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**EMPLOYMENT STABILITY AND THE ADJUSTMENT OF
IMMIGRANTS: AN EXAMINATION OF DATA FROM THE
SURVEY OF LABOUR AND INCOME DYNAMICS**

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EXECUTIVE SUMMARY

Using data from the Survey of Labour and Income Dynamique (SLID), this study will address itself to the labour market adjustment of immigrants in Canada. Its focus is on employment stability. Stability is measured by the risk of unemployment and by the duration of unemployment spells or the demonstrated capacity to recover from unemployment. Adjustment will be assessed with reference to the general population. Immigrants can be considered to have achieved a milestone in their adjustment when they are at no greater risk of unemployment and are able to replace lost jobs as quickly as other Canadians. To the degree, however, that they have lower risks of unemployment and faster recovery from joblessness, immigrants can be said to be better adjusted to the labour market than non-immigrants. The study will also attempt to identify human capital and other factors which influence the risk of unemployment, the ability to find a job and the time required for adjustment.

Recent immigrants are at a greater risk of unemployment than are other Canadians. But, leaving aside potential differences between arrival cohorts, immigrants apparently adjust to the point where they share the same hazard of unemployment as non-immigrants. This appears to happen within 15.6 years on average. Female immigrants adjust even faster. The time taken for this adjustment, however, is sensitive to a number of other factors. Age, education, Canadian work experience, occupation, location, marital status and family size all exert an influence. Immigrants who have no advantages over non-immigrants with respect to these factors require almost 24 years to adjust. Those with disadvantages, it can be surmised, will take even longer and may always be at a higher risk of unemployment.

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1. INTRODUCTION

This study will address itself to the labour market adjustment of immigrants in Canada. Its focus is on employment stability. Stability is measured by the risk of unemployment and by the duration of unemployment spells or the demonstrated capacity to recover from unemployment. Adjustment will be assessed with reference to the general population. Immigrants can be considered to have achieved a milestone in their adjustment when they are at no greater risk of unemployment and are able to replace lost jobs as quickly as other Canadians. To the degree, however, that they have lower risks of unemployment and faster recovery from joblessness, immigrants can be said to be better adjusted to the labour market than non-immigrants. The study will also attempt to identify human capital and other factors which influence the risk of unemployment, the ability to find a job and the time required for adjustment.

These questions are important ones for a number of reasons. Firstly: the absolute influence of immigration on Canada and the Canadian labour market is becoming more important. In proportion to its population, Canada's current level of immigration is perhaps the highest in the world. More than 200,000 immigrants have arrived in Canada in every year of this decade. The 1990's can be compared only with the great waves of immigration which populated the prairies in the opening decades of the century and which saw the resettlement of Europeans following the Second World War.

Secondly: the number of immigrants coming each year is increasingly independent of Canadian economic and labour market conditions. Persistent economic disparities on a global scale have meant that immigrants are still willing to come

despite what have been high levels of unemployment in the Canadian context. Since the late 1980s, moreover, the Canadian Government has been less disposed to attempt to control the level of immigration in response to the domestic demand for labour. Similarly, while an important portion of the immigrant inflow continues to be selected according to the capacity to adjust, specific occupational labour shortages play a less important role. Authorities question their capacity to anticipate conditions and have apparently come to believe that the impact of immigration is positive to neutral even during a recession. The Immigration Service, now independent of the Manpower/Employment/Human Resources portfolio, has shifted "... from short- to long-term planning." (CEIC, 1989; CEIC, 1990) Immigration levels are now set according to the broader and longer term economic, social and humanitarian interests of the country. Levels remained high during the recession of the early 1990's, for example, and have been sustained despite high unemployment. This may pose adjustment challenges for those who arrive.

Thirdly: the overall success of immigration for Canada in all spheres may be sensitive to the labour market adjustment of immigrants. Research has shown a modest per-capita economic benefit to existing residents through immigration (Economic Council of Canada, 1991) and suggests that immigration has little impact on the overall unemployment rate (Devoretz, 1991). However, to the extent that they rely on transfers and do not pay taxes, newcomers could easily consume any benefits and even produce costs for existing residents (Chiswick, 1982). This in turn could undermine support for immigration and tolerance for immigrants and minorities. Participation in the economy and particularly in paid labour is the path to economic independence for most immigrants and may ease the acceptance of newcomers in general.

Finally: recent studies have alerted us to a disquieting trend. Immigrants appear to be taking longer to achieve Canadian economic norms. Some have even suggested that Canada's more recent immigrants will never reach Canadian norms (Borjas, 1988; Bloom, Grenier & Gunderson, 1992).

This paper will open with a review of the relevant literature, section III will provide an overview of the longitudinal data from Statistics Canada's Survey of Labour and Income Dynamics used in the analysis. Section IV outlines the techniques employed: survival analysis and proportional hazard models. Results are described in section V and Section VI offers some tentative conclusions. Tables, statistical information and model parameters are contained in the appendices.

II. LITERATURE REVIEW

Changes in Canada's immigrant admissions policy, combined with secular shifts in the labour market appear to have exerted a profound effects on the economic fortunes of immigrants in the last few decades.

Most studies of immigrant adjustment have compared income differentials between Native and Foreign Born in order to assess the level of immigrant success in the Canadian labour market. The capacity of immigrants to obtain and maintain a stable job is a critical antecedant of successful labour market adaptation. (Manpower and Immigration, 1974). This section will review labour market literature which identifies the important human capital attributes most favorable for economic adaptation of immigrants in Canada.

In the recent decades, the economic fortunes of Canada and U.S. bound immigration have undergone dramatic declines (Chiswick B.R. et. al 1985, Borjas

1988). This raised the question whether the “earlier robust earnings of the foreign born” could be maintained by the current cohorts of incoming immigration streams. This was in response to the apparent slowdown in the pace of immigrant economic adaptation in the last two or so decades. Borjas in fact suggested that policy driven immigration changes coincided with the entry of lower quality immigrants in the recent years. This may have contributed to the noticeably diminished labour market success of recent waves of immigrants in relation to those of their predecessors. It is not entirely clear from the literature, whether patterns of immigrant employment stability, (measured by risk of unemployment, and capacity for recovery from unemployment) are equally disadvantageous for immigrants entering the Canadian labour market.

Much of the current debate regarding labour market success of Canada’s immigrants was based on immigrant earning differentials. The 1973 Job Mobility Survey for example, suggested that the earnings differentials for foreign and Canadian born men have widened considerably between the mid to late 1960’s. Consistent with the more extreme declines in the economic fortunes of immigrants in the US, two competing sets of explanations were advanced to explain these trends. Borjas (1988) suggested that flattening of the U.S. foreign born earnings profile was attributed to a decline in immigrant “quality”. Abbott and Beach (1987) on the other hand argued that labour market structural change also accounts for the apparent comparative reduction in immigrant (income) performance.

Recent studies selected important human capital indicators to compare labour market adjustments of immigrants. Economic adjustment of Canada’s immigrants has been compared in terms of earnings, occupation, labour market participation and unemployment rates to those of the Canadian born and other immigrant

subpopulations. (Swan 1996). With the apparent decline of economic fortunes for recent immigrant cohorts, comparative analysis also included patterns of immigrant reliance on Canada's social safety net. Remarkably, although immigrants initially have a lower participation rate in unemployment insurance and social assistance than Canadian Born their 'assimilation' coincides with higher participation in these programs (Baker and Benjamin 1995).

It is a well known fact that following their arrival, immigrant labour market entry and earnings levels are not immediately comparable with those of the Native Born. Foreign Born credentials often require certification, while newcomers usually need to familiarize themselves with the available opportunities, prior to taking full advantage of the jobs available in the host society labour market. Successful adjustment, for immigrants is said to occur when newcomer economic performance is indistinguishable from that of the Canadian Born in the host country labour market.

Much of the comparison of immigrant labour market performance to that of Canadian born originated from microdata source tapes from the 1971, 1981, 1986, and 1991 Census data. Other surveys, such as the 1973 Job Mobility Survey, and the 1969-1971 Longitudinal Study of Immigration allowed estimation of labour market adjustment of the sampled immigrant population over time. Even the earliest longitudinal study concluded that job market success is of primary importance in determining the success, or failure of immigrants in adjusting to the new life in Canada. (Manpower and Immigration, 1974). The remainder of this section will provide a brief overview of selected issues pertinent to the economic adjustment of immigrants in Canada. For the purpose of this paper the selected literature will focus on those aspects of the human capital model which are most pertinent to analysis of employment stability, i.e. duration of unemployment and

labour market entry of immigrant populations. Immigrant labour market adjustment is driven by the following determinants of job performance: i) human capital factors and cohort “quality” issues, ii) survey limitations for estimating immigrant occupational achievement and iii) importance of structural changes in the Canadian labour market.

A. Human Capital Attributes and Immigrant Economic Adjustment:

The observed differentials in labour market adjustment are largely explained by occupation, education, age and gender configuration among selected national groups. As Ornstein (1982) points out, human capital attributes explain approximately three quarters of the observed difference in occupation and about half the difference in job income levels for selected national groups. However, considerable differential in labour market returns was found to accrue to different immigration cohorts even if they have achieved similar education and occupational experience in their country of last permanent residence. Ornstein’s analysis could not distinguish whether observed pay differentials originated from pay differences among firms, or from pay differentials between immigrants and non-immigrants within similar places of work.

Recent comparative cross-sectional research by Fagnan (1995) used 1971-1986 Census to focus on Canadian Immigrant earnings to assess the pattern of immigrant integration in Canada’s Labour market. Again, human capital attributes drive labour market performance and appear to coincide strongly with immigrant success in the job market. Family size increases women’s propensity for work entry, but exerts no apparent effect on the labour market entry of males. Marriage status increases males’ labour market participation, while decreasing it for females. Overall levels of household income which include moneys from all

other sources are not related to immigrant labour force entry. Lastly immigrant labour market participation increases with age in the first part of the life cycle. Predictably and consistent with human capital, Fagnan confirmed that immigrant labour force participation declines at some critical future threshold in the second half of each individual's working life cycle. In short immigrants tended to integrate rapidly into the labour force consistent with their labour market characteristics, as specified by the human capital model. Fagnan estimated that in fact, the foreign born tended to outperform the native Canadians in amount of earned annual income within 12 to 14 years following their arrival in Canada. It was not indicated whether immigrant labour market behavior, including job entry rates and separation durations converged to resemble those of the Canadian born within this 14 year time period.

Her analysis further suggested that estimated length of time that immigrants require to achieve levels of annual earnings is confounded by the relationship between cohort "quality" effect, and the true length of time required for "catch-up". Time dependent analysis of these attributes is, (as Fagan points out) generally beyond the analytical capacity of cross-sectional studies. This led her to conclude that "...A longitudinal study with a specific job experience variable and a history of occupational mobility is required to conform to these conclusions across time and skill groups...". (Fagnan, 1995, p. 205).

B. Limitations of estimates of Immigrant Labour Market Performance:

Comparisons of economic performance of immigrants are often undermined by treatment of occupation as an independent variable. As a number of researchers observed, Swan (1996) immigrant occupation or observed unemployment patterns, may in effect ignore other very real barriers which suppress full

immigrant access to the labour market. Foreign born visible minority women for example, tend to experience a ‘nonrandom’ pattern of earnings disadvantage, even after holding constant key human capital variables (Boyd, 1992). For this reason, estimates of required length of time necessary for immigrants to “catch up” to the level of labour market performance of Canadian born may not be accurately estimated by survey instruments. This is because currently held occupation can be symptomatic of potential inequalities, or distortions in the labour market. These may persist even if human capital labour market variables are held constant.

C. Structural Changes in the Canadian Labour Market

The pattern of structural change in the Canadian labour market was further analysed using the 1973 Job Mobility Survey (Abbott and Beach, 1987). The study compared changes in earning differentials of newcomers to those of the Canadian Born using earnings from the 1972 reference year. Their findings suggested that recent labour market changes play an increasingly important role in the economic performance of immigrants, and are in large measure responsible for the apparent decline in immigrant income performance.

The study further identified the contextual labour market changes which placed comparative immigrant earnings in less favorable light. For one, several years prior to the survey, there occurred a steepening, i.e. increase of annual earnings of the Canadian born. In turn, this tended to amplify the earnings differentials which had to be ‘made up’ by the immigrants to reach income levels already enjoyed by the Canadian Born. As a result the newly arrived immigrants have a comparatively larger income gap to overcome following their arrival in Canada in order to enjoy a similar labour market return on their credentials. Secondly, YSM

(years since migration) earnings of foreign born have become flatter in the recent decades, suggesting that the more recent newcomers are catching up to the Canadian Born at a slower rate. Lastly as Abbott and Beach argue, over time, the more recent immigrants experience a slower earnings 'return' on their Canadian work experience.

Cumulatively these three factors will increase the number of years which immigrants require to 'assimilate' to the comparable labour market returns of the Canadian born. These underlying labour market changes may exert important effects on the pattern of labour market adjustment (i.e. probability of job loss, and the likelihood of finding a new job) for the Canadian immigrants.

III. THE DATA: An overview of the SLID

This study is based on data from the first panel of the Survey of Labour and Income Dynamics (SLID). The panel was selected from the same frame used by the Canadian Labour Force Survey. The panel is intended to be representative of the Canadian population as of January 1, 1993. Respondents were interviewed at the beginning of 1993 for the first time in order to gather basic contact and demographic information. The same respondents were interviewed early 1994 and at one year intervals thereafter in order to complete a calendar detailing, for example, changes in household composition, labour market experiences, fluctuations in sources and amounts of income and episodes of education or training for the immediately preceding year. Two waves of information are now available and are reflected in this analysis. The first wave contains data for the year 1993 the second wave contains similar data on the same panel of respondents for the year 1994. With this data, we are able to track labour market affiliation

over time, to calculate the duration in a particular state and to examine the sequence of relevant events or periods for each respondent.

The data file for the two available waves contains information for 27,854 longitudinal respondents, 2,993 of whom were immigrants (see Appendix I). Each of these respondents has a positive longitudinal weight. The panel's longitudinal weight is recalculated each year to account for respondents who could not be located or refused to participate for that year. The data in this report is weighted according to the longitudinal weight for 1994 (ILGW26C). As might be imagined the SLID is based on a complex sampling design. Weighting and design effects impact on our analysis and especially on our tests of statistical significance. We have corrected for these effects as described in the methodology section below.

While the SLID database has many advantages there are also a number of important limitations with respect to immigrants. They are reflected, firstly, in the way in which the population is identified. Comparisons in this paper are between immigrants and non-immigrants. Perhaps more typical is a classification based on foreign and Canadian birth. Immigrants include all those who describe themselves as having immigrated to Canada. Non-immigrants include everyone else. About 40 respondents in the longitudinal file indicated that they had been born outside Canada, but did not identify themselves as having immigrated. As a consequence they were not asked about their year or period of arrival. Almost all were born in the Europe or the U.S. It is possible that these people were Canadian Citizens at birth (e.g. the children born to diplomats or military personnel while they were posted in foreign countries). The SLID instrument does not contain a Citizenship question which might allow us to verify this. While the survey is not intended for persons who do not consider Canada their home, it is also possible that some of these 40 individuals are temporary residents who are not landed immigrants. Based

on the pattern with respect to country of birth, we have included this small group in the non-immigrant population.

Unfortunately, SLID does not capture information on the Canadian official language ability of respondents. SLID questions and instruments are available only in English and French and for the most part interviews are conducted in these official languages. In some cases information is gathered from proxy respondents or interviewers may be able to translate questions. Nevertheless, it seems safe to assume that the SLID sample includes comparatively few immigrants who do not speak an official language. In other words, we are probably presented with an optimistic impression of the labour market adjustment of immigrants.

IV. METHODOLOGY

A. Survival Analysis:

As stated above, the objective of this paper is to use SLID longitudinal data to estimate: 1) Likelihood of becoming unemployed, and 2) the duration of unemployment, separately for immigrants and other Canadians. A further objective is to estimate the time taken by immigrants to achieve Canadian norms with respect to employment stability and to identify those factors which influence the length of this adjustment.

Actuarial life table techniques were used to summarize the risk of becoming unemployed and the probability of finding employment over SLID's two year reference period. In order to examine the risks of unemployment, the survival or life table analysis began with every member of the population. The life tables record, for each week of the period, the number of persons who are observed to be

unemployed for the first time. Persons who leave the labour force, die, immigrate or otherwise fall out of scope in any given week are removed from the 'at risk' population at that week. Estimates of probability of respondent job loss, take into account these observations up to the point they are removed, they also account for right censored cases (i.e. cases where no episode of unemployment is observed over the entire reference period). These are key advantages of life table survival technique.

The chances of finding a job are assessed in the same way. The analysis includes all persons who had any episode of unemployment during the SLID reference period. The week by week report begins in the first week of unemployment that occurred within the reference period. The event of interest is employment. Those who leave the labour market or fall out of scope are removed from the population under consideration.

The survival function, denoted $S(t)$, is defined as the proportion of cases surviving longer than a specified time t . Our survival functions reflect 1) the proportion of cases who have not become unemployed (i.e. remained employed); and 2) the proportion of unemployed persons who have remained unemployed, up to the end of each week in the reference period. The survival functions for different groups can be plotted and compared. Statistical tests (e.g. Gehan's generalized Wilcoxon test) are available to determine if the groups have the same or different survival functions. We constructed life tables and compared survival functions for immigrants and non-immigrants and for different periods of arrival. Owing to their volume, only the basic life tables for unemployment and employment are presented in Appendix V.

B. Cox Regression:

Much of the immigrant human capital literature (Chiswick, 1976, Robertson 1986) suggests that time following job separation to the time that a new job is found is dependent on a number of specific socio-demographic predictor variables, or covariates. The same is hypothesized for the risk of unemployment and economic adjustment in general. These covariates include measures of human capital, age, location, time in the host country, etc. Life table analysis's become unwieldy and very large samples are required to populate the tables as many variables and/or many categories are examined. Event history techniques were thus used to allow specifications of multiple dynamic covariates which can be all estimated simultaneously, within a single equation.

Event history analysis techniques offer additional advantages. Conventional multiple regression techniques are not able to analyze time-to-event relationship between dependent variables and independent covariates. This is because they cannot handle censored observations, i.e. those cases where the event under study such as for example an episode of unemployment which may have not yet occurred for the respondent. Cases where the event has not yet occurred, cannot simply be excluded from the analysis since steady employment is itself an important indicator of success in the Canadian labour market. To overcome this problem Event History techniques such as Proportional Hazards (Cox Regression) model must be used for analyzing the time dependent relationship for probability of unemployment and elapsed duration find a new job using multiple explanatory covariates.

The hazard function, $h(t)$, is a rate related to the survival function. It is a conditional probability of failure (e.g. a respondent leaves the unemployed

population by finding a job) divided by the time interval (a given week in the reference period). It denotes the expectation that a case will terminate in any given week. The hazard is not a probability in the usual sense, it can take on values greater than one. The higher the hazard, though, the higher the probability of failure.

The Cox regression model can be expressed in terms of the hazard function. Mathematically a generalized multivariate version can be written as:

$$h(t) = [h_0(t)] e^{(B_1 X_1 + B_2 X_2 + \dots + B_p X_p)}$$

Where $h_0(t)$ is the baseline hazard function when X is 0 or denotes the reference group, e is the base of the natural logarithm (2.718), $X_1 \dots X_p$ is a vector of covariates and $B_1 \dots B_p$ is an associated vector of regression coefficients. Cox regression thus estimates the relative risk of failure. The hazard function of interest is assumed to vary proportionally with the reference hazard function over the entire time period examined. This assumption of proportional hazards was not violated in the analysis presented below.

Two Cox regression models (or rather sets of models) were constructed; the first explains the hazard of job separation, and the second deals with the hazard of new employment based on immigration status, time in Canada and a number of other covariates listed below. This comparison allows us to estimate the number of years at which the labour market performance of immigrants will become indistinguishable from the rest of the population.

C. Weighting and Design Effects:

As already noted the SLID sample is a subset of the sample used for the Labour Force Survey (LFS). The LFS sample is a probability sample drawn from an area frame and is based on a stratified, multi-stage design. In short, it is a complex survey and design effects are present. Design effects represent the extent to which the sampling design has deviated from simple random sampling. While popular statistical software packages such as SPSS and SAS can handle weighted data and can produce accurate estimates, the standard errors associated with these estimates are typically underestimated due to design effects. As a consequence statistical tests computed by the widely available packages can produce false indications of significance. Researchers who rely on these tests are in danger of Type I error or of failing to reject the null hypothesis of no effect.

In order to avoid this danger, we made use of specialized software in the testing of our models. The SUDAAN package for the statistical analysis of correlated data, developed by the Research Triangle Institute, is able to estimate design effects and to provide more accurate tests. The program uses information about the sampling design and data on the strata and primary sampling unit of each case to approximate the deviation from simple random sampling for each variable or effect in a model.

The design effects for each variable in our Cox regression models are reported under the columns headed DE-EFF in Appendix V. Large values indicate model parameters which might be sensitive to Type I error if testing were done under the assumption of simple random sampling. A more correct *Wald* statistic, for example, can be obtained by dividing the one reported for weighted data by SPSS or SAS by the design effect (DE-EFF). All of the estimates and statistical tests

reported below were calculated in SUDAAN and take proper account of weighting and design effects.

RESULTS

A. Immigrants and Non-immigrants:

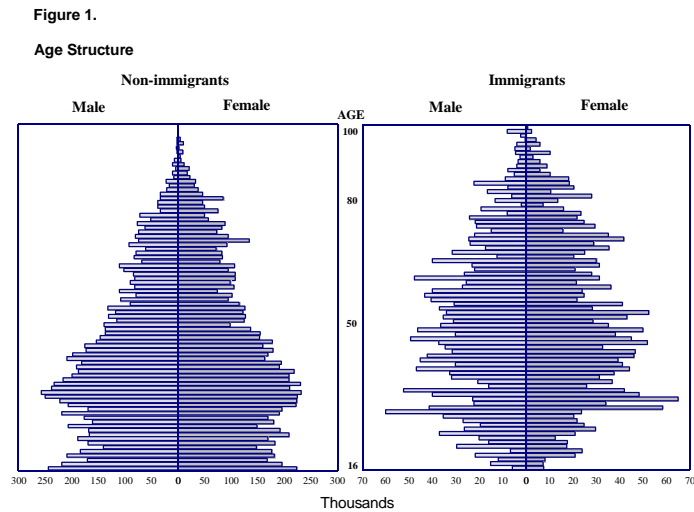
Broadly, we have found that immigrants initially suffer from a higher hazard of unemployment which they appear to overcome with time in Canada. They take no longer than non-immigrants to find work, but newcomers may be more likely to accept lower quality higher turnover jobs. A number of factors condition the labour market performance and adjustment of all Canadians and comparisons between immigrants and non-immigrants are influenced by other differences between the populations. We will begin with simple bi-variate comparisons, which after all reflect the actual situation. Controls will then be introduced in order to standardize the two populations and isolate the true effects of immigrant status and time in Canada.

According to estimates based on respondents interviewed in the Survey of Labour and Income Dynamics (SLID), immigrants exceed Canadian norms on some measures of economic performance and fall below them on others. In 1994, for example, the mean total income from all sources for immigrants exceeded the non-immigrant average by 3.2%. Immigrants also received on average over 50% more income from investments than did the non-immigrants (see Appendix II, table 2). On the other hand, however, average annual and weekly earnings from employment were higher for non-immigrants. Immigrants received more income on average in the form of government transfers. They collected more in the form of Canada and Quebec Pension plan benefits, more in Old Age Security payments,

more in Spouses Allowances and the Guaranteed Income Supplement, more in Workers Compensation, more in Social Assistance and more in GST credits. Non-immigrants collected more on average in the form of Child Tax Credits and Employment Insurance Benefits.

Adult immigrants (15+) have lower rates of labour force participation. They tend more frequently to be out of the labour market and to work fewer weeks per year. Among those who do participate, however, immigrants have a lower rate of unemployment. Over the year 1994 about 16% of immigrants and 18% of non-immigrants experienced a period of unemployment. Immigrants were a little more likely to have been unemployed for the entire year, however (see Appendix II, table 1. and Appendix III). In terms of their main occupation, immigrants were more likely to be managers, professionals, semi-professionals or technical workers (Appendix II table 1.). They tended more often to be involved in manufacturing, wholesale trade, business services, education, health or accommodation and food services (. In comparison to the general population they were less likely to be involved in agriculture, fishing and trapping, forestry, mining, construction, transportation, communications, retail trade or government (Appendix II, table 1.).

There are a number of reasons for these differences between immigrants and the native born. Perhaps most importantly, the immigrant population in Canada is older on average than the non-immigrant population. Immigrants tend to arrive as adults and by definition their Canadian born children are included in the non-immigrant population. Also, a large wave of immigration coincided with Canada's baby boom in the 1950's. As can be see in Figure 1 below, based on SLID data, the non-immigrant population contains relatively more teenagers and young adults than the immigrant population.



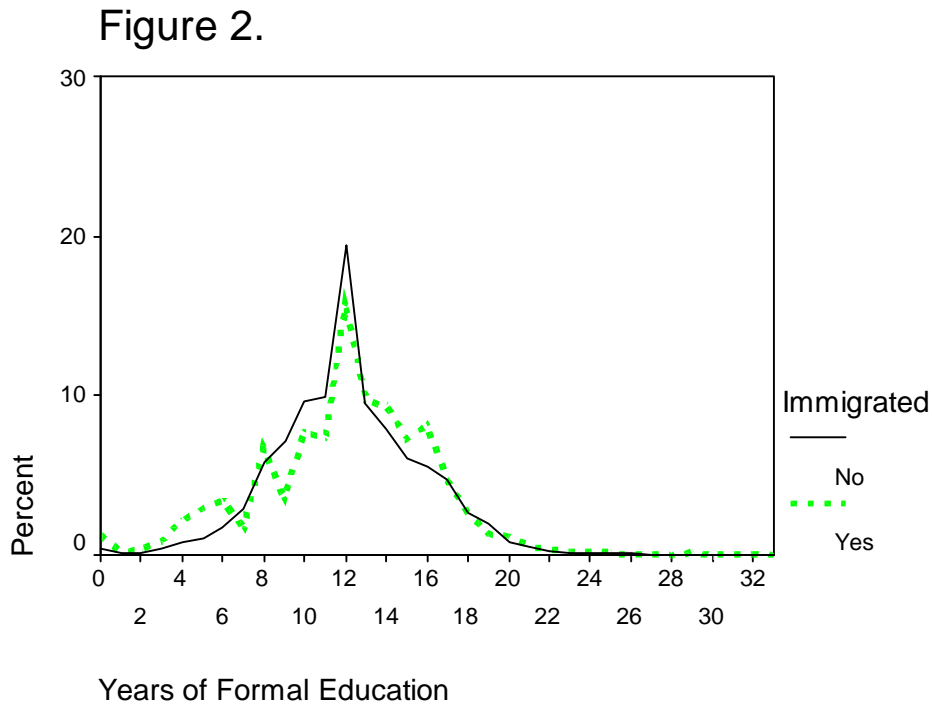
Source: Statistics Canada, Survey of Labour and Income Dynamics

According to weighted data from the SLID, adult immigrants (15+) were 49 years old on average in 1994 compared to an average age of 42 for the rest of the population. Immigrants tend, in short, to be further along in their life cycle, perhaps to have more job seniority, to have attained stable higher status jobs, and higher incomes. They also tend, for the same reason, more often to be retired and to rely on transfers.

Immigrants are also more favourably located in Canada with respect to markets. A higher proportion of immigrants live in urban areas (93% vs. 81.8% see Appendix II, table 1.). Only infrequently have immigrants chosen to live in Canada's less

prosperous areas or in regions plagued by seasonal fluctuations in the market for labour.

Many immigrants to Canada are selected according to labour market criteria including: education, job skills, and official language ability. Most still enter outside this system, however. They come by virtue of their close family relationship with selected immigrants or with persons already in Canada. Some are also admitted in order to protect them from persecution in their country of origin. Thus, in relation to the Canadian population, arriving immigrants are distributed bimodally on most measures of human capital. The relative concentration of immigrants among the highly educated and among the poorly educated is evident among the stock in Canada. This is reflected in the SLID sample. A larger proportion of immigrants hold a university degree. Similarly, more immigrants hold post secondary certificates and a larger proportion have graduated from high school. At the same time, however, a larger proportion of immigrants have no formal education or have only attended grade school (Appendix II, table 1.). On average, the immigrants in the SLID sample had slightly fewer years of formal education than other Canadians.



Statistics Canada: Survey of Labour & Income Dynamics

B. Period Of Arrival:

The income and labour market performance of immigrants is clearly influenced by the length of time in Canada or period of arrival (see Appendix II). Researchers have decomposed this influence into adjustment effects, and cohort effects (Borjas, 1988). Adjustment effects are captured by time or years in the host country. Immigrants have initial disadvantages in the form of human capital and information which is not tailored to local markets. They may have language problems, they may lack contacts, they typically lack local experience and they may have to upgrade their education and training. These deficits are overcome with time, however, and the economic performance of immigrants is thought to improve and

eventually equal or even surpass the performance of comparably qualified persons born in the host country. Important questions center around the length of time this transition takes and the factors which influence that length. The length and shape of the time to adjustment function may of course vary with human capital and labour market barriers including credentialism and discrimination.

Cohort effects are captured by the specific period of arrival and the conditions which prevailed in the source and destination countries at that time. These conditions include the socio-political environment, the state of the economies and the relative returns to various factors of production and types of human capital in each country which motivate people to move or select themselves. They also include admission criteria operating in the destination country and exit controls in the country of origin. From the point of view of the researcher in the country of destination who relies on cross-sectional data, cohort effects are inextricably confounded with time in the country and they cannot be explained entirely by measurable differences in human capital. So called "unobserved human capital" is also held to produce differences. According to George Borjas (1988), these unobserved influences include more ethereal things such as drive, ambition and attitude. Such differences, it is argued, explain why the immigrants of the recent past are not adjusting as quickly as did previous cohorts. Cohort effects also -- and perhaps more importantly -- include structural changes in the economies of source and destination countries. Changes such as the demise of smokestack industries and unionized manufacturing jobs in favour of an information and service economy could easily mean that the opportunities available and hence the adjustment process is different for newer immigrants.

The SLID longitudinal sample currently contains only one panel of respondents selected in 1993 and tracked over 1993 and 1994. In this single panel the influence

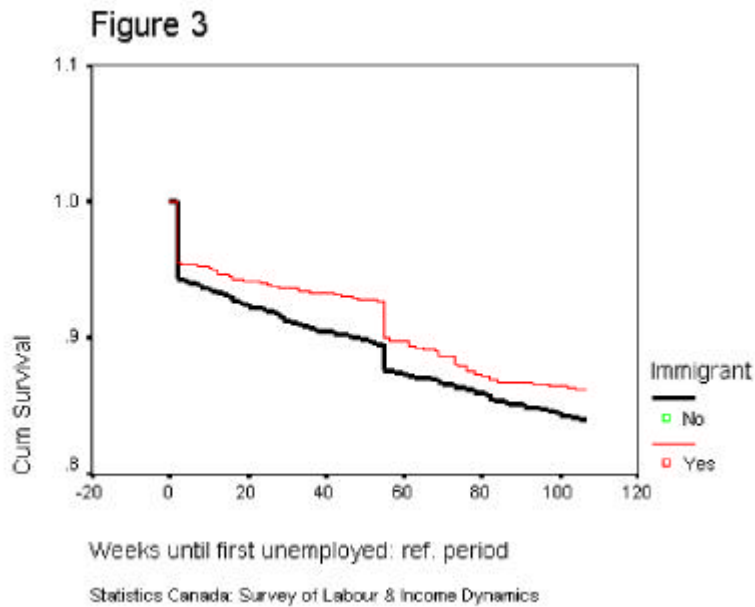
of year of arrival cannot be disentangled from that of time in the country. Consequently, cohort effects are not measurable in any direct way. Our conclusions with respect to the adjustment of immigrants will be limited to the stock currently in the country. We must acknowledge that all or a portion of the effect we attribute to adjustment might indeed represent cohort effects and a sample drawn from the stock at a previous or future time might produce different results. As subsequent panels are rotated into the SLID sample, however, it may be possible to isolate cohort and adjustment effects by pooling data across panels.

As is evidenced by the tables in Appendix II & III, unemployment rates among immigrants vary with time in Canada. Immigrants who arrived in 1980 or after had an unemployment rate of 16.2% at the opening of the SLID reference period in the first week of January 1993. This compares with a rate of 9% for all immigrants and 9.3% for non-immigrants. Those who arrived in the 1970's had only half the unemployment rate of those who immigrated after 1980. Only a small proportion of respondents were unemployed throughout the SLID reference period, but the proportion was higher among recent immigrants. Similarly, the proportion of those immigrating in the 80's and 90's who remained unemployed throughout the entire year was double that observed for the overall population in both 1993 and 1994 (4.8% vs 2.3%: see Appendix II, table 1).

Unemployment rates declined generally from 9.3% to 8.8% over the two year SLID reference period. The rate declined somewhat more quickly among recent immigrants, but by December 31, 1994 it remained well above the general rate at 14.2%. Recent immigrants also had more episodes of unemployment on average.

C. Survival Analysis:

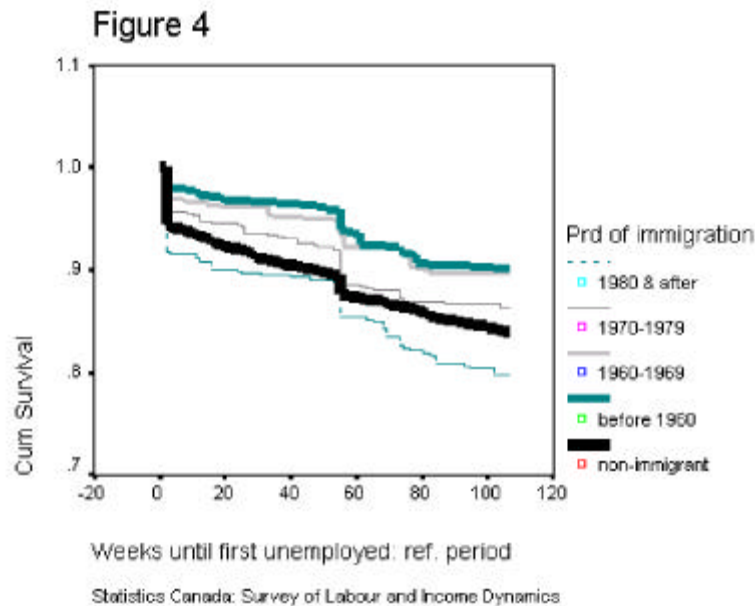
In order to explore more fully the relative risks of unemployment for non-immigrants and immigrants, a survival analysis was conducted. We began by treating each longitudinal SLID respondent as at risk of unemployment as the two year reference period opened. Their labour force status was examined in each week. The weighted number of respondents who were unemployed at the close of each week (i.e. willing, able and looking for work but without employment) is recorded under the “number of terminal events” column in the first actuarial life table of Appendix IV. Respondents who left the labour-force or left the sample (through death, emigration or otherwise) are removed from the population at risk in each week. The remaining respondents are deemed to have survived in employment. The proportion of the at risk population surviving in each week of the 106 week reference period is reflected again in the tables of Appendix IV. About 84% of the SLID respondents at risk of unemployment remained employed at the end of the two year period. The cumulative proportion of all those still surviving at the end of each week defines a survival function denoted : $S(t)$. The survival functions for immigrants and non-immigrants are compared below. As we can see immigrants apparently enjoy greater job stability.



86% of immigrants avoided unemployment for the entire 2 year period while fewer than 84% of non-immigrants did. Tests indicate that the observed difference between the two groups is statistically significant.

The seam effect, or sudden shift at week 53, reflects the approximately 1.5% of panel members or proxy respondents who answered differently or recalled events differently in the two waves of the survey. Data for week 53 was collected in February 1994 and data for week 54 was collected in February 1995. The seam is apparent in our life tables and in all of our survival and hazard functions. Such seam effects are commonly observed in longitudinal panel data which captures information from respondents who have been interviewed at two or more widely separated points in time about a sequence of events which were relatively close together. While the effect appears large in the context of week to week changes in employment status, only a small proportion of the sample is actually involved (see Lemaître, 1992).

The adjustment or cohort effects observed in the cross-sectional tables presented in Appendix II & III are also apparent in life tables. A comparison of the survival functions for immigrants who arrived in different periods (see Figure 4 below) reveals important and statistically significant differences.

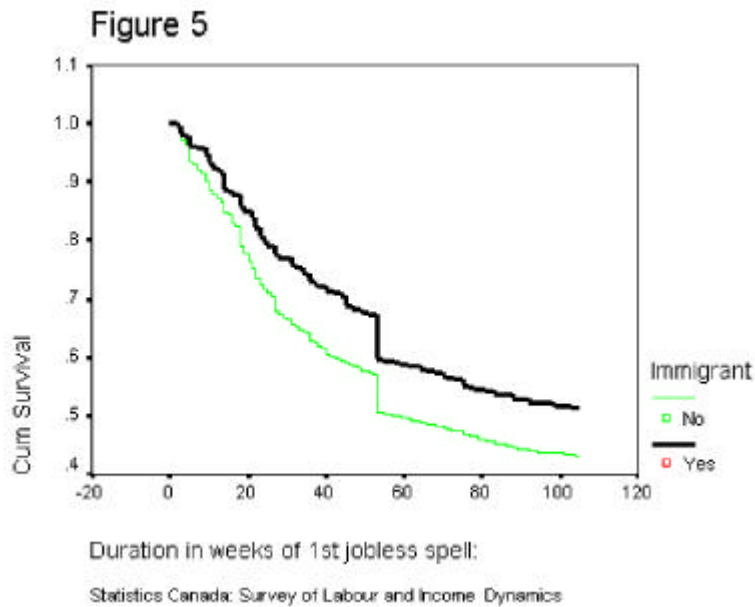


The second question posed at the outset of this study concerns the duration of unemployment spells for immigrants and non-immigrants. Given that about 14% of immigrants and 16% of non-immigrants experienced a period of unemployment within our reference period, what are the respective chances of recovering from such an episode. To the extent that actors have knowledge about the ease of replacing a job, the behaviour of employed persons and hence the risk of unemployment could even be influenced.

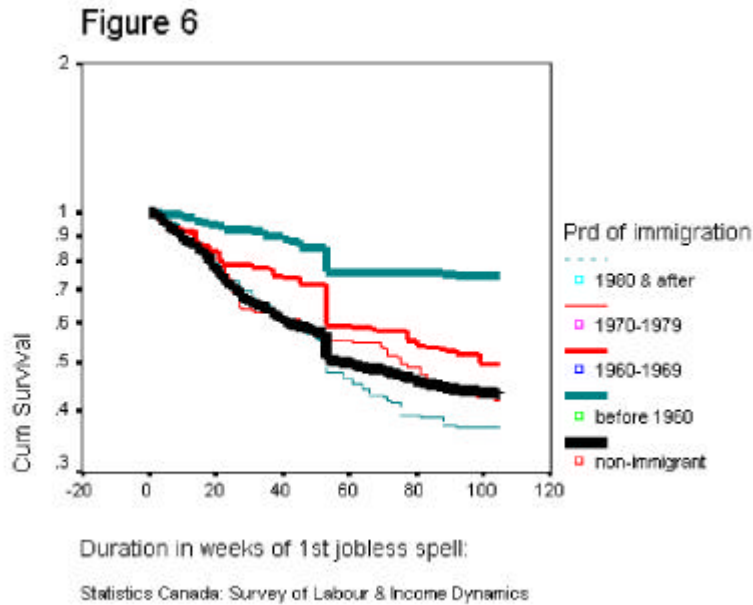
The second actuarial life table in Appendix IV reflects the decay in the population ready and looking for work but jobless. All respondents who experienced a spell

of unemployment during the reference period are included in the analysis. The number of those who found work in each week of their first spell of unemployment is recorded under the “Proportion terminating”. Weeks are counted from the beginning of the spell or from the beginning of the reference period, whichever is more recent. Jobless spells could only be terminated by employment. Persons who left the labour market during the first jobless spell are excluded from the analysis. Persons who died, emigrated or otherwise fell out of scope are censored or withdrawn from the analysis at that point. As we can see about 44% of the those who were or became unemployed in the reference period survived in that state until the end of the two year timeframe. In other words about 56% were able to find a job within the reference period. About half had found a job by the 66th week.

Again there are important differences between immigrants and non-immigrants. Their respective survival functions are compared below.



Less than 49% of unemployed immigrants were able to find work within the reference period. In contrast, almost 57% of non-immigrants were able to find work. A comparison of the survival functions for immigrants of different vintages in Canada suggests that the problem is chiefly among those who arrived some time ago.



D: Proportional Hazard Model:

We have already noted the importance of a number of exogenous variables in explaining job stability. It is probable, for example, that the longer durations which immigrants seem to experience in jobs and in unemployment are related to the older age structure of the immigrant population. The geographic location and family context in which respondents live will similarly have an effect on their employment stability. Human capital variables such as education, , job experience and Canadian language ability also have an impact. As pointed out, the immigrant population is not homogenous on these measures.

It is necessary to control for all of these factors in order to determine whether the observed differences in the risk of unemployment and the chances of finding a job are real and solely attributable to immigration status or to adjustment with time in Canada. Multivariate proportional hazard models were resorted to in order to

measure the independent effect of each factor on job stability. Immigration status and time in Canada were included with the other covariates mentioned in two sets of Cox regression models. One set of models examined the hazard of unemployment over the two year SLID reference period the other examined the hazard of finding a job for those who were or became unemployed over the period.

The first dependent measure was: EMPLOYED or the week, over the 106 week SLID reference period, in which the respondent was first observed to be unemployed. EMPLOYED can take on any value from 1 to 107. Respondents who remained employed in the last week of the reference period were coded 107. They are right censored. The outcome subsequent to the December 31, 1994 was, of course, unknown. A weekly labour force status variable was used to determine when, if ever, a respondent became unemployed. This was the failure indicator or event of interest. Respondents who left the labour market, emigrated, died or otherwise left the sample were censored at that point.

The second dependent variable was: JOBLESS or the duration in weeks of the first jobless spell observed in the reference period. It can take on any value from 1 to 106. Only weeks in unemployment that fall within the reference period are included in the duration. Long jobless spells which began before the reference period are confounded with immigration status, time in Canada and even age. Again a status variable is available to differentiate between cases where jobs are found and where the spell ends due to emigration, death or some other reason. The later were censored.

Immigration policy makers have long relied on an implicit model of the economic adjustment of immigrants. This model is expressed in the points system under

which immigrants are selected according to criteria thought to ensure success in the labour market and economy of Canada. These criteria include age, education, occupation and official language ability. The model is also expressed in the preferences given those with arranged employment or relatives in Canada willing to offer support and assistance. It is further reflected in the remedial language training and other settlement help provided to some immigrants and especially to refugees.

Our choice of covariates has been informed by the criteria used by the Immigration authorities. Many of the measures used are involved in the assessment of immigrants. An important exception is official language ability which was not captured in the SLID survey.

In the modeling of adjustment effects, this paper also follows Chiswick (1978) to some extent. Barry Chiswick constructed a multivariate regression model to examine the impact of foreign birth and adjustment on the earnings of males in the U.S.. Among his predictors, he included both a dichotomous indicator for foreign birth and a continuous variable to capture years since immigration. The years since migration variable was coded '0' for native born respondents. These variables are naturally collinear and they should be interpreted in conjunction when both are in the model.

The covariates are (in no particular order):

1. IMMGRNT A dichotomous variable set to '1' if the respondent is an immigrant or to '0' if they are not.
2. AGE26C The respondent's age in years as of January 1st 1995

3. YRSCH18B The number of years of education which the respondent had completed by 1993
4. FMSZ27B The number of persons in the respondent's economic family in 1993. Unattached individuals have a value of 1.
5. UNEINREG The unemployment rate in the respondent's economic region, this variable is intended to capture geographic variation in the labour market, there are 68 economic regions. Owing to changes in the definition of economic regions over time we had to use the 1995 unemployment rates along with the respondent's 1994 location.
6. MALE A dichotomous variable set to '1' if the respondent is male & '0' if they are not
7. MARRIED A dichotomous variable set to '1' if the respondent is married or living with a common law partner '0' if they are not
8. PROF A dichotomous variable set to '1' if the respondent's main occupation is a management, professional or technical one or to '0' if it was not. The main occupation is the one at which they worked the most hours in 1993. If they were unemployed throughout 1993 we used the main occupation in 1994.
9. VISMIN A dichotomous variable set to '1' if the respondent was identified as a member of a visible minority group as defined for employment equity purposes or '0' if they were not. This variable is included to capture effects due to discrimination.
10. YRXFT11B The respondent's work experience in years. This is measured directly in the SLID.
11. YRSHERE The number of years which have elapsed since the respondent immigrated to Canada. The value is set to '0' for non-immigrants.
12. CANED The number of years of education in Canada. This variable is derived based on the total number of years of education, the year of immigration to Canada, the respondents age at immigration, the dates upon which respondents

completed their various courses of study and the length in years of those courses of study.

13. FORNED The number of years of education abroad. This variable was derived based on the total number of years of education minus the number of years of education in Canada.

14. CANEXP The number of years of job experience in Canada. This variable is derived based on the respondents tenure in any job held at the opening of the reference period, the total number of years of work experience reported by the respondent, the respondents year of immigration and their age at immigration.

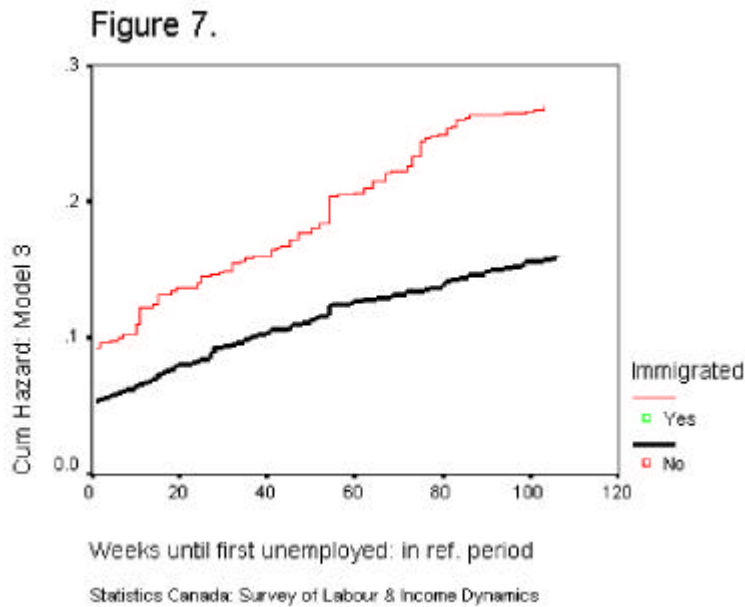
15. FORNEXP The number of years of work experience abroad. It equals the total number of years of experience minus Canadian experience.

Chiswick also includes a quadratic form of years since migration to capture diminishing and eventually negative returns to extra years. However, stability in employment is unlike income and, especially since retirees are censored, there is good reason to believe that the effect of years in Canada on the risk of unemployment can be approximated linearly for our purposes. A number of standard transformations of years since migration were tested, moreover, and were not found to be significant. A graphical examination of the influence of age, work experience and years of schooling on the two hazard functions suggested that linear approximations are adequate for these effects as well. This certainly simplifies the interpretation and the utility of the model.

E: The Hazard of Unemployment:

The results of the modeling exercise are displayed in Appendix V. Model 1. examines the influence of immigration status and years in Canada on the hazard of unemployment. As might be expected, in the absence of any controls, both

variables are highly significant. As we can see from the sign on the coefficient or *Beta* weight in the column labeled *B*, being an immigrant increases the hazard of unemployment. It seems that the risk for immigrants is about 56% higher than the risk for non-immigrants. But, as is evidenced by the second coefficient, years in Canada are negatively associated with the hazard of unemployment. This may be due to adjustment with time in Canada or to cohort differences. It seems that for each year they live in Canada the hazard of unemployment for immigrants declines by about 3%. In 15.6 years they are indistinguishable from non-immigrants. Many factors affect this adjustment period, however. Model 2. is an attempt to control for at least some of them. As we can see: age, years of work experience, years of schooling, family size, and a skilled occupation are negatively associated with the risk of unemployment. A high unemployment rate in the region of residence of course increases the risk of unemployment. All other things considered, including family size, being a male and being married seem also to increase the risk. Having a family to rely on could reduce the incentive to remain in an undesirable job resulting in a greater hazard of unemployment. Alternately, family responsibilities may compel those who have lost a job to search for a new one while persons without families may be more likely to leave the labour market. Women may, likewise, be more likely to describe themselves as non-participants or to leave the workforce for family reasons. As mentioned, those who leave the labour market are censored from the population at risk at that point.

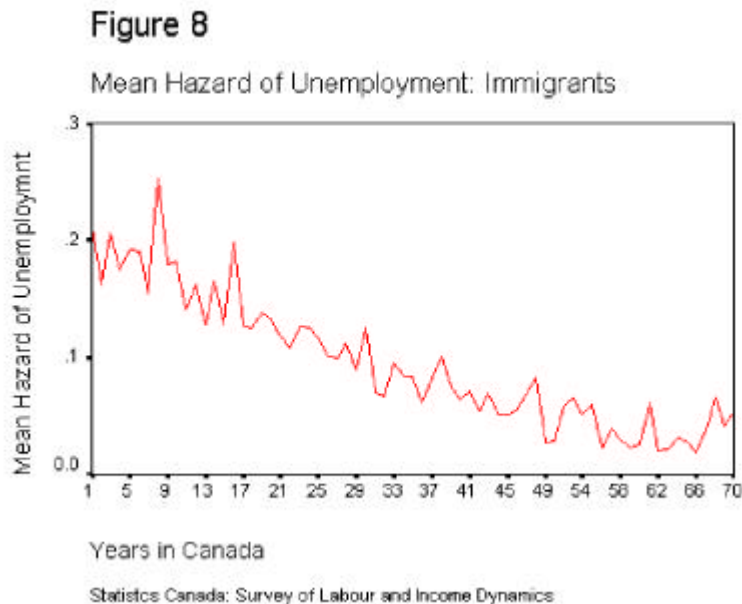


When separate models are estimated for males and females it is observed that female immigrants enjoy faster adjustment (about 4 years shorter than the male average). While the hazard functions are proportional over the observed timeframe and all coefficients retain their signs, it is observed that work experience is not significant for females while it is highly significant for males. Years of schooling is only marginally significant for women and the influence of being in a skilled occupation is much reduced in contrast to the findings for males. Men who lack education and professional qualifications are more likely to be employed in relatively volatile or seasonal industries such as mining, forestry, fishing and construction. Relatively unskilled women, while they may have low status and poorly paid clerical and service jobs, enjoy a risk of unemployment which more closely approximates the risks of highly qualified women. Immigrant women may be adjusting to a different labour market (see Boyd, 1984; Armstrong &

Armstrong, 1984). It is also interesting that marriage has a relatively larger effect on the risk of unemployment for females.

The influence of immigration status and years in Canada remain significant and retain their signs when the covariates are controlled for in the full model. It appears, however, that immigrants take longer to catch up with non-immigrants who are their equivalents in terms of the independent measures. The adjustment period required when all things are held equal is 23.7 years. In other words, the 15.6 year adjustment period reflects the fact that many immigrants enjoy distinct advantages over other Canadians in areas such as age, education, work experience, occupation and location. Immigrants with such advantages reach Canadian norms before the 15 year average. To the extent that immigrants lack these advantages their adjustment period could be much longer. Immigrants who have disadvantages in these areas will perhaps always be at a relatively higher risk of unemployment.

The graph below shows the relationship between the hazard of unemployment for each immigrant respondent, as calculated based on the model, and the number years they have been in Canada. As we can see the curve of diminishing returns -- if any -- is subtle and occurs on average only long after immigrants have surpassed the non-immigrant mean at .137.



It is worth noting that, when controls are introduced, immigration status by itself has no influence on the hazard of unemployment. It is only when the number of years since migration is included in the model that the discussed effects emerge. This is consistent with Chiswick's findings for income in the U.S.

A third model was used to assess the relative influence of education and experience obtained in Canada versus education and experience obtained abroad. SLID respondents are not directly asked where they obtained their education but, they are asked for the year in which they completed each post-secondary program of study and the length of that program in years. In conjunction with the respondent's age and year of immigration, this information provides a good estimate of how much education was obtained in Canada. Direct information is collected about work experience in the SLID. Again, however, it is not possible to determine with absolute confidence how much of this experience was obtained in

Canada as opposed to abroad. The situation is nevertheless better than with census data where total experience must first be inferred from age and only then apportioned to foreign and Canadian based on year of arrival.

As we can see, both Canadian and Foreign education are associated with a reduced risk of unemployment. Contrary to what we might have expected, though, a year of Foreign education seems to be interchangeable with a year of Canadian education. The rationale for decomposing them in the model is not strong. With respect to work experience, though, the story is different. All other things held constant, each year of Canadian experience reduces the risk of unemployment by just over 1%. Foreign experience, on the other hand, apparently has no impact. We must acknowledge, however, that the advantages of Canadian experience may be due in part, to a simple job tenure effect. Respondents who have worked longer for a Canadian employer may have a lower risk of being laid off.

F. The Duration of Unemployment:

The duration of unemployment does not seem to be influenced by immigration status or time in Canada. The results are presented in model 4. in Appendix V. The gender of respondents, however, has a large influence on the hazard of a jobless spell ending. Unemployed males found jobs more quickly than unemployed females. When separate models are estimated for males and females, the covariates change in their weight and significance and sometimes even the signs change, suggesting that interactions may be present. Education and experience improve the chances of finding a job for males and for females in much the same way. Experience may be slightly more important to females. Increased age is associated with longer spells of unemployment for both. The unemployment rate in their region seems to be significant only for males. Overall,

family size has a negative effect on the chances of finding a job, however, it is significant only for females. Married males seem to find jobs much more easily. In contrast, marriage seems to reduce the chances of finding a job for unemployed females (see Zhang & Beaujot, 1997). It appears that men who are members of a visible minority group have greater difficulty finding employment. The variable is not significant for females, but the sign would imply an opposite effect. The immigration status variable, hovers close to significance for both males and females, but again the effects are in opposite directions. The beta weights suggest that immigration status improves the chances of male and damages the chances of female job seekers. A gender/immigration interaction was not significant in the overall model, but a gender/visible minority interaction was significant.

While high status occupations are a significant bulwark against unemployment, the fact that one has worked or eventually finds work as a manager, professional or technician confers no significant advantage when it comes to finding a job quickly. Persons in less skilled occupations appear to have the same hazard of bringing a jobless spell to an end through employment.

Again the decomposition of Canadian and Foreign education is not supported as they appear to be of equal value. Each year of foreign experience seems to increase the hazard of finding a job in Canada by about 3%. Each year of Canadian experience only increases it by about 2%. Persons with foreign experience seem to find and/or accept work more quickly.

As previously mentioned, a significant interaction was detected between gender and visible minority status. The differences in the influence of visible minority status for males and females might be explained in terms of the different labour markets in which they operate. It seems that females are already confined to

comparatively low status and poorly rewarded jobs (Armstrong & Armstrong, 1984). Membership in a visible minority does not appear to act as a barrier for females as they search for jobs in these markets. Visible minority status does appear to be a barrier for males and seems to result in longer spells of unemployment. This could be a discrimination effect or might reflect cultural predilections.

On the surface it is a little surprising that the adjustment of immigrants appears to have no influence on the duration of unemployment. One might have hypothesized that immigrants would find jobs with increased ease as they build contacts and adjust to life in Canada irrespective of their other qualifications. In simple bivariate terms new arrivals clearly have relatively higher rates of unemployment. It also appears that new immigrants are more likely to be unemployed for an entire year (4.8% vs 2.3%; see Appendix II, table 1.). Furthermore, if only immigration status and years in the country are considered in the model, arriving immigrants appear to lag the non-immigrant population for almost 11 years in their capacity to find jobs. It seems, however, that differences in the duration of unemployment are almost completely explained by human capital and the other covariates in the model.

How might we account for the fact that no adjustment seems to occur with respect to the duration of unemployment especially given that one is observed for the risk of unemployment?

An explanation might be sought in terms of the type of work which immigrants accept at various stages in their adjustment. Recent immigrants it might be argued are under compelling pressure to find work, precisely because they often lack reserves of capital and social support networks. They consequently search hard

and accept essentially any work. They may accept lower wages, less prestigious jobs and jobs with higher turnovers or a higher hazard of unemployment (see Piché, Renaud & Gingras, 1996). Evidence of this behaviour can be observed in the earnings, occupational and industrial profiles of more recent immigrants (see Appendix II). Another explanation may lie in tenure. Immigrants who have been in the country only a short time will almost by definition have less seniority and therefore often a higher risk of layoff. The transition for immigrants, then is not so much a transition in their capacity to find work *per se* but rather a transition in their ability to retain jobs or to find more stable jobs.

CONCLUSIONS

Recent immigrants are at a greater risk of unemployment than are other Canadians. But, leaving aside potential differences between arrival cohorts, immigrants apparently adjust to the point where they share the same hazard of unemployment as non-immigrants. This appears to happen within 15.6 years on average. Female immigrants adjust even faster. The time taken for this adjustment, however, is sensitive to a number of other factors. Age, education, Canadian work experience, occupation, location, marital status and family size all exert an influence. Immigrants who have no advantages over non-immigrants with respect to these factors require almost 24 years to adjust. Those with disadvantages, it can be surmised, will take even longer and may always be at a higher risk of unemployment.

It does not appear that immigrants *per se* are at any particular disadvantage with respect to the time required to find a job. It would seem that the existence of a relatively larger pool of long term unemployed among the immigrant population can be almost completely explained by disadvantages with respect to age, human capital and, in the case of males, of visible minority status. The relatively heterogeneous nature of the immigrant population in terms of human capital is important in explaining why some have difficulty in finding work. Discrimination may also be an explanation. There is no evidence that time in the country, in and of itself, will assist immigrants to find employment more quickly.

While recent immigrants are able to find employment as quickly as non-immigrants, the jobs they find are not as stable as those enjoyed by other Canadians. Our findings with respect to the time required to find work are

consistent with those of Piché, Renaud and Gingras (1996) for a single cohort of new arrivals in Quebec. It seems, moreover, that the explanations they advance are buttressed by our findings about the relative hazards of unemployment. Newcomers, have a built in disadvantage in terms of seniority. They may also, suggest Piché *et. al.*, have disadvantages with respect to labour market information, connections, locally specific human or cultural capital requirements and social support networks or savings to rely on while they search for work. They may, as a consequence, quickly accept poorly paid, low status, high turnover work that is not commensurate with their skills. The labour market adjustment of immigrants has to do with their ability to find better more stable employment.

Appendix I

Table 1. IMMST15 Immigrant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	2993	10.7	10.9	10.9
	2 No	24384	87.5	89.1	100.0
	Total	27377	98.3	100.0	
Missing	7 Don't Know	474	1.7		
	8 Refusal	2	.0		
	9 Not Applicable	1	.0		
	Total	477	1.7		
Total		27854	100.0		

Table 2. IMMPRD15 Period of immigration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 1944 and before	276	1.0	1.0	1.0
	2 1945-1959	842	3.0	3.1	4.1
	3 1960-1969	509	1.8	1.9	6.0
	4 1970-1979	590	2.1	2.2	8.1
	5 1980-1989	524	1.9	1.9	10.0
	6 1990-1999	165	.6	.6	10.6
	99 Not Applicable	24387	87.6	89.4	100.0
	Total	27293	98.0	100.0	
Missing	97 Don't Know	561	2.0		
	Total	561	2.0		
Total		27854	100.0		

Appendix II

Table 1 Percent Within Period of Immigration

	Non-immigrant	Before 1960	1960-1969	1970-1979	1980 & after	All immigrants	Total
Sex: Male	49.3	47.2	46.4	48.0	51.0	48.2	49.1
Age: 70+	10.0	32.3	7.8	8.6	7.1	15.0	10.9
Marital Status refyr-1993							
Married	52.3	67.7	76.3	62.2	56.5	64.6	54.4
Common-law	7.0	2.3	1.1	2.6	3.1	2.4	6.2
Separated	2.5	2.3	2.7	2.7	4.1	3.0	2.6
Divorced	4.5	4.8	4.8	2.4	1.1	3.1	4.2
Widowed	5.1	17.7	5.3	4.6	7.4	9.4	5.9
Single (never married)	28.3	5.2	9.8	25.5	27.6	17.4	26.4
Separated common-law	.3		.1		.1	.1	.3
Level of education grp 1993							
Never attended	.4	1.1	1.1	1.2	.9	1.2	.5
1-4 years of elementary	1.3	5.6	2.8	2.8	2.2	3.4	1.7
5-8 years of elementary	10.3	27.2	9.2	6.7	7.9	13.4	10.8
9-10 years of elementary & secondary	13.5	9.3	7.1	4.4	9.4	7.8	12.5
11-13 years: no graduation	7.3	2.4	3.3	5.0	5.9	4.3	6.8
Graduated high school	14.7	12.9	20.2	15.1	21.9	17.4	15.2
Some non-university post secondary	8.8	4.1	5.8	7.4	7.2	6.1	8.3
Some university (no certificate)	4.9	2.0	4.4	7.6	4.9	4.6	4.9
Non-university post secondary certificate	25.7	24.7	30.5	28.8	22.5	26.0	25.8
University certificate below Bachelor's	1.7	1.4	1.8	2.1	1.5	1.6	1.7
Bachelor's degree	7.4	5.4	7.6	11.2	8.6	8.0	7.5
U. cert. Above Bachelor's	3.9	3.9	6.2	7.8	7.0	6.1	4.3
Visible minority status: Yes	1.7	3.3	18.5	47.3	71.4	35.9	7.8

Table 1 Percent Within Period of Immigration

	Non-immigrant	Before 1960	1960-1969	1970-1979	1980 & after	All immigrants	Total
Main occupation							
Professional /High-level management	14.0	16.8	18.1	15.9	8.5	14.7	14.1
Semi-prof., tech., mid. management	10.2	10.1	13.1	13.2	13.2	12.6	10.6
Supervisors, foremen/forewomen	16.5	22.7	13.9	12.5	10.2	14.8	16.3
Skilled workers/employees/farmers	18.8	18.9	17.5	20.7	11.6	17.0	18.5
Semi-skilled workers/employees	21.2	15.4	18.8	22.7	30.4	21.8	21.3
Unskilled wrkrs / employees / farm / labourers	19.3	16.1	18.6	14.9	26.1	19.1	19.3
Annual if status - 1994							
Employed all year	55.3	48.2	65.9	61.6	48.3	55.0	55.3
Unemployed all year	2.3	1.1	.9	3.7	4.8	2.9	2.4
Not in the labour force all year	20.2	39.7	18.9	14.9	21.6	23.7	20.7
Employed & unemployed part-year	8.2	6.1	6.0	7.2	9.7	7.6	8.1
Employed & not in labour force part year	6.5	1.9	3.4	9.1	6.6	5.4	6.3
Unemployed & not in labour force part-year	2.1	.5	1.3	.2	4.5	1.8	2.0
Employed, unemployed & not in labour force	5.5	2.5	3.5	3.4	4.5	3.6	5.2

Table 1 Percent Within Period of Immigration

	Non-immigrant	Before 1960	1960-1969	1970-1979	1980 & after	All immigrants	Total
Urban /rural household: Urban area	81.8	89.5	91.2	95.5	95.6	93.0	83.7
Industry group 1 - 1993							
Agricultural related	3.4	4.1	1.7	.9	3.6	2.6	3.3
Fishing and trapping	.4						.4
Logging and forestry	.8		.3	.1	.5	.3	.4
Mining quarrying & oil	1.3	.5	.8	.9	.9	.8	.4
Manufacturing	13.7	19.8	23.9	19.3	19.3	20.4	14.6
Construction	6.0	9.2	4.0	3.1	5.2	5.2	5.9
Transportation and storage	3.9	3.7	1.5	3.7	1.4	2.5	3.7
Communication and other utility	3.4	1.4	3.8	2.4	3.9	2.9	3.3
Wholesale trade	4.6	7.2	5.2	3.8	3.9	4.8	4.6
Retail trade	12.7	6.7	7.3	10.8	10.6	9.3	12.2
Finance and insurance	3.6	1.9	1.3	6.3	3.2	3.3	3.5
Real estate and insurance agent	2.2	5.7	.3		3.2	2.3	2.2
Business service	5.5	5.3	6.4	9.2	5.5	6.6	5.6
Government service	7.8	5.4	4.7	5.2	2.1	4.3	7.3
Educational service	7.4	12.1	13.0	7.6	5.1	8.8	7.6
Health and social service	9.6	7.0	15.1	9.8	10.0	10.4	9.7
Accommodation & food service	6.3	5.2	4.4	7.5	12.7	7.8	6.5
Other service	7.6	5.0	6.2	9.2	9.0	7.6	7.6

Table 2 Means by Period of Immigration

	Non-immigrant	Before 1960	1960-1969	1970-1979	1980 & after	All immigrants	Total
Person's age in refyr -1994	42.28	63.06	49.73	43.14	39.14	49.02	43.45
Family size - 1993	2.92	2.37	3.06	3.39	3.57	3.08	2.95
Total years of schooling - 1993	12.251	10.595	12.654	13.076	12.587	12.101	12.230
Estimated years of education in Canada	12.2508	5.2447	5.0552	4.3155	.8271	3.6717	10.7265
Estimated years of education abroad	.0000	6.2983	8.3545	9.2230	11.7878	8.9703	1.5609
Estimated years of work experience in Canada	13.5628	23.2673	15.7110	9.6675	2.6977	12.6029	13.4194
Estimated years of foreign work experience	.0000	2.3414	3.5055	4.3210	5.7865	4.0355	.6028
Unemployment rates in economic region of residence	10.0475	9.4251	9.5702	9.4590	9.7150	9.5415	9.9595
Weeks worked	71.9955	58.3833	72.7365	77.0013	63.9118	67.2096	71.2652
Mean weekly earnings	307.6954	210.3134	368.3497	329.3067	207.6769	264.2015	300.2014
Total earnings - 1994	17821.66	11997.26	23446.63	22650.67	14709.00	17325.39	17734.52
Investment income - 1994	859.93	2376.01	656.94	1046.72	726.89	1280.78	930.52
Taxable capital gains - 1994	1265.69	3520.68	1477.76	759.93	254.22	1530.97	1313.06
Government transfers - 1994	3151.45	6330.71	3029.07	2436.33	2890.22	3832.33	3266.41
Pension income - 1994	1137.21	2605.81	1317.00	197.96	1180.41	1384.34	1182.49
Other taxable money - 1994	529.80	501.78	317.82	500.92	302.67	400.31	508.33
Alimony - 1994	76.01	18.39	37.13	64.14	32.17	38.37	69.04
RRSP withdrawals - 1994	162.74	275.14	321.41	112.53	50.31	176.97	165.60
Total money income - 1994	23568.15	23829.96	28804.60	26907.82	19841.36	24262.75	23685.02

Appendix III

Table 1. WYLF_B01 Weekly labour force status - 1993 * IMMGRNT Subject immigrated to Canada Crosstabulation

		IMMGRNT Subject immigrated to Canada		Total	
		.00 No	1.00 Yes		
WYLF_B01 Weekly labour force status - 1993	10 Employed - General	Count	9094303	1633874	10728177
		% within WYLF_B01 Weekly labour force status - 1993	84.8%	15.2%	100.0%
		% within IMMGRNT Subject immigrated to Canada	65.4%	62.5%	64.9%
20 Unemployed - General	Count	939558	161697	1101255	
		% within WYLF_B01 Weekly labour force status - 1993	85.3%	14.7%	100.0%
		% within IMMGRNT Subject immigrated to Canada	6.8%	6.2%	6.7%
30 Not in labour force - General	Count	3873565	818169	4691734	
		% within WYLF_B01 Weekly labour force status - 1993	82.6%	17.4%	100.0%
		% within IMMGRNT Subject immigrated to Canada	27.9%	31.3%	28.4%
Total	Count	13907426	2613740	16521166	
		% within WYLF_B01 Weekly labour force status - 1993	84.2%	15.8%	100.0%
		% within IMMGRNT Subject immigrated to Canada	100.0%	100.0%	100.0%

Table 2. WYLF_B01 Weekly labour force status - 1993 * IMMPRD Period of immigration Crosstabulation

			IMMPRD Period of immigration					
			1.00 non-immigrant	2.00 before 1960	3.00 1960-1969	4.00 1970-1979	5.00 1980 & after	Total
WYLF_B01 Weekly labour force status - 1993	10 Employed - General	Count	9003927	378905	334002	428554	452579	10597967
		% within WYLF_B01 Weekly labour force status - 1993	85.0%	3.6%	3.2%	4.0%	4.3%	100.0%
		% within IMMPRD Period of immigration	65.4%	55.5%	68.7%	71.2%	57.7%	64.9%
	20 Unemployed - General	Count	928429	20062	16928	34258	87237	1086914
		% within WYLF_B01 Weekly labour force status - 1993	85.4%	1.8%	1.6%	3.2%	8.0%	100.0%
		% within IMMPRD Period of immigration	6.7%	2.9%	3.5%	5.7%	11.1%	6.7%
30 Not in labour force - General	Count	3829637	284227	134952	139287	244765	4632868	
	% within WYLF_B01 Weekly labour force status - 1993	82.7%	6.1%	2.9%	3.0%	5.3%	100.0%	
	% within IMMPRD Period of immigration	27.8%	41.6%	27.8%	23.1%	31.2%	28.4%	
Total	Count	13761993	683194	485882	602099	784581	16317749	
	% within WYLF_B01 Weekly labour force status - 1993	84.3%	4.2%	3.0%	3.7%	4.8%	100.0%	
	% within IMMPRD Period of immigration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 3. WYLF_C53 Weekly labour force status - 1994 * IMMGRNT Subject immigrated to Canada Crosstabulation

		IMMGRNT Subject immigrated to Canada		Total	
		.00 No	1.00 Yes		
WYLF_C53 Weekly labour force status - 1994	10 Employed - General	Count	10268600	1940621	12209221
		% within WYLF_C53 Weekly labour force status - 1994	84.1%	15.9%	100.0%
		% within IMMGRNT Subject immigrated to Canada	65.1%	63.2%	64.8%
20 Unemployed - General	Count	985211	198926	1184137	
		% within WYLF_C53 Weekly labour force status - 1994	83.2%	16.8%	100.0%
		% within IMMGRNT Subject immigrated to Canada	6.2%	6.5%	6.3%
30 Not in labour force - General	Count	4530839	930731	5461570	
		% within WYLF_C53 Weekly labour force status - 1994	83.0%	17.0%	100.0%
		% within IMMGRNT Subject immigrated to Canada	28.7%	30.3%	29.0%
Total	Count	15784650	3070278	18854928	
		% within WYLF_C53 Weekly labour force status - 1994	83.7%	16.3%	100.0%
		% within IMMGRNT Subject immigrated to Canada	100.0%	100.0%	100.0%

Table 4. WYLF_C53 Weekly labour force status - 1994 * IMMPRD Period of immigration Crosstabulation

			IMMPRD Period of immigration					
			1.00 non-immigrant	2.00 before 1960	3.00 1960-1969	4.00 1970-1979	5.00 1980 & after	Total
WYLF_C53	10 Employed	Count	10078358	376321	436468	512267	577262	11980676
Weekly labour force status - 1994	- General	% within WYLF_C53 Weekly labour force status - 1994	84.1%	3.1%	3.6%	4.3%	4.8%	100.0%
		% within IMMPRD Period of immigration	65.2%	52.1%	73.4%	69.7%	60.1%	64.9%
	20 Unemployed	Count	959526	32828	18952	47170	95334	1153810
	- General	% within WYLF_C53 Weekly labour force status - 1994	83.2%	2.8%	1.6%	4.1%	8.3%	100.0%
		% within IMMPRD Period of immigration	6.2%	4.5%	3.2%	6.4%	9.9%	6.2%
	30 Not in labour force	Count	4422950	312996	139608	175672	288631	5339857
	- General	% within WYLF_C53 Weekly labour force status - 1994	82.8%	5.9%	2.6%	3.3%	5.4%	100.0%
		% within IMMPRD Period of immigration	28.6%	43.3%	23.5%	23.9%	30.0%	28.9%
Total		Count	15460834	722145	595028	735109	961227	18474343
		% within WYLF_C53 Weekly labour force status - 1994	83.7%	3.9%	3.2%	4.0%	5.2%	100.0%
		% within IMMPRD Period of immigration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix IV

This subfile contains: 27854 observations

Life Table 1.

Survival Variable EMPLOYED Duration in weeks of 1st employed spell:

Intrvl Start Time	Number Entrng this Intrvl	Number Wdrawn During Intrvl	Number Exposed to Risk	Number of Termnl Events	Propn Termi-nating	Propn Sur-viving	Cumul Propn Surv at End	Proba-bility Densty	Hazard Rate
.022672199		.022672199		.0	.0000	1.0000	1.0000	.0000	.0000
1.022672199	4691743	20326328	1101260	.0542	.9458	.9458	.0542	.0557	.0557
2.016879196	15425.0	16871484	18297.0	.0011	.9989	.9448	.0010	.0011	.0011
3.016845474	6593.0	16842178	16590.0	.0010	.9990	.9439	.0009	.0010	.0010
4.016822291	13683.0	16815450	12545.0	.0007	.9993	.9432	.0007	.0007	.0007
5.016796063	5663.0	16793232	3138.0	.0002	.9998	.9430	.0002	.0002	.0002
6.016787262	13002.0	16780761	21826.0	.0013	.9987	.9418	.0012	.0013	.0013
7.016752434	27851.0	16738509	27476.0	.0016	.9984	.9402	.0015	.0016	.0016
8.016697107	2235.0	16695990	4336.0	.0003	.9997	.9400	.0002	.0003	.0003
9.016690536	10736.0	16685168	11311.0	.0007	.9993	.9393	.0006	.0007	.0007
10.016668489	4382.0	16666298	25865.0	.0016	.9984	.9379	.0015	.0016	.0016
11.016638242	33233.0	16621626	31989.0	.0019	.9981	.9361	.0018	.0019	.0019
12.016573020	7011.0	16569515	8488.0	.0005	.9995	.9356	.0005	.0005	.0005
13.016557521	9480.0	16552781	17266.0	.0010	.9990	.9346	.0010	.0010	.0010
14.016530775	12131.0	16524710	15668.0	.0009	.9991	.9337	.0009	.0009	.0009
15.016502976	42131.0	16481911	50295.0	.0031	.9969	.9309	.0028	.0031	.0031
16.016410550	6292.0	16407404	13941.0	.0008	.9992	.9301	.0008	.0009	.0009
17.016390317	15953.0	16382341	7735.0	.0005	.9995	.9296	.0004	.0005	.0005
18.016366629	4828.0	16364215	17620.0	.0011	.9989	.9286	.0010	.0011	.0011
19.016344181	25353.0	16331505	34501.0	.0021	.9979	.9267	.0020	.0021	.0021
20.016284327	2149.0	16283253	7445.0	.0005	.9995	.9263	.0004	.0005	.0005
21.016274733	13017.0	16268225	6496.0	.0004	.9996	.9259	.0004	.0004	.0004
22.016255220	1057.0	16254692	2030.0	.0001	.9999	.9258	.0001	.0001	.0001
23.016252133	5538.0	16249364	10155.0	.0006	.9994	.9252	.0006	.0006	.0006
24.016236440	31325.0	16220778	23353.0	.0014	.9986	.9239	.0013	.0014	.0014
25.016181762	11808.0	16175858	7857.0	.0005	.9995	.9234	.0004	.0005	.0005
26.016162097	9205.0	16157495	10715.0	.0007	.9993	.9228	.0006	.0007	.0007
27.016142177	11189.0	16136583	36093.0	.0022	.9978	.9207	.0021	.0022	.0022
28.016094895	44722.0	16072534	49118.0	.0031	.9969	.9179	.0028	.0031	.0031
29.016001055	7189.0	15997461	8209.0	.0005	.9995	.9175	.0005	.0005	.0005
30.015985657	10143.0	15980586	11956.0	.0007	.9993	.9168	.0007	.0007	.0007
31.015963558	2250.0	15962433	1388.0	.0001	.9999	.9167	.0001	.0001	.0001
32.015959920	19953.0	15949944	19964.0	.0013	.9987	.9155	.0011	.0013	.0013
33.015920003	19396.0	15910305	15077.0	.0009	.9991	.9147	.0009	.0009	.0009
34.015885530	13176.0	15878942	7212.0	.0005	.9995	.9143	.0004	.0005	.0005
35.015865142	21831.0	15854227	15855.0	.0010	.9990	.9133	.0009	.0010	.0010
36.015827456	11586.0	15821663	14649.0	.0009	.9991	.9125	.0008	.0009	.0009
37.015801221	51151.0	15775646	18827.0	.0012	.9988	.9114	.0011	.0012	.0012
38.015731243	7920.0	15727283	4617.0	.0003	.9997	.9111	.0003	.0003	.0003
39.015718706	10065.0	15713674	7950.0	.0005	.9995	.9107	.0005	.0005	.0005
40.015700691	6162.0	15697610	3245.0	.0002	.9998	.9105	.0002	.0002	.0002
41.015691284	20816.0	15680876	26552.0	.0017	.9983	.9090	.0015	.0017	.0017
42.015643916	5588.0	15641122	3067.0	.0002	.9998	.9088	.0002	.0002	.0002
43.015635261	9381.0	15630571	6634.0	.0004	.9996	.9084	.0004	.0004	.0004

Intrvl Start Time	Number Entrng this Intrvl	Number Wdrawn During Intrvl	Number Exposd to Risk	Number of Termnl Events	Propn Termi- nating	Propn Sur- viving	Cumul Propn Surv at End	Proba- bility Densty	Hazard Rate
44.015619246	6427.015616033	2036.0	.0001	.9999	.9083	.0001	.0001		
45.015610783	12749.015604409	16362.0	.0010	.9990	.9073	.0010	.0010		
46.015581672	20809.015571268	19053.0	.0012	.9988	.9062	.0011	.0012		
47.015541810	5335.015539143	6947.0	.0004	.9996	.9058	.0004	.0004		
48.015529528	12040.015523508	13065.0	.0008	.9992	.9050	.0008	.0008		
49.015504423	2697.015503075	2229.0	.0001	.9999	.9049	.0001	.0001		
50.015499497	27677.015485659	20798.0	.0013	.9987	.9037	.0012	.0013		
51.015451022	4399.015448823	11279.0	.0007	.9993	.9030	.0007	.0007		
52.015435344	25106.015422791	16104.0	.0010	.9990	.9021	.0009	.0010		
53.015394134	27733.015380268	2628.0	.0002	.9998	.9019	.0002	.0002		
54.015363773	1430549146484993	46114.0	.0236	.9764	.8806	.0213	.0239		
55.013587110	1521.013586350	10008.0	.0007	.9993	.8800	.0006	.0007		
56.013575581	2358.013574402	1580.0	.0001	.9999	.8799	.0001	.0001		
57.013571643	1595.013570846	10048.0	.0007	.9993	.8792	.0007	.0007		
58.013560000	1415.013559293	6095.0	.0004	.9996	.8788	.0004	.0004		
59.013552490	3625.013550678	4877.0	.0004	.9996	.8785	.0003	.0004		
60.013543988	5112.013541432	25254.0	.0019	.9981	.8769	.0016	.0019		
61.013513622	3902.013511671	4471.0	.0003	.9997	.8766	.0003	.0003		
62.013505249	6439.013502030	11070.0	.0008	.9992	.8759	.0007	.0008		
63.013487740	4547.013485467	1475.0	.0001	.9999	.8758	.0001	.0001		
64.013481718	17087.013473175	12248.0	.0009	.9991	.8750	.0008	.0009		
65.013452383	1444.013451661	2410.0	.0002	.9998	.8748	.0002	.0002		
66.013448529	4094.013446482	4222.0	.0003	.9997	.8745	.0003	.0003		
67.013440213	602.013439912	9956.0	.0007	.9993	.8739	.0006	.0007		
68.013429655	38232.013410539	39848.0	.0030	.9970	.8713	.0026	.0030		
69.013351575	7891.013347630	12000.0	.0009	.9991	.8705	.0008	.0009		
70.013331684	7316.013328026	7232.0	.0005	.9995	.8700	.0005	.0005		
71.013317136	2951.013315661	3007.0	.0002	.9998	.8698	.0002	.0002		
72.013311178	17973.013302192	37282.0	.0028	.9972	.8674	.0024	.0028		
73.013255923	13591.013249128	8819.0	.0007	.9993	.8668	.0006	.0007		
74.013233513	1176.013232925	1723.0	.0001	.9999	.8667	.0001	.0001		
75.013230614	8504.013226362	18850.0	.0014	.9986	.8655	.0012	.0014		
76.013203260	2284.013202118	7752.0	.0006	.9994	.8650	.0005	.0006		
77.013193224	21658.013182395	29586.0	.0022	.9978	.8630	.0019	.0022		
78.013141980	3300.013140330	3013.0	.0002	.9998	.8628	.0002	.0002		
79.013135667	5983.013132676	8142.0	.0006	.9994	.8623	.0005	.0006		
80.013121542	13556.013114764	16366.0	.0012	.9988	.8612	.0011	.0012		
81.013091620	42541.013070350	52367.0	.0040	.9960	.8578	.0035	.0040		
82.012996712	4246.012994589	5880.0	.0005	.9995	.8574	.0004	.0005		
83.012986586	4211.012984481	10258.0	.0008	.9992	.8567	.0007	.0008		
84.012972117	.012972117	1102.0	.0001	.9999	.8566	.0001	.0001		
85.012971015	13082.012964474	11314.0	.0009	.9991	.8559	.0007	.0009		
86.012946619	18258.012937490	11918.0	.0009	.9991	.8551	.0008	.0009		
87.012916443	5023.012913932	1940.0	.0002	.9998	.8550	.0001	.0002		
88.012909480	12751.012903105	2732.0	.0002	.9998	.8548	.0002	.0002		
89.012893997	1923.012893036	1771.0	.0001	.9999	.8547	.0001	.0001		
90.012890303	61654.012859476	26324.0	.0020	.9980	.8529	.0017	.0020		

Intrvl Start Time	Number Entrng this Intrvl	Number Wdrawn During Intrvl	Number Exposd to Risk	Number of Termnl Events	Propn Termi- nating	Propn Sur- viving	Cumul Propn Surv at End	Proba- bility Densty	Hazard Rate
91.012802325	12348.012796151	3723.0	.0003	.9997	.8527	.0002	.0003		
92.012786254	5276.012783616	5597.0	.0004	.9996	.8523	.0004	.0004		
93.012775381	2059.012774352	140.0	.0000	1.0000	.8523	.0000	.0000		
94.012773182	16465.012764950	15428.0	.0012	.9988	.8513	.0010	.0012		
95.012741289	2397.012740091	2905.0	.0002	.9998	.8511	.0002	.0002		
96.012735987	5382.012733296	10518.0	.0008	.9992	.8504	.0007	.0008		
97.012720087	4664.012717755	2021.0	.0002	.9998	.8502	.0001	.0002		
98.012713402	2733.012712036	5556.0	.0004	.9996	.8499	.0004	.0004		
99.012705113	18513.012695857	32470.0	.0026	.9974	.8477	.0022	.0026		
100.012654130	4347.012651957	5561.0	.0004	.9996	.8473	.0004	.0004		
101.012644222	8483.012639981	9894.0	.0008	.9992	.8466	.0007	.0008		
102.012625845	4518.012623586	6317.0	.0005	.9995	.8462	.0004	.0005		
103.012615010	8070.012610975	11156.0	.0009	.9991	.8455	.0007	.0009		
104.012595784	6590.012592489	5682.0	.0005	.9995	.8451	.0004	.0005		
105.012583512	12726.012577149	7716.0	.0006	.9994	.8446	.0005	.0006		
106.012563070	15637.012555252	2833.0	.0002	.9998	.8444	.0002	.0002		
107.0+1.3E+0712544600	6272300	.0	.0000	1.0000	.8444	**	**		

** These calculations for the last interval are meaningless.

The median survival time for these data is 107.00+

This subfile contains: 27854 observations

Life Table 2.

Survival Variable JOBLESS Duration in weeks of 1st jobless spell:

Intrvl Start Time	Number Entrng this Intrvl	Number Wdrawn During Intrvl	Number Exposd to Risk	Number of Termnl Events	Propn Termi- nating	Propn Sur- viving	Cumul Propn Surv at End	Proba- bility Densty	Hazard Rate
.0	7082522	.0	7082522	.0	.0000	1.0000	1.0000	.0000	.0000
1.0	7082522	17166.0	7073939	51076.0	.0072	.9928	.9928	.0072	.0072
2.0	7014280	17573.0	7005494	133604.0	.0191	.9809	.9738	.0189	.0193
3.0	6863103	10881.0	6857663	57166.0	.0083	.9917	.9657	.0081	.0084
4.0	6795056	19542.0	6785285	177073.0	.0261	.9739	.9405	.0252	.0264
5.0	6598441	4139.0	6596372	42852.0	.0065	.9935	.9344	.0061	.0065
6.0	6551450	8271.0	6547315	43540.0	.0067	.9933	.9282	.0062	.0067
7.0	6499639	22728.0	6488275	40358.0	.0062	.9938	.9224	.0058	.0062
8.0	6436553	5824.0	6433641	102386.0	.0159	.9841	.9077	.0147	.0160
9.0	6328343	42052.0	6307317	95452.0	.0151	.9849	.8940	.0137	.0152
10.0	6190839	4024.0	6188827	62837.0	.0102	.9898	.8849	.0091	.0102
11.0	6123978	11924.0	6118016	38787.0	.0063	.9937	.8793	.0056	.0064
12.0	6073267	3937.0	6071299	30636.0	.0050	.9950	.8749	.0044	.0051
13.0	6038694	24863.0	6026263	146315.0	.0243	.9757	.8536	.0212	.0246
14.0	5867516	2713.0	5866160	18270.0	.0031	.9969	.8510	.0027	.0031
15.0	5846533	7612.0	5842727	85565.0	.0146	.9854	.8385	.0125	.0148
16.0	5753356	5515.0	5750599	42060.0	.0073	.9927	.8324	.0061	.0073
17.0	5705781	46778.0	5682392	218283.0	.0384	.9616	.8004	.0320	.0392
18.0	5440720	35315.0	5423063	66483.0	.0123	.9877	.7906	.0098	.0123
19.0	5338922	3471.0	5337187	92110.0	.0173	.9827	.7770	.0136	.0174
20.0	5243341	7888.0	5239397	64593.0	.0123	.9877	.7674	.0096	.0124
21.0	5170860	2177.0	5169772	122523.0	.0237	.9763	.7492	.0182	.0240
22.0	5046160	25115.0	5033603	74991.0	.0149	.9851	.7380	.0112	.0150
23.0	4946054	.0	4946054	61621.0	.0125	.9875	.7288	.0092	.0125
24.0	4884433	7471.0	4880698	40040.0	.0082	.9918	.7229	.0060	.0082
25.0	4836922	3648.0	4835098	33252.0	.0069	.9931	.7179	.0050	.0069
26.0	4800022	57413.0	4771316	157700.0	.0331	.9669	.6942	.0237	.0336
27.0	4584909	13351.0	4578234	27965.0	.0061	.9939	.6899	.0042	.0061
28.0	4543593	5520.0	4540833	34619.0	.0076	.9924	.6847	.0053	.0077
29.0	4503454	5864.0	4500522	16329.0	.0036	.9964	.6822	.0025	.0036
30.0	4481261	20296.0	4471113	58130.0	.0130	.9870	.6733	.0089	.0131
31.0	4402835	10778.0	4397446	27255.0	.0062	.9938	.6691	.0042	.0062
32.0	4364802	239.0	4364683	26086.0	.0060	.9940	.6651	.0040	.0060
33.0	4338477	5315.0	4335820	19107.0	.0044	.9956	.6622	.0029	.0044
34.0	4314055	5181.0	4311465	18896.0	.0044	.9956	.6593	.0029	.0044
35.0	4289978	37433.0	4271262	97236.0	.0228	.9772	.6443	.0150	.0230
36.0	4155309	1795.0	4154412	21072.0	.0051	.9949	.6410	.0033	.0051
37.0	4132442	8042.0	4128421	32587.0	.0079	.9921	.6360	.0051	.0079
38.0	4091813	1800.0	4090913	17659.0	.0043	.9957	.6332	.0027	.0043
39.0	4072354	35657.0	4054526	59918.0	.0148	.9852	.6239	.0094	.0149
40.0	3976779	722.0	3976418	16482.0	.0041	.9959	.6213	.0026	.0042
41.0	3959575	.0	3959575	28467.0	.0072	.9928	.6168	.0045	.0072
42.0	3931108	4259.0	3928979	10564.0	.0027	.9973	.6151	.0017	.0027
43.0	3916285	2235.0	3915168	23531.0	.0060	.9940	.6115	.0037	.0060

Intrvl Start Time	Number Entrng this Intrvl	Number Wdrawn During Intrvl	Number Exposd to Risk	Number of Termnl Events	Propn Termi- nating	Propn Sur- viving	Cumul Propn Surv at End	Proba- bility Densty	Hazard Rate
44.0	3890519	7240.0	3886899	32754.0	.0084	.9916	.6063	.0052	.0085
45.0	3850525	4207.0	3848422	18705.0	.0049	.9951	.6034	.0029	.0049
46.0	3827613	11239.0	3821994	13679.0	.0036	.9964	.6012	.0022	.0036
47.0	3802695	1407.0	3801992	16863.0	.0044	.9956	.5985	.0027	.0044
48.0	3784425	15659.0	3776596	35887.0	.0095	.9905	.5928	.0057	.0095
49.0	3732879	2585.0	3731587	5615.0	.0015	.9985	.5919	.0009	.0015
50.0	3724679	2993.0	3723183	14524.0	.0039	.9961	.5896	.0023	.0039
51.0	3707162	860.0	3706732	7002.0	.0019	.9981	.5885	.0011	.0019
52.0	3699300	6523.0	3696039	429557.0	.1162	.8838	.5201	.0684	.1234
53.0	3263220	2981.0	3261730	3730.0	.0011	.9989	.5195	.0006	.0011
54.0	3256509	6526.0	3253246	15368.0	.0047	.9953	.5171	.0025	.0047
55.0	3234615	3187.0	3233022	2764.0	.0009	.9991	.5166	.0004	.0009
56.0	3228664	5420.0	3225954	8492.0	.0026	.9974	.5153	.0014	.0026
57.0	3214752	9325.0	3210090	9814.0	.0031	.9969	.5137	.0016	.0031
58.0	3195613	1793.0	3194717	4939.0	.0015	.9985	.5129	.0008	.0015
59.0	3188881	6407.0	3185678	4372.0	.0014	.9986	.5122	.0007	.0014
60.0	3178102	145.0	3178030	20386.0	.0064	.9936	.5089	.0033	.0064
61.0	3157571	13085.0	3151029	12442.0	.0039	.9961	.5069	.0020	.0040
62.0	3132044	6035.0	3129027	8285.0	.0026	.9974	.5056	.0013	.0027
63.0	3117724	1424.0	3117012	9842.0	.0032	.9968	.5040	.0016	.0032
64.0	3106458	3481.0	3104718	1494.0	.0005	.9995	.5037	.0002	.0005
65.0	3101483	10275.0	3096346	25457.0	.0082	.9918	.4996	.0041	.0083
66.0	3065751	7506.0	3061998	1964.0	.0006	.9994	.4993	.0003	.0006
67.0	3056281	5688.0	3053437	6594.0	.0022	.9978	.4982	.0011	.0022
68.0	3043999	4053.0	3041973	7440.0	.0024	.9976	.4970	.0012	.0024
69.0	3032506	4241.0	3030386	21779.0	.0072	.9928	.4934	.0036	.0072
70.0	3006486	10096.0	3001438	13180.0	.0044	.9956	.4912	.0022	.0044
71.0	2983210	4758.0	2980831	9234.0	.0031	.9969	.4897	.0015	.0031
72.0	2969218	5856.0	2966290	5179.0	.0017	.9983	.4889	.0009	.0017
73.0	2958183	1589.0	2957389	3098.0	.0010	.9990	.4883	.0005	.0010
74.0	2953496	24835.0	2941079	40585.0	.0138	.9862	.4816	.0067	.0139
75.0	2888076	966.0	2887593	2943.0	.0010	.9990	.4811	.0005	.0010
76.0	2884167	2997.0	2882669	15610.0	.0054	.9946	.4785	.0026	.0054
77.0	2865560	2272.0	2864424	2913.0	.0010	.9990	.4780	.0005	.0010
78.0	2860375	21663.0	2849544	23299.0	.0082	.9918	.4741	.0039	.0082
79.0	2815413	2871.0	2813978	5637.0	.0020	.9980	.4732	.0009	.0020
80.0	2806905	3051.0	2805380	13958.0	.0050	.9950	.4708	.0024	.0050
81.0	2789896	8742.0	2785525	2033.0	.0007	.9993	.4705	.0003	.0007
82.0	2779121	6206.0	2776018	22589.0	.0081	.9919	.4666	.0038	.0082
83.0	2750326	13512.0	2743570	1708.0	.0006	.9994	.4663	.0003	.0006
84.0	2735106	231.0	2734991	9099.0	.0033	.9967	.4648	.0016	.0033
85.0	2725776	3672.0	2723940	6696.0	.0025	.9975	.4636	.0011	.0025
86.0	2715408	1544.0	2714636	4060.0	.0015	.9985	.4630	.0007	.0015
87.0	2709804	8158.0	2705725	27441.0	.0101	.9899	.4583	.0047	.0102
88.0	2674205	.0	2674205	7220.0	.0027	.9973	.4570	.0012	.0027
89.0	2666985	6002.0	2663984	6017.0	.0023	.9977	.4560	.0010	.0023
90.0	2654966	.0	2654966	2353.0	.0009	.9991	.4556	.0004	.0009

Intrvl Start Time	Number Entrng this Intrvl	Number Wdrawn During Intrvl	Number Exposd to Risk	Number of Termnl Events	Propn Termi- nating	Propn Sur- viving	Cumul Propn Surv at End	Proba- bility Densty	Hazard Rate
91.0	2652613	6769.0	2649229	13387.0	.0051	.9949	.4533	.0023	.0051
92.0	2632457	14837.0	2625039	4182.0	.0016	.9984	.4526	.0007	.0016
93.0	2613438	384.0	2613246	4275.0	.0016	.9984	.4518	.0007	.0016
94.0	2608779	2755.0	2607402	146.0	.0001	.9999	.4518	.0000	.0001
95.0	2605878	5137.0	2603310	6484.0	.0025	.9975	.4507	.0011	.0025
96.0	2594257	9953.0	2589281	1832.0	.0007	.9993	.4504	.0003	.0007
97.0	2582472	264.0	2582340	3526.0	.0014	.9986	.4497	.0006	.0014
98.0	2578682	2446.0	2577459	3436.0	.0013	.9987	.4491	.0006	.0013
99.0	2572800	1584.0	2572008	1645.0	.0006	.9994	.4489	.0003	.0006
100.0	2569571	14045.0	2562549	6060.0	.0024	.9976	.4478	.0011	.0024
101.0	2549466	209.0	2549362	2978.0	.0012	.9988	.4473	.0005	.0012
102.0	2546279	4207.0	2544176	5595.0	.0022	.9978	.4463	.0010	.0022
103.0	2536477	960.0	2535997	878.0	.0003	.9997	.4461	.0002	.0003
104.0	2534639	2534639	1267320	.0	.0000	1.0000	.4461	.0000	.0000

The median survival time for these data is 65.90

Appendix V

APPENDIX V.

Model 1. Dependent Variable: Hazard of Unemployment

Independent Measure	<i>B</i>	DE-EFF	Wald	Significance
Overall Model			27.61	0
IMMGRNT	0.4502	3.08	12.51	0.0004
YRSHERE	-0.0288	3.35	27.11	0

Model 2. Dependent Variable: Hazard of Unemployment

Independent Measure	<i>B</i>	DE-EFF	Wald	Significance
Overall Model			236.83	0
IMMGRNT	0.5319	4.18	4.82	0.0282
AGE26C	-0.0115	2.6	11.07	0.0009
YRSCH18B	-0.0429	1.77	28.78	0
FMSZ27B	-0.1016	1.97	20.57	0
UEINREG	0.0541	1.92	34.63	0
MALE	0.3569	1.71	36.98	0
MARRIED	0.2251	2.14	9.11	0.0025
PROF	-1.1234	1.99	42.01	0
VISMIN	-0.0933	2.6	0.34	0.5595
YRXFT11B	-0.0104	2.19	8.25	0.0041
YRSHERE	-0.0224	3.22	6.87	0.0088

Model 3. Dependent Variable: Hazard of Unemployment
Decomposing Education & Experience

Independent Measure	<i>B</i>	DE-EFF	Wald	Significance
Overall Model			252.11	0
IMMGRNT	0.5805	3.51	3.5	0.0614
AGE26C	-0.0113	2.51	10.96	0.0009
FMSZ27B	-0.103	1.99	20.91	0
UEINREG	0.0541	1.92	34.67	0
MALE	0.3608	1.71	37.53	0
MARRIED	0.2307	2.11	9.67	0.0019
PROF	-1.1185	2.02	40.93	0
VISMIN	-0.0747	2.55	0.23	0.6347
YRSHERE	-0.0211	3.02	5.79	0.0161
CANED	-0.0407	1.82	26.35	0
FORNED	-0.0581	2.3	11.64	0.0006
CANEXP	-0.0118	2.15	10.28	0.0013
FORNEXP	0.0095	2.56	0.82	0.3645

Model 4. Dependent Variable: Hazard of Employment for Jobless

Independent Measure	B	DE-EFF	Wald	Significance
Overall Model			313.41	0
IMMGRNT	0.0186	1.81	0.02	0.8968
AGE26C	-0.0572	1.91	272.46	0
YRSCH18B	0.0684	1.5	93.5	0
FMSZ27B	-0.0526	3.07	5.52	0.0188
UEINREG	-0.018	1.91	4.31	0.038
MALE	0.4159	2.26	59.42	0
MARRIED	0.1501	2.4	5.67	0.0173
PROF	0.1341	1.25	0.7	0.4041
VISMIN	-0.1927	6.71	0.7	0.4014
YRXFT11B	0.0208	2.54	22.62	0
YRSHERE	-0.0012	1.75	0.06	0.8138

Model 5. Dependent Variable: Hazard of Employment for Jobless
Including MALE*VISMIN Interaction

Independent Measure	B	DE-EFF	Wald	Significance
Overall Model			1251.15	0
IMMGRNT	-0.023	2.1	0.02	0.8818
AGE26C	-0.0568	1.96	262.38	0
YRSCH18B	0.0654	1.47	97.38	0
FMSZ27B	-0.054	2.93	6.13	0.0133
UEINREG	-0.0179	1.78	4.6	0.032
MALE	0.4603	1.63		
MARRIED	0.1575	2.32	6.39	0.0115
PROF	0.1372	1.24	0.73	0.392
VISMIN	0.115	5.18		
YRXFT11B	0.02	2.6	20.43	0
YRSHERE	0.0001	1.85	0	0.9795
MALE*VISMIN	-0.5342	3.4	5.21	0.0225

Model 6a. Dependent Variable: Hazard of Employment for
Jobless
Males Only

Independent Measure	<i>B</i>	DE-EFF	Wald	Significance
Overall Model			588.97	0
IMMGRNT	0.3462	1.68	3.34	0.0677
AGE26C	-0.0641	1.5	116.26	0
YRSCH18B	0.06	2.82	21.01	0
FMSZ27B	-0.0302	2.45	1.2	0.2726
UEINREG	-0.0355	1.83	9.05	0.0026
MARRIED	0.5407	1.65	44.44	0
PROF	0.0331	1.67	0.01	0.9135
VISMIN	-0.6397	3.6	8.54	0.0035
YRXFT11B	0.0178	1.64	7.31	0.0069
YRSHERE	-0.0068	1.59	1.01	0.3149

Model 6b. Dependent Variable: Hazard of Employment for
Jobless
Females Only

Independent Measure	<i>B</i>	DE-EFF	Wald	Significance
Overall Model			626.91	0
IMMGRNT	-0.3	2.88	1.29	0.2567
AGE26C	-0.0531	2.12	157.27	0
YRSCH18B	0.0713	1.71	45.93	0
FMSZ27B	-0.0802	2.02	8.9	0.0029
UEINREG	0.0015	1.71	0.02	0.8988
MARRIED	-0.095	2.8	1.14	0.286
PROF	0.2761	1.9	1.14	0.2862
VISMIN	0.3022	5.74	0.97	0.3249
YRXFT11B	0.0235	2.16	18.96	0
YRSHERE	0.0034	2.96	0.12	0.7332

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