to assembling evidence on the wage and salary earnings of immigrants in paid employment. Paid workers constitute the vast majority of employed immigrants.
5. The IMDB does not contain information on immigrants' weeks worked per year, hours worked per week, or full-time versus part-time status; it is therefore not possible to measure immigrants' annual hours of work or their average hourly or weekly earnings.
6. At the time this project began, 1994 was the most recent immigrant landing cohort for which a full ten years of post-landing income tax data was available, and 2005 was the most recent year for which annual income tax data were available in the IMDB.
7. For a detailed discussion of the dating of these Canadian recessions, see Cross (2009).
8. All figures on the number and distribution of immigrants to Canada cited in this paragraph are from Citizenship and Immigration Canada (2009), pp. 3-4.
9. All absolute frequency counts cited in this paper are only approximate because they are randomly rounded to the nearest multiple of 5 by Statistics Canada.
10. The reason for this minimum real annual earnings cutoff is to exclude those immigrants with only a weak, occasional or intermittent attachment to the employed labour force. An investigation of immigrant movements into and out of employment would be worthwhile, but is beyond the scope of the current study.

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