Report on the

Labour Market Experience of Immigrants to Alberta:

A Panel Approach

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Table of Contents

Tables

Figures

Executive Summary

Study Objectives

The objectives of this study are:

(a) a comparison of the economic performance of different immigrant categories landing in Alberta;

(b) a comparison of the economic performance of immigrants landing in Alberta with that of the Canadian born;

(c) a profile of immigrants landing in Alberta who are likely to remain in the province;

(d) identification of immigrant and settlement activities that may require government review.

The study uses a panel drawn from the Immigration Data Base (IMDB) and evaluates the labour market experience of panel members over the period from 1982 to 1988. The IMDB panel, especially constructed for this study, consists of 9,445 immigrants who landed in Alberta in 1980 and 1981, and who filed an income tax return in Alberta in 1982. The panel membership accounts for 24.7% of the immigrants who landed in Alberta in 1980 and 1981.

The 1982 membership of the panel consisted of 5,585 males and 3,860 females. Relative gender composition changed scarcely at all over the period.

The study covers the years from 1982 to 1988 (the last year for which the IMDB is presently available). This period was one of slow employment growth in Alberta. The growth in jobs was at an annual rate of 0.90%, substantially below the national job growth rate of 2.38% during the same years.

General Findings

Over the 1982-86 years 1,235 people left the panel, an attrition or exit rate of 13.1%. The 1982-86 years are used since the IMDB does not yet include the records of late tax filers in either 1987 or 1988. The attrition numbers represent failure to file a tax return indicating Alberta domicile. Reasons for the failure to file a return include migration to another province; emigration from Canada; no income to report; or death.

During the years covered the age profile of panel members changed somewhat. The relative importance of those in the 20-29 age group at landing declined and all other age groups increased.

The panel's average level of educational attainment exceeded that of the 15 and older Alberta population.

At landing only 64% of the panel declared a knowledge of the English language. Historically over 98% of Albertans can speak English. The language variable most clearly distinguishes the panel from members of the Alberta labour force.

89.4% of the panel received income from employment in 1982. In 1988 the proportion was 85.7%. The proportion of the panel with income from self employment rose from 10.8% to 17.7%.

Over the 1982-86 period more than one half of the panel (51.5%) did not draw unemployment insurance benefits. Seventeen percent drew benefits in one year, 16.5% drew benefits in two years, 8.5% drew benefits in three years, 4.7% drew benefits in four years, and 1.7% drew benefits in each of the years 1982-86.

In 1982 the average income of panel members was 86.6% of the average tax filer income of all Albertans. By 1988 the average income of panel members was 109.8% of the Alberta average. The panel average income reached the Alberta average in 1986. If equality is a rough proxy for effective labour market integration then this appears to have occurred within a 5-6 year period.

Rates of growth in average income for younger and older age groups in the 1982-88 period differ substantially. The average nominal income of the 20-39 cohort grew by 52.7%, while the average nominal income of the 40-59 group increased by 17.9%

In 1982 the income distribution of panel members was skewed toward the lower income levels (the median nominal income was $14,400). In 1988 the skewness was less evident with more panel members moving into the middle income range (median nominal income was $20,700). Median income increased by 43.8% while the price level in Alberta as measured by the CPI rose by 22.6%.

The average income of females in the panel was measurably lower than that of males but displayed a more rapid rate of increase. Female average income as a percentage of male average income amounted to 40.5% in 1982 and 49.3% in 1988.

The industry composition of jobs held by members of the panel differed in a number of respects from the all-Alberta distribution. Most notable is the proportion of jobs held by panel members in manufacturing (double the Alberta share) and the share in construction and transportation, and in trade (in both instances two thirds of the Alberta share).

Findings with Respect to Immigrant Class

The economic position of each immigrant class improved as length of residence in Canada increased. However, there was wide income dispersion between immigrant classes. The average income of those in the independent class exceeded the panel average by 87% in 1982 and 77% in 1986. At the other end of the scale was the family class with an average income approximately 32% below the panel average in both 1982 and 1988.

All immigrant groups displayed an increase in both nominal and real average income over the 1982-88 period.

The study employs the ratio of UIC benefit income to UIC employee premium payments as a measure of the unemployment experience of immigrant classes. The wide dispersion in the early years with refugees showing the highest and independents the lowest ratios can be interpreted as measure of the varying degrees of success that individual immigrant categories experienced in adapting to the Alberta labour market. The narrowing of the ratio across classes in the later years of the study with refugee and family class experience much closer to the all-Alberta average suggests more effective integration. From 1985 on the all panel average was close to the all Alberta average.

In terms of income growth by age and immigrant class, those in the older group (40-59) during the 1982-88 period failed to keep pace with inflation, so that their average real income, as distinct from nominal income, declined. On the other hand, the average real income—as well as average nominal income—increased between 1982 and 1988 for the younger age cohort (20-39) in every immigrant class.

There were gender differences evident in the integration of immigrants into the labour market. Both male and female independents adapted quickly. In the family class males experience less unemployment than females. But, in the assisted relative and refugee groups females on average appear to integrate more readily.

The unemployment experience of panel members for each immigrant class diminishes with levels of educational attainment.

All immigrant groups showed the highest rate of exit from the panel in the first year, i.e. in 1983. This is early in the 'settling in' process experienced by the immigrant.

Attrition or exit rates from the panel by immigration class were highest for the refugee group. This is the immigration category whose members have neither a social nor an economic tie on landing to the province. Socially based classes of immigrants, i. e. the family and assisted relative classes show the lowest exit rates.

Findings on Language Ability

A good working knowledge of the English language is central to the efficient participation of the immigrant in the labour force. Efficient participation means the ability of the immigrant to use training, expertise, and experience to the fullest extent in the Alberta labour market, so that not only the immigrant but also Alberta society benefits to the maximum.

Some indication of the value of a head start in knowledge of the English language is apparent in the panel income data. In 1982 those who declared a knowledge of English on landing had average income 1.78 times greater than those who declared no English ability. Significantly, by 1988 the gap had narrowed scarcely at all, with the income declared by English speakers on landing 1.74 times the average income of those having no English.

The panel evidence respecting language together with results of the Census analysis found in Appendix A gives witness to the de facto placement of immigrants without a knowledge of English into an inferior labour market position at their first job, irrespective of their formal qualifications. This is the penalty for lack of the universal communication skill. Once placed in that position, the immigrant, on average, experiences restricted job search opportunities. These are highly dependent on previous experience in the Alberta labour market. The effect is that future long term options for the non-English speaking are restricted relative to their technical capacities. These unfortunate conditions are reinforced by prior experience in the provincial labour market.

For immigrants who land without a knowledge of English, the findings underscore the necessity of ESL training. While our study deals with labour force adjustment, it is reasonable to infer that funding specifically tied to ESL for other members of the household should enable a much easier integration into Canadian society.

Part 1:
The Alberta Context

Though the importance of immigration to the growth and evolution of Alberta's population is generally understood, impacts on the Alberta economy are not easy to measure. In fact, studies of the economic impact of immigration at the provincial level are limited. Knowledge obtained through national and regional investigations permit only a selective application of their findings to the Alberta experience. Moreover, national studies do not provide knowledge about the labour market experience of those immigrants who landed in the province and remained (i.e., those who did not engage in secondary migration), nor do they yield information about the industrial composition of their employment (including self-employment) relative to that of the employed labour force, nor do they provide information about the labour market experience of alternative classes of immigrants.

A further limitation in the application of the findings of national studies to the province occurs because of the unique characteristics of the Alberta economy. Alberta's economy differs significantly from the national. There is a relatively high proportion of employment in the agricultural and non-agricultural resource industries (13%), and the volatility of several key characteristics in Alberta such as provincial gross domestic product (GDP), per capita income, and employment is the highest in Canada (Chambers and Percy 1992). As a consequence, the labour force integration of immigrants into Alberta's economy raises some issues that are indeed unique, at least within the Canadian context. Other distinguishing features of the Alberta economy include a population whose average age is below the national average, but with levels of education and per capita income above the Canadian average.

Alberta Advanced Education and Career Development (AECD) commissioned this study to address a number of questions concerning the integration of immigrants into the Alberta economy. The method used identifies the group of immigrants who landed in the province in 1980 and 1981, then tracks their economic performance in each tax year from 1982 to 1988. Identification of a cohort of immigrants, permits assessment of their ability to settle into the Alberta economy by providing the group's characteristics and performance over that seven year period.

Since the approach in the study which follows is longitudinal, it is necessary to provide context by offering a summary of the macro dimensions of the Alberta labour market during the years covered by the Report. The labour force and employment performance of the Alberta economy during the period 1982-88, when contrasted with the period from 1973-81, illustrates the province's economic volatility. During the years from 1973-81, the Alberta labour force grew from 746,000 to 1,197,000, and employment grew from 706,000 to 1,151,000. These changes amounted to annual average growth rates of 5.90% and 6.11%, respectively. The minimum annual rate of employment increase during these years was 4.5% in 1975. In contrast, during the 1982-88 years the Alberta labour force grew from 1,221,000 to 1,290,000, an annual rate of 0.90%, while employment increased from 1,127,000 to 1,187,000, an annual rate of 0.86%. Deviations of annual growth rates about the 1982-88 average, particularly in employment, were substantial and reflected the general volatility of the Alberta economy. They varied from a negative annual growth in employment of -2.3% in 1983 (and -2.2% in 1982) to a positive rate of 3.5% in 1988.

In fact, Alberta experienced two recessions measured by employment during this period, the first encompassing the years 1982 through 1984, and the second following upon the energy price collapse in 1986 and early 1987. We have therefore a volatile temporal setting in which to assess immigrant integration into the provincial economy. For comparative purposes the Canadian labour force and

employment increased an annual rates of 1.78% and 2.38%, respectively. In the case of employment annual rates of growth in the nation as a whole varied from a maximum of 3.5% in 1988, to a minimum of 3.2% in 1982. Positive employment growth rates in the national economy substantially exceeded those in Alberta for all years with the exception of 1988. In sum our study encompasses a period when the Alberta labour market experienced what can be realistically described as fairly difficult economic circumstances.

Part 2:

The Objectives of the Research and the Data Sources

Objectives of the Research

This study has the following objectives:

1. to compare the economic performance of different classes of immigrants landing in Alberta;
2. to compare the economic performance of immigrants to Alberta with the Canadian born;
3. to develop a profile of immigrants landing in Alberta who are likely to remain in the province;
4. to identify immigration and settlement policy areas that may require government review.

Methodology

The longitudinal Immigration Data Base (IMDB), whose character will be described in the following section of the report, permits researchers to follow the labour market experience of a selected "panel" or group over time. In this report, we use the data to describe the labour market performance of an identified group of immigrants in the years following their arrival. Those selected had to meet two basic conditions: they had to have landed in Alberta in the two calendar years of 1980 and 1981, and they had to have filed an income tax return in 1982. Their experience through the 1980s, and specifically from 1982 to 1988, is presented in the Report. (Unfortunately, the analysis must end in 1988 because at the present time the coverage of the IMDB does not extend beyond that year).

At certain points in the analysis data from the 1991 Census is introduced to supplement issues related to immigrant performance that arise from information contained in the IMDB. The primary contribution of the study, and one which is entirely new, is knowledge about the integration of one particular group of immigrants into Alberta's economy during a period of less than satisfying employment opportunities. It is unfortunate that the IMDB presently terminates in 1988, but the results of this study are suggestive of the great benefits of using the IMDB as a source for monitoring the labour force performance of immigrants.

Data Sources

Citizenship and Immigration Canada (CIC) maintains a database on immigrant performance linking together several administrative files. With the assistance of Statistics Canada, CIC has been able to combine the permanent admission files of a sample of immigrants with their yearly income tax returns. The resulting IMDB is a source of information relatively new to researchers. Early use of the IMDB as a policy development tool has shown promise. However, the fact that the primary objectives in setting up the files did not include social science research, gives rise to difficulties in extracting economic and demographic information required to meet specific research objectives. That has been the case in this project. The two most obvious are the cost of extracting data from IMDB, and the fact that IMDB is

not presently accessible in a form allowing ready analysis of the temporal experience of a consistent cohort of immigrants landing in a given year. That fact required special compilations by Statistics Canada to meet study objectives.

As indicated in the preceding section, we have also used 1991 Census data at several points in the study. This data is useful for analyzing immigrant performance by year of landing, but does not permit analysis of either immigrant performance by class, or by province of landing.

Confidentiality

In the analytical approach that we have adopted, the most appropriate research condition would be direct access to the panel data. The circumstances under which this could be possible would be a panel stripped of information that might possibly be used to identify individual cases together with a coding of the records to assure confidentiality. The study group would then be completely available to the researchers, enabling them to manipulate and evaluate the data in many dimensions. A key point in undertaking social science research is that many research questions, unforeseen in the formulation of a research proposal, arise once the project is in process, and ready access to the data is essential for them to be addressed in an effective fashion. But in our research the circumstances were far from the ideal. The investigators were inhibited by the need to forward sets of particular requests to Statistics Canada for data, and by the serious disadvantage of being forced to "guess" at the aggregation structure needed to address specific information requirements.

The maintenance of confidentiality of information on an individual's immigration visa and tax return is the principal concern of Statistics Canada when extracting information from the IMDB. The result: researchers do not have access to any individual records in the IMDB, nor could they infer individual records from any data constructed from the IMDB. This is a necessary precaution given the personal liability (rather than the organization's liability) present in the Statistics Act. However, there is the important unresolved question of how social science research can, in the conditions that presently exist, make effective use of the IMDB.

Statistical validity of the data

A second complication is the statistical validity of the IMDB. Some research has been conducted to test if the sample of immigrants contained in the IMDB is a statistically representative sample of the Canada's immigrant population (Carpentier and Pinsonneault, 1994). Their research found that individuals between the ages of 25 and 49 were over-represented in the IMDB. The bias may be systemic because inclusion in the IMDB is conditional on making a match between a Landed Immigrant Data System (LIDS) document and a tax return. A likely source of bias is the evidence that male age groups 15-24 and 50 and over may on average file fewer returns than the entire population 15 and over, a result of the fact that labour force participation rates for these two age groups are less than participation rates for the age eligible population as a whole. If this bias permeates the entire sample, then there are probably systemic biases in the Alberta subset of the IMDB. Even if biases in the Alberta sample are absent, it is clear that the representative quality of the data will decline as the study group shrinks (for instance, the size of the data cells analyzed will fall with higher orders of cross tabulations).

Structural problems with the data

For the years 1980 to 1986 the records in the IMDB reflect a rigorous matching protocol between the LIDS and up-to-date tax records. This means that through 1986 late tax filings have been incorporated into the IMDB. However, after 1986 the tax records used in the IMDB may be missing those who filed late. The effect is that some attrition in the cohort between 1986 and the years 1987 and 1988 may result from late tax filing rather than economic influences (such as the recession in Alberta occasioned by the energy price collapse of 1986). The matching protocol is just as rigorous in 1987 and 1988 as in earlier years, but the matches are made on an incomplete tax filer data base.

In a sense we have two data sets to describe our study group, one from 1982 to 1986, the other for 1987 and 1988. Both Statistics Canada and CIC believe late filing is a random event, so that the distribution of the cohort across variables and calculations of variable averages should not be affected by having two data sets. However, calculations that rely on straight counts through time, like attrition and mobility, should not be made across the two data sets. So, for example, we can calculate the rate of annual exit from the cohort for the five years to 1986, but we cannot calculate the exit rates that cross between 1986 and 1987, and 1986 and 1988 without introducing the late tax filer distortion.

Types of information derivable from the data

Researchers must be clear that there are two broad types of information available in the IMDB: static information based on declarations at landing and dynamic information that is updated each year. Therefore, the IMDB contains some information with no time dimension, and other variables which are time dependent. The distinction is crucial in evaluating and applying the information from the IMDB. The more important static variables include knowledge of an official language at time of landing. Therefore an immigrant who is in the non-English speaking category at landing remains so classified throughout the study period irrespective of whether, if at all, and under what circumstances an English language capability is acquired. Similarly, a declaration of occupation is static, and may not correctly reflect the manner in which an immigrant participates in the Alberta labour force. And finally, the declaration of educational attainment is static. The dynamic variables include income sources declared each year on the immigrant's tax form. In general the static information is derived from the LIDS documents and the dynamic information comes from the tax returns and income statements.

Part 3:

A General Description of the 1980/81 Immigrants that Make Up the Study Group

Introduction

Part 3 of this report shows the immigrant class composition of landings in Alberta in 1980 and 1981. It then summarizes the socio-economic profile of the panelists. The profile reports age and gender distribution, educational attainment, language ability, average income and its sources, income distribution, unemployment incidence, and attrition from the panel for the entire group over the years covered by the study.

Composition of Immigrant Landings: 1980 and 1981

There were 18,841 immigrants of all ages who landed in Alberta in 1980 and another 19,330 who arrived in 1981. Note that these are immigrants of all ages. The immigrant class composition of landings in Alberta has been reported by the Alberta Immigration and Settlement Branch as follows:

Immigrant classification is one in which each landed household member (irrespective of age) is grouped with the principal applicant, generally, in the case of households, the male spouse.

A question arising about the applicability of study results concerns the degree to which the makeup of landings in Alberta (as reported in Table 1 for 1980 and 1981) is representative of immigration patterns during the 1980s. While not entirely representative because of significant changes in immigration regulations during the decade, we can say that it more nearly resembles the patterns in the late 1980s and early 1990s than the mid 1980s when national, and therefore Alberta immigration landings, declined by approximately one-third from 1980-81 levels. The decline in the middle years of the decade was accounted for primarily by lower admissions on grounds of compassion and family reunion.

From the immigrant population of 38,171 mentioned above, some 9,445 (24.7%) were selected for inclusion in the IMDB. There are three ways that the global total of 38,171 is reduced to leave the IMDB group we are examining. The first screens by age, eliminating those younger than 13 at their time of arrival. The second condition that must be met is that those 13 and over must have filed income tax returns in 1982. Lastly, those who meet the second screening condition must have been selected for inclusion in the IMDB. Those meeting these three screening conditions constitute the 9,445 people in the cohort whose economic performance is tracked through time in this study.

Table 1: Distribution of Immigration by Class

Immigrant Class	1980	1981
Family	28.4%	32.1%
Refugee	29.3	14.2
Assisted Relatives	8.2	12.1
Independents	31.8	38.9
Business	2.3	2.6

Source: Alberta Advanced Education and Career Development

These 9,445 persons had sufficient contact with the labour market to file an income tax return in 1982. The study is not in a position to identify the number of immigrants landing in these years who either became discouraged about their opportunities here and left the province, or who decided that they would take a longer period, i.e. wait beyond 1982 to file a tax return in the province.

Employing the two years of 1980 and 1981 results in a panel large enough to accommodate significant segmentation of the data, not only by immigrant class, but also by a variety of socio-economic characteristics. Further, by choosing a cohort drawn from the initial years available in the IMDB offers the longest time series possible for analysis. There is evidence from the IMDB that a period of adjustment is necessary for full labour force involvement. For example, in examining successive immigrant cohorts it is apparent that the difference between the number constituting a given cohort on landing and the proportion of that cohort subsequently filing a tax return narrows rapidly in the first two calendar years of settlement. By beginning the cohort in the 1982 tax year we have allowed for a transition period in which the immigrant adjusts to new conditions including the finding of permanent accommodations, identification of transportation options, acquisition of a greater understanding of a new social and cultural environment, engaging in a job search, and dealing with a variety of other adaptive processes before entering the labour force.

Attrition or Exits from the Panel

The panel commenced with 9,445 cases but by 1988 the number that can be accounted for had fallen to 7,195. Exits from the panel occur from failure to file a tax return indicating Alberta domicile. There are several reasons why this could happen:

- An immigrant engages in secondary migration, i.e. leaves Alberta for another province.
- An immigrant leaves the country.
- An immigrant dies.
- An immigrant remains in Alberta but does not subsequently file a tax return.

This study cannot separate out the proportion of panel exits due to each of the first three reasons given above. With respect to the fourth, there are some panel members who remained in Alberta but did not file a tax return in each and every year after 1982, and the question is how they are dealt with in the analysis. The procedure adopted is to drop the individual from our cohort for any year beyond 1982 in which there was no tax filing. However, if the individual again filed a tax return in Alberta, re-entry to the panel occurs in the year of filing. The effect is to allow any original member of the cohort to drop out and then re-enter the study. Statistics Canada, our data provisioner, found it too difficult to accurately control for re-entries, though there are arguments for eliminating them on the grounds that they are indicative of episodic labour force participation. Entries to the cohort, i.e. immigrants landing in 1980 or 1981 whose first tax filing is subsequent to 1982 are excluded from the study.

Over the seven years, 2,250 individuals exited the cohort for an overall attrition rate of 23.8%. In the only other study to calculate these rates over the same period, Allen (1991) found Alberta had a 27.5% attrition rate for a similarly defined

Figure 1: 1980/81 Panel Size and Number Remaining through 1988
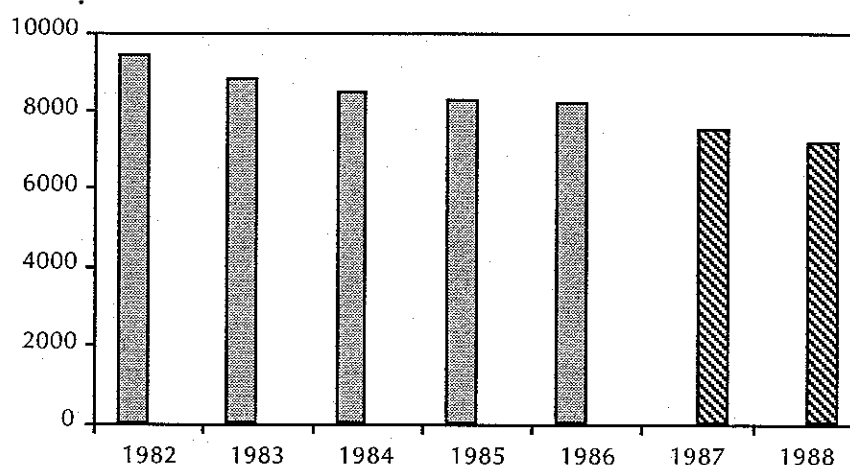
The data for 1987 and 1988 is incomplete because late tax filers in those years are excluded.

group of immigrants. The discrepancy between our rate of attrition and his is explained first by differences in methodology between the two studies, and second by revisions in the IMDB during the 1991-94 period.

However, it is important to recognize that because of structural problems with the IMDB accounted for by late tax filing (discussed earlier), the calculation of an exit rate over the entire period is improper. Therefore, analytical accuracy with respect to attrition rates is possible only for the 1982 to 1986 period when the cohort sustained an overall attrition rate of 13.2%, or an annual average rate of 3.27%. Note, however, that the bulk of the attrition occurred in the first year (1982/83) when the loss rate was 6.6%. By 1986 attrition had slowed to a trickle at 0.55 %. Between 1987 and 1988 attrition had picked up again to a rate of 4.13%, but because of the incomplete nature of the IMDB in 1987 and 1988, interpretation of this rate is unclear, and we have generally avoided its use in the study.

Age Distribution

Table 2 reports the age distribution of the 1980/81 panel. Note that age is as declared at landing, so that for each new tax year the boundary of the age categories rise by one year. Perhaps the most notable feature of the table is the temporal decline in the proportion of the panel who were in the 20-29 age cohort at landing, and the increase in the relative importance of all other age cohorts.

The older three categories comprised 19.7% of the cohort in 1982 and 20.4% in 1988. Though these changes in composition are not large, they do indicate a transition in the cohort consistent with the findings of other studies that younger immigrants are more apt to engage in secondary migration (Dougherty, 1994: p 4). Some secondary migration reflects the fact that during the period employment growth in Alberta was below the national average, suggesting the existence of more favourable job opportunities outside the province.

Table 2: % Shares by Age of the 1980/81 Panel

Year	13-19	20-29	30-39	40-49	50-59	60+
1982	6.83	42.03	31.45	10.16	6.88	2.75
1983	6.41	41.89	31.75	10.37	6.86	2.78
1984	6.51	41.66	32.01	10.36	6.80	2.72
1985	6.66	41.55	31.86	10.36	6.97	2.67
1986	6.82	41.23	31.67	10.29	7.13	2.92
1987	6.80	41.17	31.78	10.39	7.06	2.86
1988	6.88	40.86	31.97	10.42	7.16	2.85

Gender Distribution

Table 3 below containing the gender composition of the panel reveals little change in the ratio of male to females between 1982 and 1988. For an approximate comparison from the Labour Force Survey (LFS), in 1982 females made up 40.5% of the Alberta labour force while in 1988 the female proportion increased to 44.3%. Care should be exercised with this comparison as the LFS is not a longitudinal panel like the one used here, but a cross section at a point in time incorporating not only exits from the provincial labour force each year but entries as well.

Table 3: Gender Distribution of the Panel

Tax Year	Male	Female
1982	59.13	40.87
1983	58.84	41.16
1984	58.88	41.18
1985	58.99	41.07
1986	58.77	41.23
1987	58.83	41.17
1988	59.00	41.07

Educational Attainment

Table 4 shows that the 1980/81 immigrants with post secondary education accounted for 45.1% of the cohort in 1982 and for 43.7% in 1988. Again, like the change in age composition, this is consistent with the finding of other studies that immigrants with higher educational attainment are more likely to engage in secondary migration (Dougherty, 1994: p. 12). This experience may partly be attributable to higher rates of employment growth elsewhere in Canada (average employment growth 2.38%) compared with those in Alberta (average employment growth of 0.90%) during the years covered.

The educational qualifications of the immigrant cohort are generally above those of the 15 years of age and older population in the province as a whole. For example, in the 1986 Census (which is the most relevant to the period we are considering), 57.3 % of Albertans had a high school diploma or less, 32.0% had a trade or non-university diploma, and only 10.8 % had university degrees. In total 42.8% of Albertans over 15 years old had a post secondary diploma or degree while 44.3% of the 1980/81 cohort were similarly qualified in 1986.

Table 4: Educational Distribution of the 1980/81 Panel

Year	High School Diploma & under	Trade Cert. or Diploma	University Degree
1982	54.90	27.05	18.05
1983	54.76	27.10	18.14
1984	54.91	26.92	18.17
1985	55.30	26.77	17.93
1986	55.72	26.43	17.84
1987	56.03	26.38	17.59
1988	56.29	26.20	17.58

Language Ability

A judgment about whether a prospective immigrant possesses a knowledge of English (or French) is made by an immigration officer at the time of application. Where immigration occurs the IMDB reports language ability on an either/or basis as 'yes' there is a knowledge, or 'no' there is not a knowledge. It is in the ability to use the English language that the immigrant cohort and the Alberta population differ most dramatically.

At landing only 64 % of the cohort declared a knowledge of the English language. Historically, over 98% of Albertans can speak English. The fact that language ability as contained in the IMDB is a static measure raises the question of whether the 36% of the cohort without a knowledge of English is an accurate reflection of their language capability over the entire number of years covered by the study. It is possible when immersed in a foreign language to pick up a working

knowledge of it in a short time, so that when some of those declared as having no English upon arrival, filed their first tax claim, some capacity in the language may have been acquired. Thus, no knowledge of English at landing is perhaps the static variable most subject to temporal change. The 1991 Census based on the answers of respondents themselves reports that 23.2% of the 1980/81 immigrants in Alberta could not speak English in 1981 but ten years later only 9.0% of the people who landed in Canada in 1980/81 and lived in Alberta in 1991 stated they did not speak English. What the language variable may imply is a head start for those with a knowledge of English in access to a more general labour market.

We will address language issues and economic performance more fully in Part 6 of the report.

Average Income

The average income of the 1980/81 cohort rose from $18,105 in 1982 to $26,142 in 1988, a 44.4% increase. Over the same period the price level in Alberta, as measured by the CPI, rose by 22.6% resulting in a 21.8% increase in the real average income (average income after allowing for the effects of inflation) of the cohort.

A closer examination of the income patterns of the cohort between 1982 and 1988 reveals some interesting points. The differential in average income between that of the immigrant cohort and that of the average income of all Albertans indicates that at the beginning of the period average immigrant income was below the "all-Alberta" average, but during the period under study, the average income of panel members grew faster than the average income levels of those Albertans who filed a tax return.

Note that the immigrant average reached all-Alberta average income by 1986, and if this is used as a rough and ready criterion for effective labour market integration then we can conclude that it takes 5-6 years to occur. During these years immigrants become more familiar with their new economic and social environment, with job search techniques, and with better knowledge of the range of options available to them, whether obtained from word of mouth, from media advertising, or from public and private employment agencies. In 1983 the average employment earnings of the cohort were 86.6% of the provincial average level of employment earnings, but by 1988 the cohort average was 109.8 % of average tax filer income. A recent study using Census data found similar results for the average total income of immigrants in Canada (Bloom et al, 1993). However the findings of that study had smaller initial income differentials and longer catch-up time periods. A recent American study found that male immigrants as a group garner 71% of their potential earnings at the time of immigration, and as they become integrated within the labour force and better utilize labour market institutions during successive job searches, they reach parity with native American workers within 12 years of residence in the United States. This process, however, proceeds at different rates depending on ethnicity (Daneshvary, et al, 1992).

Sources of Income

Immigrants, like all Canadians, receive income from a variety of sources. In 1982 (as revealed in Figure 2 which presents data for three years) some 89.4% of the panel received employment income. This proportion declined to 85.7% by 1988. The proportion of the panel receiving investment income was highest (54.6%) in the first year covered. After an initial rise in the percentage of the panel with unemployment insurance receipts, the proportion of those reporting income from this source declined. It then rose again reflecting the impact of the 1986 recession. It fell again between 1986 and 1988.

Figure 2: % of the Panel Reporting Income from Given Sources, 1982, 1986 and 1988
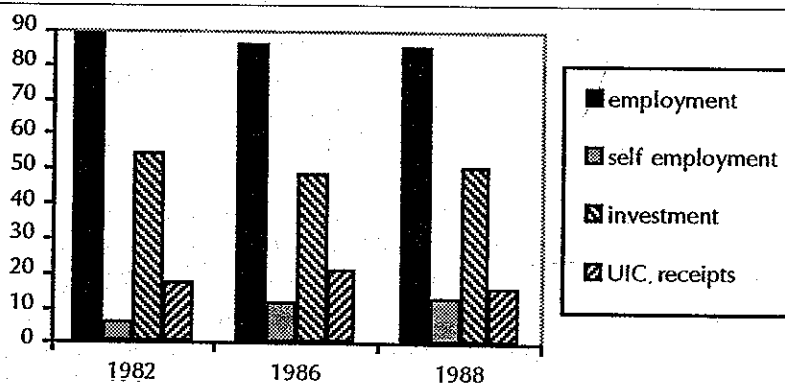
The proportion of the panel reporting income from self-employment increased throughout the period growing from 10.8% in 1982 to 17.7% in 1988, while the percentage reporting income from employment declined from 89.4% to 85.7%. The fact that about one half of panel members reported income from investments in the three years does not, as we shall see in Figure 3, mean that income from this source necessarily constituted a major share of income for panel members.

Figure 3: Sources of Income of the Panel by % Share, 1982 and 1988
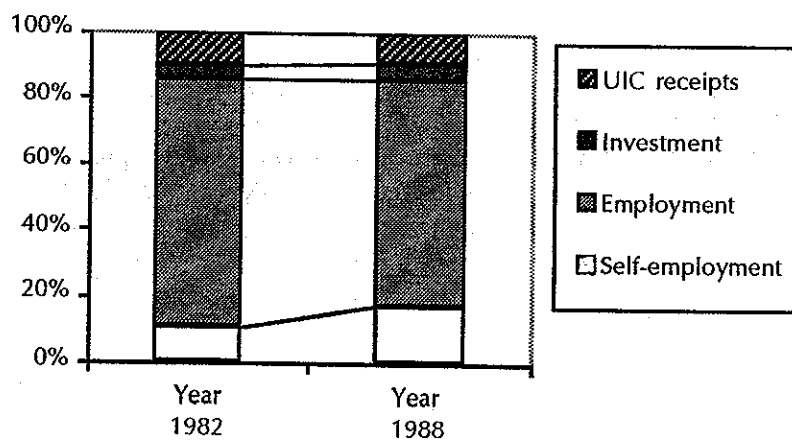
Sources of income can also be reported in terms of the share of each component to total income received. This is reported in Figure 3 for 1982 and 1988. The categories of sources of income are "employment", "self-employment", "investment", and "unemployment insurance"—all of which can be identified in the IMDB from income tax returns. While about one half of panel members reported investment income, income from this source amounted to, on average, less than 5% of income receipts.

Again, the large increase in the relative importance of income from self-employment and the reduced importance of employment income, are the most notable features. A related study (Allen, 1991), reports that the number of self-employed immigrants in Quebec are substantially greater than the self-employed in the population as a whole. In our panel, there were 590 or 6.2% who, in 1982, reported income from self-employment. On average, the amount reported from this source was $2,602. By 1988, the number reporting self-employment income rose to 13.3%, and their average income amounted to $6,682. Since there is little change in the share accounted for by either investment income or net UIC payments, the importance of self-employment had clearly increased for many new immigrants. Unfortunately, other sources of income to panel members such as welfare, gifts, and of course, undeclared pay, cannot be isolated.

Income Distribution

The profile of the group's income distribution as shown below (Figure 4) also changed over the study period. In 1982 the distribution was markedly skewed toward lower income levels with more than 35% of the cohort receiving incomes of less than $10 thousand. This is reasonably consistent with expectations given the differences in demographic and educational characteristics at landing, and the fact that the panel contains a mix of those who migrated for economic reasons as well as those who arrived here on humanitarian grounds. The number of panel members who can be characterized as "middle income" earners had increased by 1988. Median income for the panel is estimated at $14,400 in 1982 and $20,700 in 1988, an increase of 43.8% which compares with a price level increase of 22.6% over the same period.

Figure 4: Income Distribution of the Panel by Income Class, 1982 and 1988
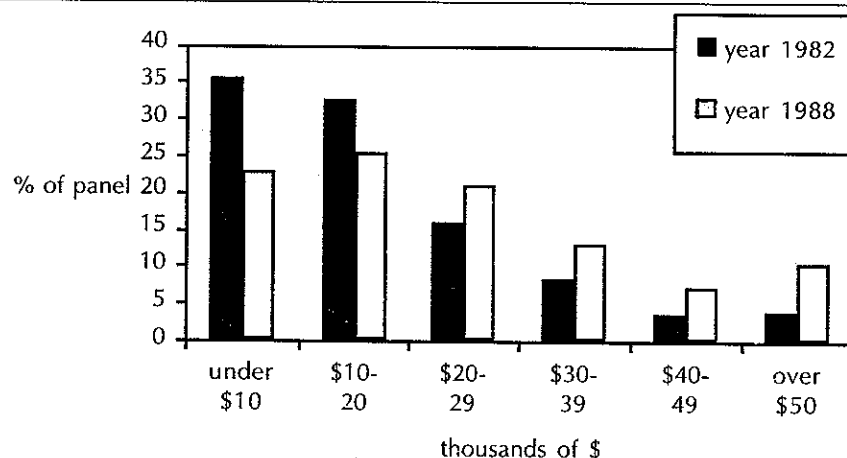
Incidence of Unemployment

The IMDB does not permit derivation of an unemployment measure which is directly comparable to the unemployment data reported monthly and based on the labour force survey. We have therefore used the annual reliance on

Table 5: Incidence of UIC Receipts by Panel Members, 1982-86

	Had no UIC receipts	Drew UIC in 1 year only	Drew UIC in 2 years	Drew UIC in 3 years	Drew UIC in 4 years	Drew UIC in every year
Count	4,866	1,608	1,555	801	441	177
%	51.5%	17.0%	16.5%	8.5%	4.7%	1.9%

UIC receipts by members of the panel as an indicator of unemployment incidence defined as the number of years that an individual on the panel has reported UIC receipts. Table 5 contains both a count of the of the number of panel members who between 1982 and 1986 reported UIC receipts, and the percentage of panel members in each frequency. The percentages are calculated on the number of panel members as of 1982. The table shows that over one half of the panel members drew no unemployment payments during the period, and another 17% received UIC income in only one year. Less than 2% of the panel drew UIC in each of the years covered.

Part 4:

Economic Performance of Immigrants by Immigration Class

Introduction

In Part 4 we outline selection criteria for the various immigrant classes, and then report their performance in terms of income received; reliance on UIC; labour market experience by age and gender; and employment by industry.

Selection Criteria for Immigration Classes[1]

Immigrants arriving in Alberta come from very diverse backgrounds. Immigrants are admitted to Canada in one of several immigration classes and categories. Some like the "business" and "independent" classes, describe groups of immigrants selected for admission on economic grounds. From the provincial perspective this is an especially important immigration group since it is the one over which provincial authorities are able to exert some influence. Independent immigrants, who represent virtually all of the combined panel category of "business and independents" are subject to the 'point' system of selection. In the application of selection criteria primary emphasis is placed on education, practical training, experience, age, knowledge of an official language, and the demand in Canada for their work skills. This category contains those with skill based education, and is comprised in part of individuals who may have received and accepted job offers in Alberta subject to immigration clearance. It is a group which will include, for example, a range from those accepting an appointment at one of Alberta's universities, to skilled lab technicians, to industrial, construction and farm machinery mechanics. In our panel some 78% of the males and 77% of the females in the independent and business classes came to Alberta with a post secondary degree or diploma. Note that within this group some 92% of the males and 95% of the females possessed a knowledge of English.

Other classes of immigrants include people that individual Canadians have sponsored for entry —family class, assisted relatives and spouses or dependents of immigrants—or people admitted to the country for humanitarian reasons as in the case of refugees. The point system does not apply to refugees and family class immigrants. In both instances applicants must, however, meet health, criminality and security standards. Sponsors are required to sign "an undertaking of support" for a period of one to ten years as a guarantee that the immigrant will not become a burden on Canadian taxpayers.

The profiles of those in the family, assisted relative and refugee classes differ measurably from those in the independent class. For those panelists of the family class, about two in three possessed a knowledge of English on landing, and just over one quarter had a post secondary certificate or diploma. In the refugee class only one in ten had a knowledge of English but more than two in five had acquired a post secondary certificate or diploma. For assisted relatives, 57% had a knowledge of English, and 39% had completed a post secondary program.

[1]Classes are those in place during the 1982-88 period. The assisted relative class ceased to exist in 1992.

Immigrant Class Composition of the Panel

A major advantage of the IMDB over the Census is that the IMDB distinguishes between immigrant classes and therefore permits an evaluation of their longitudinal performance. We reported the class composition of landings (including all ages) in 1980 and 1981 in Table 1. Note that the classification in that table is based on the 'Principal Applicant' which, in the case of households, is generally the male spouse. Thus, the other spouse and the children of the immigrating household are placed at landing in the immigrant class of the principal applicant. If the spouse and, in particular, the children of the principal applicant subsequently enter the labour force and obtain employment in Alberta, and through the sample process are included in the IMDB, it may not be possible to secure a valid match of tax returns with immigration class. This situation, together with the fact that there are a small number of immigrants in the panel admitted to Canada under special ministerial permits, is reflected in the analysis of Part 4. For some 2,375 people, or about 25% of the panel total of 9,445, it proved impossible to link immigration class with tax returns. The procedure adopted to deal with this circumstance is to include this 'other' or 'unclassified' group in the 'all immigrant' measures reported. Information presented in the following tables on the performance of immigration classes is based on totals *net* of this group.

Table 6 shows the distribution of panel members net of those that cannot be classified for each of the years from 1982 to 1986. The family class constitutes the largest group with just over 37% of the panel in 1982. In that year just under one-third were in the independent class, and slightly more than one-quarter were in the refugee group. The assisted relative and business groups were very small. In the analysis of Part 4 we have chosen to combine the business group with the independents.[1]

Table 6: % Distribution of the Panel by Immigrant Class, 1982 to 1988

Tax year	Assist. Relative	Business	Family	Independent	Refugee
1982	1.98	1.13	37.39	32.51	26.98
1983	2.06	1.22	37.27	32.85	·26.60
1984	2.08	1.28	37.73	32.85	26.06
1985	2.21	1.23	38.23	32.73	25.59
1986	2.14	1.24	39.21	32.54	24.88
1987	2.17	1.36	39.11	32.25	25.11
1988	2.25	1.41	39.06	31.74	25.54

Note: This distribution is net of dependents who entered with the principal applicant and subsequently joined the labor force, immigrants admitted under special permits and immigrants for whom a valid match among IMDB selection documents could not be made

Economic Performance: Income from All Sources

Figure 5 summarizes genuinely new information about the economic performance of each immigrant class in the panel. We reiterate that the relation of income to immigrant class cannot be found in the Census. Economic performance in Figure 5 is measured by total income receipts which are dominated by, and highly correlated with, employment earnings in each year under study. Income includes employment, including self-employment income, property income and benefit payments received from UIC. The income plotted in the chart is in current dollars and is not adjusted for the effects of inflation.

Two features of the figure deserve comment. The first is that the average income received in each immigrant class improved as the length of residence in Canada increased. The overall trend of improving nominal income through time is consistent with the results in other studies [Beaujot et al, 1988; Bloom et al, 1993]. Figure 5 shows that the general trend holds on a class by class basis. After allowance for the increase in the price level as measured by the CPI of 22.6% from 1982 to 1988, the average total real income (current dollar income adjusted for the effects of inflation) also increased for each immigrant class. To be precise the increases in average income for each immigrant class between 1982 and 1988 were as follows:

Figure 5: Average Income by Immigration Class, 1982 to 1988
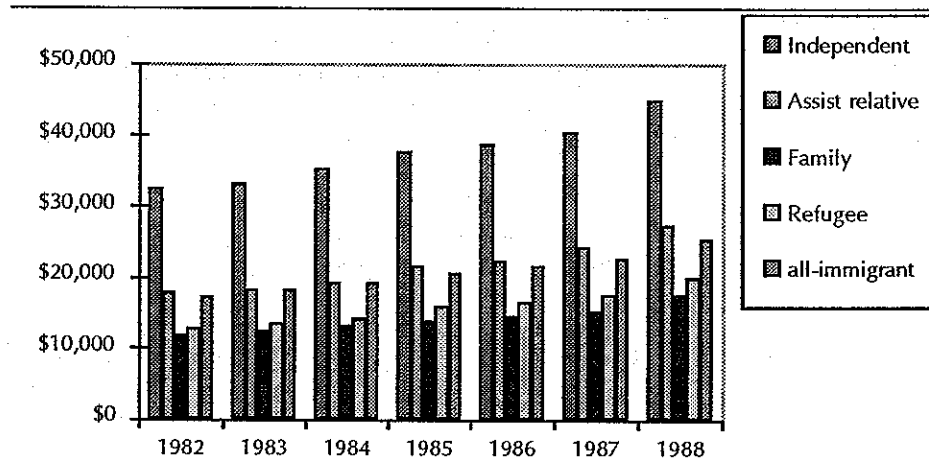
The all-immigrant class includes those whose records did not permit classification into an identified category.

	% growth nominal	% growth real
All-immigrants	46.6%	19.6%
Assisted relatives	53.9	25.5
Refugees	54.0	25.6
Business and independent	38.6	13.0
Family class	48.2	20.8

The second feature in the figure is the wide dispersion in the economic performance of the several immigrant categories. For example, the average income of the independent and business class immigrants from all sources exceeded all-immigrant average income by 87% in 1982 and by 77% in 1988.

At the other end of the scale were the family class whose typical incomes in 1982 and 1988 were approximately 32% below the all-immigrant average.

Economic Performance: Unemployment Experience Measured by Reliance on UIC

The measure chosen to assess the unemployment experience of the group is a ratio obtained by dividing the average income of panel members from UIC by the average level of UIC premiums paid by the individual. Note that the denominator used in calculating the numbers in the table is the average payment into the UIC by the individual, **not the total payments into the fund in the name of the individual.** Total payments into the UIC fund are composed of the sum of employee and employer contributions. They consist of (a) the premium paid directly by the employee, and (b) the premium paid by the employer in the name of that employee. The employer contributes $1.40 to the UIC fund for every $1 contributed by the employee. The fact that the ratio in the table frequently exceeds unity therefore cannot be interpreted as a situation where average per capita payments from the Fund exceed average per capita premiums paid to the Fund. For this to be the case the ratio would have to exceed 2.40, a figure arrived at by considering the respective payments into the UIC Fund by both the employer and the employee. In sum, a ratio less than 2.40 indicates that the income received from UIC was less than premium payments to UIC. A ratio greater than 2.40 indicates that income received from UIC exceeded premium payments to UIC for the designated group.

The ratio of average income from UIC to average UIC premium payments by the individual (not including the employer contribution) for each immigrant class and for Albertans as a whole is summarized below in Table 7. Referring to the 'All-Alberta' average, the ratio of income to premium payments was less than 2.40 in five years and exceeded this ratio in two years. The interpretation is that Alberta workers were net contributors to the Fund in five of the 1982-86 years. For the panel as a whole (the all-immigrant column) the ratio was less than 2.40 in three of the seven years.

Table 7: Ratio of Average Income from UIC to Average UIC Premium Payments by Immigrant Group and for all Albertans, 1982 to 1988

	All-Alberta	All-immigrant*	Independent	Refugee	Family	Assist Relative
1982	2.12	2.48	0.90	5.33	3.12	4.06
1983	2.69	3.56	1.91	6.70	4.19	5.56
1984	2.61	2.90	1.54	5.04	3.68	3.58
1985	2.17	2.01	0.85	3.23	2.73	1.91
1986	2.30	2.37	1.22	3.69	3.31	2.60
1987	2.15	2.47	1.02	3.12	2.81	2.73
1988	2.00	1.81	0.61	2.41	2.29	1.56

Source: IMDB and Taxation Statistics.

*The all-immigrant ratios include those immigrants whose records did not permit classification into an identified category.

Alberta's cyclical experience is apparent, in particular, the universally adverse effect on the labour market of the 1983-84 recession and the energy price collapse of 1986. A second feature is that over the entire period there is evidence of a decline in the ratio for the refugee, assisted relative, and the family classes. But it is also the case that the economy was in considerably better condition in 1988 than it was in the 1983-84 period. The table also reveals the wide dispersion in ratios across immigration classes ranging in 1982 from a minimum of 0.90 for independents to 5.33 for refugees. The wide dispersion in the early years reflects the varying degrees of success that individual immigrant categories experienced in adapting to the Alberta labour market. Note, however, that the dispersion had narrowed considerably by the end years with refugee and family class experience much closer to the all-Alberta average suggesting more effective integration. In 1985 and 1988 the all-immigrant average was lower than the all-Alberta average.

Economic Performance: Age Groups

The panel's income performance by immigrant class was segmented into two age categories at landing: the 20-39 and the 40-59 cohorts. The 15-19 cohort was excluded because their labour force participation is more likely to be episodic than consistent. Table 8 reports average income levels for the year 1988, and the percentage growth in current dollar income between 1982 and 1988. For the 1988 income averages reported in the table, there were 5,230 cases in the 20-39 cohort, and 1,260 in the 40-59 group.

Table 8: Average 1988 Income by Age Cohort and Immigrant Class, and Growth in Average Income 1982 to 1988

Immigrant class/cohort*	1988 Average income	% growth 1982-88
All-immigrants:**		
20-39 (6,945)	$27,832	52.7%
40-59 (1,610	21,785	17.9
Independent:		
20-39 (2,025)	45,449	45.4
40-59 (355)	42,485	8.4
Family:		
20-39 (1,520)	20,605	56.3
40-59 (585)	13,379	23.2
Assist relative:		
20-39 (110)	29,495	66.7
40-59 (25)	21,126	8.5
Refugee:		
20-39 (1,410)	20,950	60.0
40-59 (315)	17,809	23.0

*Numbers in parentheses in the immigrant class and cohort column are numbers of immigrants filing tax returns in 1982.
**All immigrants include those whose records did not permit classification into an identified category.

Table 8 reveals distinct differences in age income profile for each of the immigrant classes. The gap between the 1988 incomes of the younger and older groups is most evident for the "family" and "assisted relative" classes, where the income of those in the 20-39 group exceed on average those of the older group by about one third. Though similar, the gaps between the "independent" and the "refugee" categories are much narrower. For the older group, across all classes, rates of income growth during the 1982-88 period failed to keep pace with inflation, so that average real income, as distinct from nominal income, declined. On the other hand, the average real income—as well as average nominal income—increased between 1982 and 1988 for the younger age cohort in every immigrant class.

The economic performance reflected in Table 8 is consistent with other findings on immigration: younger age groups adapt more readily in both the short and the longer term to their new environment. The labour market problems of the older age group are compounded first by their more limited language facility at landing, and then by their lower average levels of education. In the older group only one half possessed a knowledge of English on landing compared with two-thirds of panel members 20-39. In the case of the older group, slightly more than one-third had 9 years or less of schooling, and 38% possessed a post secondary certificate or diploma. In the younger age bracket, one half possessed a post secondary certificate or diploma.

Economic Performance: Gender Based Measures

The 1988 average income reported by gender and by immigrant class (Table 9 below), is calculated from the records of 4,245 males and 2,950 females. In every class male average income substantially exceeded female average income. The table shows that female average income in all immigration classes rose faster than male average income during the 1982-88 period. The result is that the percentage of female to male average annual income on an all-immigrant class basis rose from 40.5% in 1982 to 49.3% in 1988. This gender ratio rose most rapidly for the refugee class.

Table 10 distinguishes the unemployment experience of males and females by immigrant class over the same period. The criterion is the one used previously, namely: the ratio of average income reported from UIC to the average premiums paid by the individual. The table reveals that the economy's cyclical impacts are blind to gender.

Table 9: 1988 Average Income, and the % Growth in Income 1982 to 1988 by Gender and Immigrant Class

Immigration class	1988 Average income	% Growth 1982-88
All-immigrant:**		
M (5,590)	$32,086	40.1%
F ((3,865)	15,775	70.3
Independent:		
M(2,165)	46,306	38.2
F (215)	30,384	46.8
Family:		
M (1,335)	21,625	41.2
F (1,306)	14,341	76.4
Assist relative:		
M (105)	31,031	55.3
F (40)	18,012	56.6
Refugee:		
M (1,190)	23,264	47.4
F (715)	16,649	83.8

*Numbers in parentheses in the Immigration Class column are the number filing tax returns in 1982.
**All immigrants include those whose records did not permit classification into an identified category.

Table 10: Ratio of Average Income from UIC to UIC Premium Payments by Gender and Immigrant Class, 1982 to 1988

Class*	1982	1983	1984	1985	1986	1987	1988
All-immigrant**							
M(5,590)	2.64	3.80	2.80	1.82	2.22	1.78	1.35
F(3,865)	2.10	3.01	3.16	2.48	2.71	2.62	2.09
Independent							
M(2,165)	0.93	2.02	1.56	0.4	1.20	1.05	0.62
F(215)	0.60	0.81	1.40	0.93	1.45	0.68	0.53
Family							
M(1,335)	3.65	4.64	3.73	2.54	3.16	2.37	1.93
F(1,305)	4.34	5.66	4.92	3.00	3.39	3.44	2.88
Assisit relative:							
M(105)	4.93	6.01	3.84	2.20	2.87	2.56	1.67
F(40)	0.69	3.76	2.42	0.63	1.31	3.52	1.11
Refugee							
M(1,190)	5.70	7.12	5.09	3.32	3.80	2.99	2.22
F(715)	1.47	2.19	2.66	2.35	2.27	2.15	1.66

*Numbers in parentheses in the Class column are gender numbers filing tax returns in 1982.
**All immigrants include those whose records did not permit classification into an identified category.

Further, with respect to the integration of immigrants into the labour market, Table 10 does reveal some gender differences by immigration class. Both male and female independents adapt quickly. Some gender difference is apparent in the family class with males experiencing less unemployment than females. However, in the assisted relative and refugee groups females on average appear to integrate more readily than males.

A final notable feature of Table 10 is that, particularly for males in the family, refugee and assisted relative classes, there is evidence of a declining trend in the ratio over the period, suggesting the longer the period of residence, the greater the degree of accommodation to the job market.

Economic Performance: Income by Educational Attainment

When members of each immigrant class in the panel are categorized by educational attainment the expected economic advantages to be gained from additional years of schooling are readily apparent. This is seen in Table 11 which compares 1982 and 1988 incomes together with their rates of growth by educational attainment.

Table 11: Income Levels in 1982 and 1988 and Rates of Growth in Income 1982 to 1988 by Immigration Class and Educational Attainment

Class	year and growth	0-12 yrs.	13+ yrs.	Trade Cert	Univ. deg.
All-immigrant*	1982	$11,448	$15,533	$20,499	$28,572
	1988	17,119	25.464	28.768	43.021
	growth	52.5%	63.9%	40.3%	50.6%
Independent	1982	$23,587	$30,742	$30,090	$38,344
	1988	31,733	44,308	39,088	57,695
	growth	34.5%	44.1%	29.9%	48.5%
Family	1982	$10,122	$12,329	$14,382	$18,158
	1986	14,513	20,771	22,488	30,591
	growth	43.4%	57.2%	56.4%	68.5%
Assist relative	1982	$14,628	$16,990	$23,681	$18,204
	1988	22,313	30,781	33,312	33,394
	growth	52.5%	81.6%	40.7%	83.4%
Refugee	1982	$10,812	$12,269	$14,382	$18,158
	1988	15,941	19,688	22,488	30,591
	growth	47.4%	60.5%	56.4%	68.5%

*The all- immigrant class includes those immigrants whose records did not permit classification into an identified category.

The average income of those holding a university degree was about two and one half times the average income of an immigrant with 0-12 years of schooling. In general, and not suprisingly, the average income of those with higher levels of education exceeds the income of those with lower qualifications. Exceptions are in the independent class where the 1982 average income of those with 13+ years of schooling approximately equaled those with a trade certificate, and in the assisted relative class where those with a trade certificate had average income exceeding those with a university degree. On average, however, the income of those in the 13+ category grew considerably more rapidly than the income of the trade certificate group during the seven year study period, though this experience varied a good deal from class to class.

Economic Performance: Unemployment Experience

Table 12 reports for the 1982-88 period the average unemployment experience of immigrant classes by educational attainment, and draws a comparison with the all-Alberta average. The criterion used is again the ratio of average UIC receipts to average UIC payments.

Table 12: Ratio of Average Income from UIC to Average UIC Payments by Immigration Class and Educational Attainment Compared to the all-Alberta Ratio

Immigration Class	Average ratio 1982-88
All-immigrant	
0-12	3.4
13+	2.3
Trade certificate	2.1
University	1.4
Independent	
0-12	1.9
13+	1.1
Trade certificate	1.3
University	0.8
Family	
0-12	3.8
13+	2.4
Trade certificate	2.9
University	1.9
Assisted relative	
0-12	3.7
13+	2.8
Trade certificate	2.6
University	3.0
Refugee	
0-12	4.8
13+	4.6
Trade certificate	3.9
University	3.2
All-Alberta	2.3

*The all-immigrant class includes those immigrants whose records did not permit classification into an identified category.

The unemployment experience of panel members diminishes with levels of educational attainment but there is a good deal of variation across immigrant class within any level of educational attainment. The independent class shows the lowest ratio across all levels of education while the refugee group display the highest ratios. Over the entire period those with education levels of 13+ or more show a lower ratio than the all Alberta average.

Economic Performance: Job Holdings By Industry

Table 13 shows job holdings distributed across industry by immigrant class for three years: 1982, 1986 and 1988. These classifications are based on the industrial affiliation of the employer providing the panelist with the largest fraction of total employment income as reported on their income tax return (from the T4 slip) for the designated year. This limits somewhat the utility of the table since a given immigrant may have worked for more than one company during the year, and those employers may possess different industrial classifications.

Table 13: % Distribution of Employment by Industry for Panel Members Compared to that for all-Albertans, 1982, 1986 and 1988

Industry and year	Immigrant panel	All Alberta
Primary		
1982	6.43	6.75
1986	7.18	7.49
1988	7.93	7.28
Manufacturing		
1982	17.99	8.56
1986	17.08	8.95
1988	17.22	9.32
Construction/Transport.		
1982	12.24	18.41
1986	9.82	14.71
1988	9.70	14.30
Wholesale/retail trade		
1982	12.90	18.44
1986	12.00	18.63
1988	11.90	19.02
Fin./Ins./real estate		
1982	4.02	5.58
1986	4.25	5.31
1988	4.05	5.31
Public administration		
1982	6.61	7.57
1986	8.50	7.62
1988	8.27	7.10
Comm/bus/pers service		
1982	39.74	34.69
1986	41.30	37.29
1988	40.84	37.66

Statistics Canada, *The Labour Force* is the source of the all Alberta distribution. Data for the panel is net of tax filers who could not be classified by industry.

The distributions reported in Table 13 indicate that the industrial employment of panel members differ in some major aspects from the all-Alberta average. Most notable is the share of immigrants employed in manufacturing (double the Alberta average), the share in construction and transportation, and in wholesale and retail trade (in these latter instances, some two-thirds of the Alberta average). In all categories—immigrant and all-Albertan—the distribution of employment in the construction and transportation industry reveals the same decline in job placement in response to the sluggish growth of the 1980s. Moreover, the percentage distribution of study members in other industries does not differ greatly from the province-wide distribution.

An overview (not in any table) of industry employment by immigration class displays significant variation. For example, about two-thirds of 1982 panel employment in primary industry is accounted for by independents (330 out of 520 people), almost all of whom spoke English with more than four-fifths possessing at least a post secondary certificate or diploma. In the case of manufacturing, in 1982 some 29% of immigrants came from the independent class with 88% of them having a knowledge of English, and 77% possessing at least a post secondary certificate or diploma. The refugee class accounted for 30% of panel jobs in manufacturing the same year with only about one in twelve having a knowledge of English. However, almost two in five refugees employed in the manufacturing sector possessed at least a post secondary certificate or diploma. The family class accounted for 23% of panel jobs in manufacturing, and of this group 62% had a knowledge of English, and 25% had post secondary qualifications.

In 1982 community, business and personal services provided employment for some 35% of panel members. Of those working in this area, about one in five came from the independent class—virtually all of whom spoke English—and more than four in five had at least a post secondary certificate or diploma. Of those from other classes entering these service industries, only about one half had a knowledge of English, and approximately one in three possessed a post secondary certificate or diploma or better.

Part 5:
Exits

Exit Rates by Immigration Class

Exits from the study group can be classified by certain characteristics so as to provide further insights into the immigrant experience. As indicated earlier, the class of immigrant over which the province is able to exert a measurable degree of influence is the "independent and business" group. Whereas the other immigration classes—immigration that reunites families, relatives, or provides safe haven to refugees—are less subject to control by provincial governments. With the exception of refugees, these classes have strong social reasons for remaining in the province of landing. In contrast, ready made social and family ties are not necessarily central to the migratory decisions of those in the independent class. Their decision is more likely to be an economic one, based either on potential job opportunities here, or on the fact that the independent may hold a job offer subject to immigration clearance prior to arrival. We summarize the cumulative exit experience of the panel in Table 14 for the period 1982-86 which, as explained above, is the longest period for which we have completely comparable data.

Table 14: Cumulative Attrition Rates by Immigrant Class, 1983 to 1986

Class/year	1983	1984	1985	1986
All-immigrant*	6.62	10.53	12.60	13.08
Independent	5.89	10.10	12.84	13.68
Family	7.39	10.61	11.74	9.85
Assist. relative	3.57	7.14	3.57	7.14
Refugee	8.40	14.44	18.11	20.73

* The all immigrant class includes those immigrants whose records did not permit classification into an identified category.

The table reveals considerable variation across the immigrant classes. The lowest exit rates, as might be expected, are found in the socially based categories of immigration—the "family" and "assisted relative" groups. Neither of these classes display rates of attrition equal to that for the panel as a whole, or for the "independents" and "refugees". In fact, labour force re-entry is evident in both groups.

The highest exit rate is in the "refugee" group, a category of immigrants with neither predetermined economic, nor social ties, to the province. "Independents" have an attrition rate about equal to the panel average.

Exit Rates by Educational Attainment

Table 15 shows rates of exit from the panel by education level upon arrival. The general conclusion is that for each level of educational attainment, the highest rate of exit is experienced in the first year (which generally accounts for about one half of the total recorded). Higher rates of attrition are displayed by those with the greater educational qualifications, a result consistent with numerous studies finding a positive relation between qualifications and mobility.

Table 15: Cumulative Attrition Rates by Highest Educational Attainment, 1983 to 1986

Educ./year	1983	1984	1985	1986
High school diploma or less	6.85	10.51	11.96	11.76
Trade/non University diploma	6.46	10.96	13.50	15.07
University degree	6.16	9.97	13.20	14.08
Total	6.62	10.53	12.60	13.08

Exit Rates by Language Ability

Table 16 presents cumulative attrition rates by knowledge of English on landing. Results again indicate the highest rate of attrition in the first year, and also that the rate for those landing with a knowledge of English was somewhat lower. The refugee class dominates the number of non-English speakers which has been identified in Table 16 as the group with the highest attrition rate.

Table 16: Cumulative Attrition Rates by Language Ability on Landing, 1983 to 1986

Language/year	1983	1984	1985	1986
English	6.01	9.68	11.52	11.94
No English	7.54	12.03	14.35	14.93
Total	6.62	10.53	12.60	13.08

Part 6:
Language and Economic Performance

Introduction

Part 6 of the Report turns to the possible relation between economic performance and language ability, specifically to immigrant knowledge of English on landing. To do this the relation of language ability to average income and to unemployment experience is considered. Appendix A of the Report further investigates the economic impact of language by employing data from the 1991 Census to separate the effects of age and education on income from those of language.

Income Effects of Language Ability Within Immigrant Class

To cast further light on the question we begin by considering for each immigrant class the ratio of average income for those with a knowledge of English to average income for those without. The all immigrant average income for those landing with a knowledge of English was $20,639 in 1982 compared to an average of $11,579 for those without English. By 1986 the respective incomes were $25,527 compared with $14,284, and in 1988, $30,075 compared with $17,240. The relative size of the income differential changed little, despite the fact that both groups had nominal average income growth (45.7% and 48.9% respectively), well ahead of the increase in the price level of 22.6%, therefore experiencing real average income growth. However, the important finding for present purposes is that the gap did not narrow.

Table 17 below reports these ratios for all those in the panel as well as by immigrant class. The evidence is that higher income is received within each class by those with a command of English. This ranges from a maximum in the independent class to a minimum in the refugee group. Moreover there is no evidence of a diminishing trend in these ratios over the period covered in the study.

Table 17: Ratio of Employment Income of Those Landing with English to Those Landing without English by Immigrant Class, 1982 to 1988

Year	all-Immigrant*	Independent	Refugee	Family	Assist Relative
1982	1.78	1.97	1.33	1.52	1.51
1983	1.84	2.16	1.33	1.59	1.60
1984	1.80	2.03	1.27	1.56	1.72
1985	1.77	2.02	1.25	1.59	1.51
1986	1.79	2.18	1.32	1.59	1.51
1987	1.74	2.06	1.29	1.55	1.60
1988	1.74	1.91	1.35	1.62	1.53

*All-immigrants include those whose records did not permit classification into an identified category.

A Measure of Unemployment Experience

Table 18 applies the unemployment proxy used in this Report to help distinguish the labour market performance of those who have a command of English from those who do not. The table provides an indication of the relative unemployment experience of the two language segments of the panel, and contains a comparison with the all-Alberta average. To reiterate what was previously pointed out, these ratios are a measure of average income from UIC to average premiums paid by the employee into the UIC Fund. The denominator does not include the contributions made by the employer which are 1.4 times those of the employee. Hence, the ratio must exceed 2.4 to infer net income receipts from the Fund.

Over the study period panel members who declared a knowledge of English displayed a lower ratio than the average Albertan, and a substantially lower ratio than those members of the panel without knowledge of English.

Table 18: Ratio of Average Income from UIC to Average UIC Premiums by Language Ability Compared to the all-Alberta Ratio, 1982 to 1988

Group	1982	1983	1984	1985	1986	1987	1988
Alberta Average	2.12	2.69	2.61	2.17	2.30	2.15	2.00
Immigrants with English	1.56	2.50	2.08	1.40	1.77	1.48	1.02
Immigrants without English	4.56	6.17	4.94	3.51	3.83	3.33	2.88

Knowledge of other panel characteristics indicates that language ability cannot, in and of itself, explain the income differences between the two language groups. Consider some comparative statistics. In the group that declared English language ability, 53.8% had a post secondary degree or diploma, in the other group only 30.1% were similarly qualified. Also, business and independent class immigrants make up 36.6 % of the immigrants with a declared knowledge of English and only 5.1% of the immigrants who did not declare English language ability.

One generally accepted approach to the separation of language effects from those of age and education is explored in Appendix A.

Unemployment Effects of Language Ability Within Each Immigrant Class

Further knowledge of how language ability affects labour market performance is revealed by the ratio of UIC income to UIC premiums. Table 20 below shows that for each immigration class the ratio is substantially and consistently higher for those landing without a knowledge of English. In other words those with English experience less unemployment.

Table 19: Ratio of Average Income from UIC to Average UIC Premiums by Language Ability and Immigrant Class Compared with the all-Alberta Ratio, 1982 to 1988

Class	1982	1983	1984	1985	1986	1987	1988
Independent							
English	0.85	1.80	1.52	0.79	1.17	1.00	0.57
no-English	1.73	4.09	1.97	2.03	2.14	1.39	1.20
Family							
English	2.62	3.39	2.95	2.02	2.73	2.13	1.67
no-English	4.41	6.35	5.63	4.62	4.83	4.59	4.04
Assist Relative							
English	3.40	4.94	2.65	1.30	1.88	1.72	1.01
no-English	5.05	6.57	5.05	2.83	3.66	4.21	2.40
Refugee							
English	2.70	4.88	3.25	2.59	2.42	2.95	1.37
no-English	5.67	6.95	5.26	3.30	3.84	3.15	2.55
all-Alberta	2.12	2.69	2.61	2.17	2.30	2.15	2.00

Implications of the Research Findings on Language

Because the language gap is so apparent, and because ability to use English is central to the efficient participation of the immigrant in the labour force, some issues need to be put on the table. Efficient participation means the ability of immigrants to use training, expertise, and experience to the fullest extent in the provincial labour market so that they, and Alberta society as a whole, benefit to the maximum.

We can view this issue through the processes that bring these new arrivals into the job market. Normally, an immigrant's participation in the labour market begins with a job search. Without knowledge of the language, immigrants are unable to utilize effectively either the formal or informal labour market institutions available for successful job searches.

Once employed, immigrants must face the reality that most jobs in our society require the employee to engage in two kinds of language based interaction. The

first is with fellow workers and entails task completion within the organization. The second is interaction with the customers of the employer. It is highly probable that those incapable of using the language are at a disadvantage and possess a more restricted range of employment options—an inability to communicate inhibits potential. A body of literature has emerged on this question (Garson, 1992; Parliman and Shoeman, 1994; Sindlinger, 1994; O'Toole, 1994; Maynard, 1993; Hayflich and Lomperis, 1992; Rimalower, 1992; and Steck, 1992). This research is primarily concerned with language issues within the business organization, and implicit in all of it, is the effect of language capability on productivity in both personal and organizational terms.

The evidence respecting language provided in Tables 17 through Table 19, taken together with the results of the Census analysis in Appendix A, gives witness to the de facto placement of immigrants without a knowledge of English into an inferior labour market position at their first job, irrespective of their formal qualifications. This is the penalty for absence of the universal communication skill. Once placed in that position, they subsequently experience restricted employment opportunities in job searches since these are highly dependent on previous experience in the Alberta labour market. Future long term job options for the non-English speaking are restricted relative to their technical capacities. These unfortunate circumstances are reinforced by prior experience in the provincial labour market.

Costs of English Language Deficiency

We believe that data from both the Census and from the IMDB panel, as well as from other research studies in Canada and the United States, indicate that language deficiency has significant economic consequences. We wish to provide some estimates of the private and social loss to the Alberta economy from immigrant's inability to use English.

An upper bound is found by employing our estimate—derived from the Census analysis in Appendix A—of a 50% positive differential in average income, holding experience and educational attainment constant, for those with a command of English. If we apply this measure of the premium for English to the average income of those panel members with no-English during the 1982 to 1988 years, then the present value of an income loss attributable to the absence of English can be calculated. We estimate the present value of this loss discounted to 1981, at an interest rate of 5%, to be $40,800 evaluated at the 1986 price level. Evaluated in 1994 prices the loss is about $54,000. The magnitude of this loss is actually three times the average 1982 income (converted to 1986 dollars) of non-English speakers. At a marginal tax rate of 25% the present value of the loss in income tax revenues would amount to $13,000 (in 1986 dollars) over the 1982-88 period.

These estimates may represent an upper bound, but the application of any reasonable coefficient attached to the command of English will indicate the large economic loss occasioned by the language factor.

Part 7:

Conclusions and Matters for Review

This report examined the labour market experience of different classes of immigrants using a panel drawn from the IMDB. The panel consists of 9,445 immigrants of both sexes landing in Alberta in either of the years 1980 or 1981. The other condition for IMDB inclusion was the filing of a 1982 Alberta income tax return. Because the IMDB data set for 1987 and 1988 is still preliminary, some of the evidence on panel performance is limited to the 1982-86 period. In the years covered by the data, employment in Alberta grew at only two-fifths of the Canadian rate, and at one-seventh of the province's rate in the prior 1973-81 period.

There are seven principal conclusions to this study.

1. The average income of panel members reached the all-Alberta average income of tax filers by 1986, some 5-6 years after landing. However, substantial differences in recorded income across immigrant classes is apparent.

2. On average the younger and more highly educated members of the panel integrated more rapidly into employment opportunities than the older and less educated.

3. After 1984 the average unemployment experience of the panel resembled quite closely the all-Alberta average. At the same time there was substantial variation in the unemployment experiences of immigrant classes.

4. There was a substantial difference in the labour market experience of the two-thirds of the panel who landed with, and the one-third who landed without a knowledge of English. For panel members as a whole, those with a knowledge of English received $1.75 for every $1 received by those without English.

5. Higher unemployment was experienced by those without a knowledge of English on landing.

6. The results strongly support attaching great importance to the immigrant's knowledge of English. This will increase measurably the chance to secure employment commensurate with education and experience.

7. During the 1982-86 years, exits from the panel—defined as failure to file a tax return in Alberta—amounted to 13%. Exits were relatively more prevalent among the refugee and independent classes.

A further matter for review is the state of, and access to, the IMDB for those governments that provided the financial resources to build it. The experience in undertaking the research necessary for this Report underscores the fact that no special provisions exist for access to IMDB by these supportive provincial agencies. Clearly this inhibits the use of the IMDB. Put frankly, in requesting access to IMDB for this longitudinal study the costs of data acquisition in desired formats were no different than they would have been for any other user. And despite the co-operative effort displayed by contacts at Statistics Canada, access was clumsy and difficult. Hence, there are no compensating benefits for those whose financial contribution made IMDB possible.

We have the following recommendation: If the Alberta Government should decide to offer future financial support for updating the IMDB, then the contract should contain a clause arranging for an Alberta official to be sworn in at Statistics Canada for access to the IMDB on a demand basis. Access should be under terms and conditions that provide a benefit to the province in exchange for its record of financial support to the IMDB.

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Appendix A

Analysis of the Economic Effects of Language Ability Using the Public Use Sample from the 1991 Census

To explore further the value of English language ability to labour participants born outside Canada, we used data from the public use file of the 1991 Census to construct income profiles of immigrant males living in Alberta during the Census period. The statistical method employed is a standard human capital earnings function augmented for foreign birth, foreign education, and possible deficiency in English language ability. In its basic form the standard model theorizes that the earnings of an individual are a function of training and experience. This is shown in Equation 1.

Equation 1: $log(INCOME) = C + ß_1 \times AGE + ß_2 \times AGE2 + ß_3 \times SCHOOL$

The natural logarithm of total income is used to simplify interpretation of the parameter estimates which can then be understood as rates of change. The variable C is a constant term estimated with the parameters. Age is commonly used as a proxy for experience. In general, more experience leads to higher incomes, though this effect usually diminishes as experience increases. Hence the estimate of $ß_2$ is expected to be negative. The SCHOOL variable represents years spent in school and is used to proxy training.

In Equation 2, the basic model is augmented to account for immigration. The variable symbolizing 'years spent in school' is separated further so as to derive a variable denoting 'years in a foreign school' and 'years in a Canadian school'. Another new variable is added to account for knowledge of the English language. This variable, "LANGUAGE", is set to equal one if the person has knowledge of English, and zero otherwise. The changes made to Equation 1 are now shown in Equation 2:

Equation 2: $log(INCOME) = C + ß_1 \times AGE + ß2 \times AGE_2 + ß_3 \times FOR\_SCHOOL$
$\bullet\ ß_4 \times CAN\_SCHOOL + ß_5 \times LANGUAGE$

These two equations were estimated for all immigrant males in Alberta over the age of 15 and under the age of 65, included in the public use file of the 1991 Census of Canada. A total of 4,192 observations met these criteria. Note that these observations differ in several significant ways from the 1980/81 IMDB panel that we have been using. First , and most obviously, the 1991 Census describes a year beyond our IMDB analysis period. Secondly, the Census sample includes all immigrants in Alberta irrespective of either year or province of landing.

The results for these two equations are presented in Table 21: Age/Earnings Profile Regression Results for Equations 1 and 2. In both equations all the parameter estimates were tested to determine whether they were statistically different from zero, both independently and jointly. We have concluded that they are within a 99% confidence level.

In both models β_1 and β_2 are respectively positive and negative as expected. Comparing the two equations we see classic signs that Equation 1 is missing information. Specifically: the new parameter estimates in Equation 2 are significantly different from zero, both independently and jointly. The adjusted R-squared has increased and the estimate for the constant C in Equation 2 is smaller than in Equation 1.

Table 20: Age/Earnings Profile Regression Results for Equations 1 and 2

Equation 1: Age Earnings Profile with Education

Variable		Parameter Estimate	T-Statistic
Intercept	C	1.4740	7.21
Age	β_1	0.3233	29.84
Age Squared	β_2	-0.0035	-24.74
Years of School	β_3	0.0661	10.53

Adjusted R-Squared: 0.3491

Equation 2: Age Earnings Profile with Foreign Education and Language

Variable		Parameter Estimate	T-Statistic
Intercept		0.7919	3.479
Age	β_1	0.3434	31.34
Age Squared	β_2	0.0037	-26.01
Foreign School	β_3	0.0462	7.03
Canadian School	β_4	0.0722	11.04
English Ability	β_5	0.4949	3.98

Adjusted R-Squared: 0.3623

The interpretation of the estimated value of β_5 of 0.4949 is that the average immigrant in Alberta with an English language ability will enjoy an income some 49.5% above the average income of the immigrant without English language ability **after allowing for the influence of experience and education.** This estimate of the effects of language on the ability to earn income is higher than the results in similar research (Chiswick and Miller, 1988; McManus 1985; and Tainer, 1985). One reason for the larger effect we have found may be a differences in the precision of the language variable we employed. Our use of a crude two state variable indicating whether a person has or has not a knowledge of English precludes identification of relative quality or ability in the individual's language use. In prior studies an index of comprehension has been constructed and entered as the language variable.

To deal with the problem presented by an inadequate language-indicator, we ran one further regression, replacing the dichotomous language variable with a multi-state variable of experience in Canada as given by the years since landing for each immigrant. This variable gives a measure, among other things, of how long non-English speaking immigrants have had to learn English.

Equation 3: $log(INCOME) = C + \beta_1 \times AGE + \beta_2 \times AGE^2 + \beta_3 \times FOR\_SCHOOL$
$$\beta_4 \, CAN\_SCHOOL + \beta_5 \times CAN\_YEARS + \beta_6 \times CAN\_YEARS^2$$

The regression results for Equation 3 are in Table 22. All the parameter estimates were tested to see if they were statistically different from zero, both independently and jointly. We conclude that they are at a 99% confidence level.

Table 21: Age/Earnings Profile Regression Results for Equation 3

Equation 3: Age Earnings Profile with Foreign and Canadian Education

Variable		Parameter Estimate	T-Statistic
Intercept		1.5660	8.047
Age	β_1	0.3084	29.337
Age Squared	β_2	-0.0035	-26.738
Foreign School	β_3	0.0658	10.329
Canadian School	β_4	0.0528	8.320
Years in Canada	β_5	0.0541	9.207
Years in Canada Sq	$\beta6$	-0.0007	-5.375
Adjusted R-Squared:	0.3960		

The coefficient estimate of β_5 is positive, indicating that each additional year in Canada adds to the immigrantís income. As found in Chiswick and Miller (1988) and in Tainer (1985) the negative value for β_6 indicates that there is a diminishing return to the number of years spent in Canada. Note the relative magnitudes of the estimates of β_3 and β_4 in Equation 3 is reversed from what they were in Equation 2 suggesting that the return to an extra year of foreign schooling is higher for immigrants than the return to an extra year of domestic schooling. This is consistent with studies of foreign-born males in the United States (Tainer, 1985), but has not been found in previous studies on Canadian data. These results support giving priority to immigrants based on levels of educational attainment and a working knowledge of English.