

**ECONOMIC PERFORMANCE OF UKRAINIAN IMMIGRANTS IN
CANADA: SHOULD UKRAINIANS MOVE TO THE U.S.?**

by

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**Title of Project "Economic Performance Of Ukrainian Immigrants To
Canada: Should Ukrainians Move To The US?"**

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ABSTRACT

This paper investigates the economic performance of Ukrainian immigrants in Canada, then compares this with the economic performance of their United States counterparts, and finally asks whether Ukrainians would be better off moving to the United States from Canada or relocating in the opposite direction. Our findings suggest that Ukrainian immigrants to the U.S. are overachievers relative to all groups, which sheds light on Borjas thesis that self-selection and not immigration policy sorts immigrants between Canada and the U.S.

DEDICATION

To my daughter Katherine

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CHAPTER ONE: INTRODUCTION

The overwhelming majority of academic studies of Ukrainians in North America have been either devoted to historical, linguistic or cultural studies. With the exception of a recent sociological study of Ukrainian immigrants in the Toronto area (Isajiw *et al.* 2002), the literature focusing on economic performance of ethnic Ukrainians in Canada remains non-existent.

The motivation for this paper is threefold: to extend the literature exploring possible ethnic and foreign birth effects on labour market performance, and to add to the limited economic studies of Ukrainian immigrants in Canada. Finally, we will shed some light on the Borjas' thesis that self-selection overrides immigrant selection policy.

The dominating theme of numerous research papers focusing on the earnings of immigrants in Canada is that immigrants are subject to some economic penalties upon entry, as reflected initially in the lower incomes earned relative to the Canadian born. However, there are a growing number of studies which suggest that models commonly used to explain catching up, i.e. the progress of "underachievers," can be utilized to explain "overachievers." We define "overachievers" as immigrants who earn a positive premium upon arrival and subsequently outperform their Canadian-born or immigrant cohorts over their entire stay in Canada.

In this context we investigate whether or not Ukrainian immigrants are overachievers in Canada, and then we ask if this result holds for Ukrainians in the United

States. In other words, are Ukrainians “overachievers” in the United States, and can the human capital model explain differential earnings performances across the two countries? Finally, given this differential performance in the two countries, we speculate if self-selection or immigration policy has led to the distribution of Ukrainian immigrants between Canada and the United States.

CHAPTER TWO: LITERATURE AND METHODOLOGY REVIEW

The intent of this paper is to concentrate on two related questions, namely, the influence of foreign-birth status and ethnicity on the earnings performance of Ukrainians in Canada, and to explain the performance of the Ukrainians in the U.S. and Canada given that Canada has a points system and U.S. does not. The literature review in this paper, therefore, will be organized around these two analytical points.

Ethnic earnings studies in Canada have been traditionally limited in scope. For example, research by Swidinsky (1997), and Stelcner and Kyriazis (1995) focus primarily on analyzing wage earnings differentials between “whites,” visible minorities and aboriginal Canadians. In addition, Pendakur and Pendakur (1998) show that visible minority workers in Canada, including both Canadian born and foreign born, generally earn less than their “white” counterparts after controlling for several important income-enhancing characteristics such as occupation, education and official language knowledge. Furthermore, based on their disaggregated ethnic results the authors conclude:

Although we find large differentials between whites and visible minorities, our research also points to substantial heterogeneity within these groups. Lumping all the white ethnic groups together or combining all the visible-minority ethnic groups together does not do justice to the complexity of ethnicity-based earnings differentials. (544)

As an alternative measure of economic success across ethnic groups, DeSilva (1997) uses the differences in the probability of unemployment insurance participation. He found that several ethnic groups have a relatively high propensity to claim

unemployment insurance: the Portuguese, Hungarians, Other Europeans, South- and Other Asians, and Blacks. DeSilva's estimation results suggest that the most important factors reducing the probability of participation in an unemployment insurance program are having university education, being proficient in English and being bilingual.

Only a handful of case studies focus on the economic performance of immigrants by ethnic status including Chiswick (1983, 1993) on Jews in the U.S., DeVoretz and Dean (2000) on Jews in Canada; Suzuki (2002) on Japanese in the U.S. and Blackaby *et al.* (1997) on Indians, Black Caribbeans and Pakistanis in the U.K. This limited focus on ethnicity is possibly owing to the increasing evidence that racial or visible minority status, rather than ethnicity, is generally a more important predictor of income level (Boyd 1992; Li 1992; Pendakur and Pendakur 1998).

The literature surrounding discrimination by minority status as a determinant of earnings differences, however offers a methodology to explore the foreign-birth and ethnic effects on earnings. In particular, discrimination studies commonly use the Blinder-Oaxaca (Blinder 1973; Oaxaca 1973) methodology to decompose the difference in observed earnings of two groups into two components: a portion that is explained by endowments (e.g. due to group differences in measured human capital characteristics), and an unexplained portion that is attributable to differences in returns to the same characteristics. We will cautiously employ the Blinder-Oaxaca method to explain earnings differences between Ukrainians resident in Canada and the United States.¹

¹ The latter is conventionally interpreted as earnings discrimination. However, the differences in data sources, sample definitions, the choice of the dependent variable, human capital characteristics used as earnings predictors, and statistical methodology result in much variation in the estimates of ethnic earnings discrimination. It is also important to recognize that the method used to estimate discrimination has its limitations (Shapiro and Stelcner 1987) such as failure to account for pre-market discrimination, and sensitivity to the omission of unobserved productivity enhancing characteristics.

The central analytical tool that addresses our second issue – overachievement – or immigrant earnings relative to other cohorts' earnings experience, is owing to Barry Chiswick (1978). Chiswick suggests that despite an initial earnings disadvantage upon entry, immigrants experience more rapid wage growth than native-born workers. Chiswick argues that this immigrant economic success could be explained by positive self-selection from source countries: once immigrants acquire the host country specific human capital, they outperform native-born workers.

In order to capture the entry effect and the assimilation process for Canadian immigrants several authors have employed a traditional earnings function augmented with variables such as years since immigration and its squared term.

In particular, Chiswick and Miller (1988), DeSilva (1992), and Bloom, Grenier and Gunderson (1995) report that the earnings of many immigrant groups lag behind the earnings level of their Canadian born counterparts even after many years of staying in Canada.

But this earnings deficit upon entry does not always appear, and Gozalie (2002) investigates the possibility of an immigrant group earning a positive premium upon arrival and subsequently outperforming their Canadian-born counterparts. In his study of immigrants' assimilation in Canada's labour market Gozalie analyzes the economic performance of the overachiever immigrant group, which includes immigrants originating from the U.S., U.K., Germany and Italy. His findings contrast traditional assimilation as a "catch-up" view. Specifically, the results show that, contrary to the traditional hypothesis, immigrants from the U.S., U.K., Germany and Italy experience an earnings premium upon entry.

As the stylized facts suggest, Ukrainian immigrants may belong to this overachieving group. Thus, this paper's particular challenge will be to adapt this assimilation methodology to the Ukrainian case.

Finally, the literature suggests that in many cases it is impossible to separate the effect of ethnicity from the cohort effect because immigrants from the same ethnic origin tend to arrive at the country of destination in "waves." As a result, there is little variation in the time of arrival among immigrants of the same ethnicity coming from the same source country (Haberfeld 1993).² The Ukrainian immigration experience to Canada will allow us to overcome this problem. In sum, the investigation of ethnic effects on the economic success of immigrants places demanding requirements on data quality. In addition to ethnic identity and commonly used human capital characteristics, such as age/experience and years of schooling, we also need a number of immigrant-specific characteristics that may not be available in the same data set.³ Some of these important control variables are noted below.

Education is traditionally included as one of the important control variables in recent research on ethnic inequality in Canada (Boyd 1992; Isajiw, Sev'er and Driedger 1993; Pendakur and Pendakur 1998; Reitz and Breton 1994, DeVoretz and Dean, 2000). This research has demonstrated that ethnic group income differentials are substantially reduced or eliminated when the effects of education are controlled.

However, there is little consensus in literature explaining the observed difference in education levels across ethnic groups. Chiswick (1988) suggests that this difference

² The necessity to control for assimilation and cohort effects in one model may also create an over-identification problem in the model (Borjas 1990, 1992).

³ For instance, immigrant admission class (economic, family, refugee) is a significant predictor of an immigrant's ability to experience earnings' catch up. Unfortunately, the census data, used here omits this important variable while containing many other important control variables.

could be explained by different "tastes for education." However, his hypothesis that education enters the utility function as a consumption good has not been supported by conclusive empirical evidence. Borjas (1992) puts forward another hypothesis of ethnicity acting as an externality in the human capital accumulation process. His empirical evidence reveals that the skills of today's generation depend not only on the skills of their parents, but also on the average skills of the ethnic group in their parents generation.

Although it is widely accepted that disparities in education contribute to poor labour market outcomes experienced by some ethnic groups, a closer look at the nature of the relationship between education and economic success may allow a more sophisticated interpretation. The literature offers evidence of non-linearities, defined as a "sheepskin effect" (Jaeger and Page 1996). According to market signaling theory, the "sheepskin effect" is a wage return specific to the individual's educational credentials rather than to the accumulated years of education.

Ferrer and Riddell (2002) provide an empirical test for the role of credentials in the Canadian labour market. Their study of the Canadian-born population reveals the presence of large sheepskin effects that increase with a higher level of educational attainment. Betts and Lofstrom (1998), in their investigation of the U.S. labour market, found that sheepskin effects influence earnings in different ways for natives and immigrants. Their findings suggest that sheepskin effects derived from graduating from college are greater for immigrants than natives, but smaller for the completion of secondary school.

Little research has been done on the sheepskin effect across ethnic groups, and it has mainly focused on visible minorities'. Belman and Heywood (1991) present evidence in support of the hypothesis that minorities enjoy larger sheepskin effects. Gibson (2000) in his research on the returns to education in New Zealand found larger sheepskin effects for minorities with the returns to credentials exceeding the returns to years of education. Given the growing literature on the importance of the recognition of foreign credentials, this paper will emphasize the sheepskin effect for the Ukrainian ethnic group.

In order to complete the economic portrait of Ukrainian immigrants in Canada, we widen our perspective by including Ukrainians who enter the U.S. labour market. In addition to the comparison of the economic performance of Ukrainians with other population groups within each country, we perform a cross-country comparison to detect possible cross-border ethnic immigrant effects on earnings. In particular, I pose a speculative question: should Ukrainian immigrants stay in Canada or move to the U.S. after they gain mobility rights to the United States with Canadian citizenship? Or alternatively, I ask what was the economic cost borne by Ukrainians initially choosing to immigrate to Canada?

Two strains of literature will direct the final part of this study. First, DeVoretz and Iturralde (2000), based on the standard human capital model (Becker 1964), provide a persuasive economic argument for Canadian citizens to move to the U.S. in certain skill categories. Second, Borjas (1987, 1993), using the alternative specification of human capital model where migration incentives are a function of the relative wages in the destination and the origin, has started a series of studies on selectivity in migration. Based on this approach, Borjas (1991) shows that the Canadian points system, on average,

generates a greater skilled immigrant inflow than the U.S. He argues that this happens because the Canadian system favorably alters Canada's national origin mix of immigrants rather than selecting the more skilled. This paper asks if these combined insights of Borjas (source country) and post-immigration incentives to move to the United States may apply in the Ukrainian case.

In sum, this literature review has established that there exists a limited literature on immigrant overachievers and directs the methodology this paper must employ to investigate Ukrainians as potential overachieving ethnic group. In addition, the standard discrimination literature provides a methodology owing to Blinder and Oaxaca to separate out ethnic versus foreign-birth status effects when we investigate the differential performance of Canadian-born versus foreign-born Ukrainians. Finally, using the methodology of DeVoretz and Iturralde, we can explore the effect of Canadian immigration policy vis-à-vis the U.S. policy in sorting Ukrainian immigrants between the two countries based on expected income performance.

CHAPTER THREE: ECONOMIC PERFORMANCE OF ETHNIC UKRAINIANS IN CANADA

Canadian Data

The data are collected from the 1996 Canadian Census. The sample population includes all males and females residing in central and western Canada. The sample is restricted to individuals aged between 18 and 65 who reported wage and salary income in 1995. Those who are self-employed or unemployed, and those who obtain income solely from other sources such as government transfer payments and capital gains are excluded from the sample.⁴

The sample is further divided into four groups based on an individual's ethnic background. i) Ukrainian Immigrants (UI), ii) Non-Ukrainian Immigrants (NUI), iii) Ukrainian Canadian-born (UCB), and iv) Non-Ukrainian Canadian-born (NUCB). In this paper there are 541 UI, 63,162 NUI, 11,950 UCB and 242,727 NUCB observations. Since this paper has employed the Public Use Microdata File (PUMF) of the 1996 Canadian Census, which in turn contains 2.8 percent of 1996 Canadian Census data, the total observations for these four categories, 318,380 observations, reflect approximately 11,370,714 individuals who would have met the criteria stated above (if 100 percent of Census data are used), which is about one-third of the total Canadian population in 1996.

⁴ In terms of wage and salary income, there are some unreasonable figures such as \$12 per year. This may be due to the confusion of the respondents who claimed an hourly wage, instead of an annual wage. Thus, these observations are also excluded from the sample.

Descriptive Analysis

Table 1 reports some socio-economic characteristics of ethnic Ukrainians within immigrants and Canadian born categories. Our census based data report that in 1995 Ukrainian immigrants earned more wage income than other immigrants, whereas Canadian born Ukrainians wage income equalled that of the Canadian born. However, all immigrants and Ukrainians in particular reported lower wage incomes than their Canadian born counterparts. In our analytical section below we will employ human capital theory to explain these observed differences.

At this point we note that Canada's immigrant selection process is an important determinant of wage differential across immigrant groups. Canadian immigration system developed a screening device to select skilled immigrants based on the assessment of human capital characteristics. Thus, an entry cohort, which largely passes through the independent class, should report higher wage income. According to figures 1 and 3, only 30 percent of non-Ukrainian immigrants pass through this selection system in 1991-2001, whereas more than 60 percent of ethnic Ukrainians entered Canada as skilled workers.

In contrast to the demographic characteristics (working age and marital status) the reported human capital attributes in Table 1 display greater variability across ethnic status. All immigrants in general, and Ukrainian immigrants in particular, report higher levels of education (a greater proportion with university degrees). Ukrainian immigrants report a tendency to speak an official language - English, at home. Finally, across all groups Ukrainian immigrants have greater concentration in the professions (36 percent) and smallest concentration in the low skill occupations (43.3 percent).

Regression Analysis

In this section we briefly report the results of testing a human capital model for the earnings experiences of four population groups. The following regression analysis allows us to isolate the effects of age on wage income while controlling for the influence of the remaining socio-demographic and to determine if the traditional human capital model explains earnings of Ukrainians in Canada.

In the context of economic performance of immigrants versus natives, the human capital model argues that after arrival immigrants accumulate country-specific knowledge and experience and greater language skills that gradually make them more competitive in the Canadian labour market. Thus, in the absence of discrimination and other imperfections in the labour market, we expect that Ukrainian immigrants will experience an initial earnings disadvantage relative to their Canadian-born Ukrainian cohort, and then after some years, “catch up” and overtake the earnings of the Ukrainian Canadian-born. The model also predicts that over time an individual tends to invest less in human capital due to the increasingly high opportunity costs (in terms of foregone earnings due to higher earnings from the previously accumulated investment), given the shorter time to recoup the benefits of this investment. In addition to the natural depreciation of human capital with age, this would make the shape of the age earnings profile concave reflecting that earnings are declining as the stock of productive human capital deteriorates.

For both groups of Canadian born we specify the following log-earnings function:

Equation 1.

$\ln \text{wage} = f(\text{age}, \text{age}^2, \text{female}, \text{married}, \text{education attainment dummies } (\text{dipl}, \text{bach}, \text{bachpl}, \text{phd}), \text{occupational dummies } (\text{skl}, \text{prof}), \text{lnwkswk}),$

where:

age – individual's age; *female* – dummy for females⁵; *married* – dummy for the married; *dipl*, *bach*, *bachpl*, *phd* – educational credentials dummies; *skl* – dummy for skilled occupation; *prof* – dummy for professional occupation; *lnwkswk* – natural logarithm of weeks worked.

In this model the dependent variable *lnwage*, a natural logarithm of annual wage earnings, is determined by the human capital (age as a proxy for experience, and education) and demographic characteristics (marital status and gender) conditioned on weeks worked and occupational choice.

The *age* and *age squared* variables are included in the earnings equation in order to capture two effects: on one hand, the impact of labour market experience, on the other hand, the diminishing return to productivity (earnings) owing to aging. We expect positive signs for the *age*, credential and occupational variables, *married*, *lnweeks*, and negative signs for the *age squared* and *female* variables.

For the immigrants groups we augment Equation 1 to take into account language skills, and other factors, such as cultural adaptability and knowledge of Canadian labour market, which may condition the size of the entry effect (constant term) and the assimilation process.

Next, the earnings function for foreign born is specified as follows:

Equation 2

$$Lnwage = f(age, age^2, married, female, dipl, bach, bachpl, phd, skl, prof, lnwkswk, a \text{ dummy representing knowledge of official language } (oln), \text{ year since migration } (ysim) \text{ and } ysim^2)$$

⁵ Because of the data limitations, namely the small sample for Ukrainian immigrants, we cannot run separate regressions for males and females. Instead, we include a dummy variable to capture a gender effect in the difference of the intercepts.

The coefficients on $ysim$ and $ysim^2$ are predicted to be positive and negative respectively whereas a greater facility in an official language is expected to have a positive effect on wage earnings. The other variables are expected to obtain the same signs as in the Canadian-born case.

Table 2 summarizes our regression analysis for the four population groups. For non-Ukrainian immigrants, Ukrainian Canadian born and non-Ukrainian Canadian born most estimated coefficients are significant and obtain the expected signs.

However, the estimated coefficient on *married* is insignificant and has a negative sign for the Ukrainian immigrant group. Coefficients on educational credentials variables are also insignificant which is possibly owing to the small sample size for this group.

The reported results also suggest that occupation and the number of weeks worked have the greatest effect on for the Ukrainian immigrant earnings, whereas as a university level educational credential is a most important earnings determinant for the Canadian-born group.

Sheepskin Effects

In our initial analysis of the human capital model, we used the highest degree earned rather than the total years of schooling as an educational characteristic because census data on total years of schooling are grouped into several uneven intervals, which cannot be employed as a continuous measure. Given this choice of an educational variable and the fact that Ukrainian immigrants on average demonstrate a higher educational attainment, we will now attempt to assess the role of education on earnings performance from a different perspective, namely the value of a degree.

Signalling models provide a framework to understand why labour markets provide greater incentives to some groups to acquire high-level credentials and not others. These signalling models rely on what is called the “sheepskin effect,” which is an increase in earnings owing to a specific return to an educational credential rather than the return to the accumulated years of schooling. As noted earlier, other studies have reported significant sheepskin effects (Belman and Heywood 1991) and the following analysis is intended to check if this is the case for Ukrainian immigrants.

For each of the four groups, we re-estimate the earnings equation in the traditional form of the log-linear function:

Equation 3

$$\ln wage = f(\text{age}, \text{age}^2, \text{female}, \text{married}, \text{dipl}, \text{bach}, \text{bachpl}, \text{phd}, \text{skl}, \text{prof}, \text{lnwkswk})$$

In this equation the dependent variable is the natural logarithm of annual earnings. In addition to standard demographic and control variables, dummy variables defined earlier distinguish between the four types of credentials: diploma, bachelor, bachelor plus, and Ph.D. The coefficients on these dummies estimate the marginal effect for each level of education, as compared to the excluded group who have a high school degree or less. The initial test for sheepskin effects is based on a generalization of equation (3) with a string of dummy variables for years of completed education, S_i added to the model. The coefficients on these dummy variables should capture any (possibly non-linear) returns to years of schooling, allowing the qualification variables to capture any sheepskin effects (Jaeger and Page 1996).

For each population group we estimate two log-linear equations: with and without the credential variables with both models including dummy variables for the years of

schooling. The sheepskin effect for the i -th year of schooling is calculated as the difference between the coefficients on the i -th year of schooling dummies from the two models. Results are summarized in Table 3.

According to our estimates, all immigrants experience a sheepskin effect for all educational degree except the highest. Among the two immigrant groups, Ukrainian immigrants experience greatest sheepskin effects.

Age-Earnings Profiles (Canada)

An age-earnings profile shows the relationship between the age and the average earnings of an individual, conditioned on other human capital characteristics, as they grow older in Canada. This paper analyses age-earnings profiles for four groups: Ukrainian immigrants (UI), non-Ukrainian immigrants (NUI), Ukrainian Canadian-born (UCB) and non-Ukrainian Canadian-born (NUCB), holding variables such as gender, marital status, education and occupational skill constant. If age is treated as a proxy for experience, an age-earnings profile could be also interpreted as an “experience-earnings profile.”

Figure 5 illustrates age-earnings profiles of the four groups. As expected, all four age-earnings profiles exhibit an increasing return to experience at a decreasing rate, as predicted by human capital theory. Regardless of their ethnic background, two Canadian-born groups (UCB and NUCB) follow a similar pattern and reach their earnings maximum at the age of 46.

As expected from human capital theory, both immigrant groups (UI and NUI) exhibit flatter profiles, and they reach their maximums later: UI at 55, and NUI at 50 years of age. Moreover, the earnings of Ukrainian immigrants peak at a higher level than

the earnings of non-Ukrainian immigrants. Furthermore, Ukrainian immigrants catch up to the Canadian-born earnings earlier than non-Ukrainian immigrants. In fact, Ukrainian immigrants reach the catch-up point at the age of 52, while non-Ukrainian immigrants equal Canadian-born earnings at age 56. This finding suggests that relative to non-Ukrainian immigrants, Ukrainian immigrants experience less diminishing returns to their working experience.

Assimilation Profiles (Canada)

In order to further assess the earnings performance of Ukrainian immigrants, we estimate assimilation profiles for both immigrant groups.

Two general factors determine relative immigrant labour market performance: i) assimilation effects and ii) cohort effects. Assimilation effects occur over the period of residence in the destination country and can be characterized as an immigrant's eventual convergence to the labour market performance of the native-born. Cohort effects arise from the differences in the labour market conditions for immigrants who arrive in different years. Unfortunately, with available sample sizes taken from a single cross-section of data available from 1996 Census, we are not able to separate the cohort and assimilation effects. Figure 6 presents an immigrant's earnings as a function of the years since immigration. As in the case of age-earnings profiles, the intercept captures all other productive characteristics estimated at their mean values.

For Ukrainian immigrants, the assimilation process starts at a higher income and the income remains above that for non-Ukrainian immigrants with the difference increasing over time. The greater intercept reflects the more favorable entry effect for the Ukrainian immigrants. This positive earnings premium implies that the quality of the

earnings-enhancing characteristics Ukrainians have acquired in their home country is relatively higher than for the rest of the immigrant population. It may also reflect a higher degree of transferability of skills across countries.

CHAPTER FOUR: SHOULD UKRAINIANS MOVE TO THE U.S.?

Selection to Canada and U.S.: Introduction

Earlier we posed a test of the Borjas self-selection hypothesis. In effect we are asking what would be the outcome of Ukrainian immigrants in Canada if they had moved to the U.S.? The underlying argument is that Canada's points system should sort out the most productive Ukrainian immigrants to North America unless Ukrainians self select and the best choose to move to the United States. The analysis below addresses the self-selection hypotheses while asking if Ukrainians may have an incentive to move to the United States.⁶ The rest of this section outlines the procedure to test for the incentives to move to the United States.

United States Data

We use 1990 U.S. Census from IPUMS (Integrated Public Use Microdata System) database. Although U.S. and Canadian microdata differ in some minor aspects, they ask similar questions and use similar variable definitions.

As in the Canadian case we restrict our analysis to individuals aged between 18 and 65 who reported wage and salary incomes. The U.S. samples representing four population groups have the following sizes: Ukrainian immigrants – 1,890 observations, non-Ukrainian immigrants – 473,577, Ukrainian US born – 15,222, non-Ukrainian U.S. born – 5,071,328.

⁶ Migration to the United States is quite easy after acquiring citizenship since the NAFTA TN visa allows immediate movement with a bone fide job offer in the United States in any of 64 professions.

Economic Performance of Ethnic Ukrainians in the U.S.: An Overview

In the second part of our study we augment the analysis of the earnings performance of Ukrainian immigrants in Canada by comparing them to their U.S. counterparts. Table 4 presents a brief summary of the performance of ethnic Ukrainians in the U.S. based on the familiar four-group framework.

The average wage statistic indicates that in 1989 Ukrainian immigrants outperformed all other population groups. The following earnings enhancing demographic and human capital characteristics explain this phenomenon. First, higher average age (45 vs. 37) suggests that Ukrainian immigrants have the greatest work experience. Second, the percentage of the legally married is the highest for the foreign born Ukrainians. Third, 34 percent of Ukrainian immigrants received university education, whereas only 23 percent of non-Ukrainian immigrants and 22 percent of the non-Ukrainian U.S. born reported university degrees. Fourth, Ukrainian immigrants indicate that they have better command of English than their non-Ukrainian counterparts (93 vs. 77 percent). Finally, Ukrainian immigrants are more likely to be employed in skilled or professional occupations than workers from the other population groups.

Using the same regression specifications and methodology, we construct age-earnings profiles for the United States. Figure 7 indicates that ethnic Ukrainians outperform non-Ukrainians in immigrant and U.S.-born population categories.

Earnings for Ukrainian immigrants peak later, and at the same level as for the U.S.-born Ukrainians. Moreover, age-earnings profiles representing ethnic Ukrainians have steeper slopes, and are located above that of non-Ukrainians.

Comparing the Canadian and the U.S. experience, we can conclude that Ukrainian immigrants, in terms of their performance relative to the other population groups, are doing better in the United States than in Canada.

Decomposition of the Cross-Country Earnings Differential

In order to compare the economic performance of ethnic Ukrainians across the U.S.-Canada border we use 1991 Canadian census and 1990 U.S. census microdata⁷.

Using the CPI and average 1990 exchange rate, we convert 1989 wages earned in US dollars into their 1990 Canadian dollar equivalent. Figure 8 illustrates relative earnings performance of Ukrainian immigrants in the United States and Canada. The diagram indicates a substantial earnings differential across the two countries. Is this differential explained by the difference in human capital endowments, or by other factors related to the cross-country variation in technological and labour market structures?

Leaving aside the nature of the earnings differential not attributed to human capital characteristics, we estimate how much of the observed earnings differential for Ukrainian immigrants resident in the two countries is explained by the difference in human capital endowments. The result, on one hand, would allow us to partially assess the effectiveness of immigration policies in Canada and the U.S. in sorting out the most productive human capital. On the other hand, we could estimate the opportunity cost in terms of forgone earnings for Ukrainian immigrants of staying in Canada rather than moving to the U.S.

⁷ Although the latest Canadian census data is available for 1996, there is no matching census data for the U.S., where censuses are conducted every ten years. Therefore, the closest match between the two countries occurs in 1990 (U.S.) and 1991 (Canada).

According to the Blinder-Oaxaca methodology, the wage differential between the two groups could be represented as the sum of the two components: one part attributed to the different earnings generating structure, the other – explained by the difference in human capital endowments. Traditionally, this approach has been used in studies of labour market discrimination, meaning that the first component represents the wage disadvantage due to discrimination. The particular challenge of this paper is to apply this framework to investigate the immigrants' selection process across the two countries, which is essentially a discrimination process. In our view, Canada with its more restrictive point-based assessment system "discriminates" against the less skilled immigrants who want to enter North America.

Given that wage earnings are generated within different economies, we acknowledge the need for a strong technological assumption. Indeed, the higher labour productivity of Ukrainian immigrants observed in the United States could be explained by a higher total factor productivity or by a higher capital-labour ratio. If I invoke the not unreasonable assumption that differences in technology between Canada and the United States are owing to a Hicksian-neutral technological advantage than differences in the estimated coefficients in the earnings functions will be explained by technology differences with any remaining earnings differences owing to human capital endowments between Ukrainians in the U.S. and Canada.

I now turn to estimating the sources of earnings differences between Ukrainians resident in the U.S. and Canada with earnings differential equation in the following matrix form:

Equation 4.

$$\ln W_{US} - \ln W_{CAN} = \bar{X}_{CAN}^T (\hat{\beta}_{US} - \hat{\beta}_{CAN}) + (\bar{X}_{US} - \bar{X}_{CAN})^T \hat{\beta}_{US}$$

where

$\hat{\beta}_{CAN}$ - vector of the estimated coefficients for Canadian sample;

$\hat{\beta}_{US}$ - vector of the estimated coefficients for the U.S. sample;

\bar{X}_{CAN} - vector of mean values of explanatory variables for the Canadian sample;

\bar{X}_{US} - vector of mean values of explanatory variables for the U.S. sample;

$\hat{\beta}_{US} - \hat{\beta}_{CAN}$ - difference in the wage generating structure between the U.S. and

Canada;

$\bar{X}_{US} - \bar{X}_{CAN}$ - difference in the human capital endowments between the Ukrainian immigrants in Canada and their American counterparts.

The first term in the right-hand side of this equation represents an earnings differential that is not explained by the difference in productive characteristics. In the context of our study this could be interpreted as the wage premium for a Ukrainian immigrant in Canada moving to the U.S. The second term represents an earnings differential due to the higher human capital endowments for the Ukrainian immigrants in the U.S.⁸ Variances of the estimates of those components are calculated according to the following formulas:

$$\begin{aligned} \text{var}[\bar{X}_{CAN}^T (\hat{\beta}_{US} - \hat{\beta}_{CAN})] &= \bar{X}_{CAN}^T [\text{var}(\hat{\beta}_{US}) + \text{var}(\hat{\beta}_{CAN})] \bar{X}_{CAN} \\ \text{var}[(\bar{X}_{US} - \bar{X}_{CAN})^T \hat{\beta}_{US}] &= (\bar{X}_{US} - \bar{X}_{CAN})^T \text{var}(\hat{\beta}_{US}) (\bar{X}_{US} - \bar{X}_{CAN}) \end{aligned}$$

For Ukrainian immigrants in Canada and in the U.S. we estimate vectors

⁸ We assume that the "non-discriminatory" wage structure is the current U.S. wage structure.

$\hat{\beta}_{US}, \hat{\beta}_{CAN}, \bar{X}_{US}, \bar{X}_{CAN}$ using the log-earnings equation specified earlier. Our calculations indicate that out of the 22.5 percent earnings advantage of Ukrainian immigrants in the U.S. over their Canadian counterparts, 19 percent is attributed to the better endowment in human capital, and 3.5 percent is explained by other factors. These estimated components are found statistically significant with standard deviations equal to 1.71 and 3.67 respectively.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

Our study of economic performance of Ukrainian immigrants based on 1996 Canadian census data suggests that among all immigrants entering Canada Ukrainians demonstrate above average economic performance in terms of wage earnings. The relative success of Ukrainian immigrants could be explained by greater official language abilities, a more favorable occupational distribution, and better education. These effects translate into a higher peaked age-earnings profile, a faster rate of assimilation and earlier catch up age with respect to Canadian born earners. Our findings also suggest that Ukrainian immigrants tend to experience a greater sheepskin effect than the rest of the immigrant population. In other words a Ukrainian degree provides a stronger signal to Canadian employers. We also found that Ukrainian ethnicity alone makes no difference, in terms of earnings performance, for a Canadian-born ethnic Ukrainian.

The economic success of Ukrainians in the United States is even more pronounced. Ukrainian ethnicity in both foreign and U.S.-born categories yields substantially higher age-earnings profiles than the aggregate of the rest of U.S. the ethnic groups.

Finally, this cross-country comparison of the labour market performances suggests that more productive Ukrainian immigrants enter the U.S. From the immigration policy perspective these findings indicate that the Canadian selection system, which is primarily based on economic assessment, fails to attract Ukrainian immigrants with

higher quality human capital. In short, the Borjas hypothesis of self-selection is supported in this case.

APPENDIX A: TABLES

	<i>Ukrainian Immigrants</i>		<i>Non-Ukrainian Immigrants</i>		<i>Ukrainian Canadian Born</i>		<i>Non-Ukrainian Canadian Born</i>	
	Count	%	Count	%	Count	%	Count	%
Total (age 18-65)	547		63570		11950		242727	
Age								
Mean	42.46		41.55		36.44		37.33	
Sex								
Female	246	45.00	29404	46.30	5902	49.40	113980	47.00
Male	301	55.00	34166	53.70	6048	50.60	128747	53.00
Marital status								
Divorced	48	8.80	4042	6.40	929	7.80	20843	8.60
Legally married	370	67.60	43457	68.40	6456	54.00	124897	51.50
Separated	20	3.70	2208	3.50	348	2.90	7972	3.30
Never married	99	18.10	12966	20.40	4096	34.30	86363	35.60
Widowed	10	1.80	897	1.40	121	1.00	2652	1.10
Highest level of education								
High school and lower	198	36.20	28444	44.70	5729	47.90	119732	49.30
Diploma or certificate (above high school)	202	36.90	20745	32.60	4124	34.50	81710	33.70
Bachelor	84	15.40	8623	13.60	1518	12.70	28853	11.90
Bachelor plus (above bachelor, masters, medical)	55	10.10	4799	7.50	541	4.50	11503	4.70
Earned doctorate	8	1.50	959	1.50	38	0.30	929	0.40
Knowledge of Official Languages								
English only	456	83.40	51397	80.90	11096	92.90	147778	60.90
French only	2	0.40	1644	2.60	4	0.00	36880	15.20
Both English and French	78	14.30	8404	13.20	848	7.10	58009	23.90
Neither English nor French	11	2.00	2125	3.30	2	0.00	60	0.00
Home Language								
English only	343	62.70	35576	56.00	11772	98.50	166758	68.70
French only	6	1.10	2609	4.10	51	0.40	71775	29.60
Both English and French	2	0.40	167	0.30	10	0.10	1034	0.40
Other	196	35.80	25218	39.70	117	1.00	3160	1.30
Occupation								
Professional (includes managerial)	197	36.00	19278	30.30	3637	30.40	72311	29.80
Skilled	113	20.70	13301	20.90	2708	22.70	53825	22.20
Low Skill	237	43.30	30991	48.80	5605	46.90	116591	48.00
Weeks worked								
Mean	44.04		43.75		43.82		43.40	
Wage income								
Mean, CANS	30508.44		28902.14		28811.57		28613.88	

Table 1: Descriptive statistics for Canadian population groups

Variables	Ukrainian Immigrants	Non-Ukrainian Immigrants	Ukrainian Canadian Born	Non-Ukrainian Canadian Born
	<i>N</i> =541	<i>N</i> =63,162	<i>N</i> =11,950	<i>N</i> =242,727
	Model Coefficients (t-statistics)			
(Constant)	4.539 (9.083)	4.702 (107.451)	4.268 (8.752)	4.387 (267.632)
AGEP	6.420E-02 (2.875)	7.597E-02 (40.941)	.123 (32.125)	.115 (136.233)
AGESQ	-6.561E-04 (-2.500)	-7.929E-04 (-36.541)	-1.343E-03 (-28.136)	-1.248E-03 (-119.080)
YSIM	2.395E-02 (2.778)	2.315E-02 (3.737)	-	-
YSIMSQ	-2.895E-04 (-1.790)	-1.390E-03 (-3.196)	-	-
FEMALE	-.499 (-7.903)	-.315 (-55.197)	-.405 (-32.122)	-.392 (-140.867)
MARRIED	-6.649E-02 (-.876)	6.835E-02 (9.889)	8.266E-02 (5.662)	7.977E-02 (25.117)
OLN	.215 (.928)	8.661E-02 (5.376)	-	-
DIPL	9.388E-02 (1.218)	.117 (17.460)	.105 (7.185)	.103 (32.009)
BACH	.138 (1.347)	.215 (23.083)	.233 (10.828)	.254 (52.063)
BACHPL	3.234E-02 (.261)	.281 (23.473)	.280 (8.543)	.340 (47.737)
PHD	.210 (.781)	.497 (20.822)	.504 (4.515)	.373 (16.523)
SKL	.281 (3.251)	.177 (23.585)	.223 (13.454)	.204 (56.032)
PROF	.381 (4.612)	.345 (46.407)	.372 (22.186)	.351 (94.248)
LNWKSWK	.926 (15.789)	.801 (137.630)	.819 (60.761)	.823 (289.441)
Adj. R ²	.49	.44	.51	.50
F-statistics	37.99	3563.14	1059.72	22688.21

Table 2: Estimation of log-linear earnings model

Years of schooling	Ukrainian	Non-Ukrainian	Ukrainian	Non-Ukrainian
	Immigrants	Immigrants	Canadian born	Canadian born
	% of return due to sheepskin effect			
5-8 Yrs Schooling	2.5	0.517	-1.013	-0.346
9 Years Schooling	3.511	1.441	-0.479	0.175
10 Years Schooling	3.8	1.7023	0.2	0.637
11 Years Schooling	5.5	2.981	0.187	1.2
12 Years Schooling	6.2	2.723	1	1.5
13 Years Schooling	9.5	4.761	4.2	3.9
14-17 Years Schooling	19.1	14.4	12.6	13
18 More Years Schooling	22.8	29.5	30.8	32.5

Table 3: Estimation of sheepskin effects

	<i>Ukrainian Immigrants</i>		<i>Non-Ukrainian Immigrants</i>		<i>Ukrainian U.S. Born</i>		<i>Non-Ukrainian U.S. Born</i>	
	Count	%	Count	%	Count	%	Count	%
Total (age 18-65)	1890		473577		15222		5071328	
Age								
Mean	45.06		37.73		36.96		37.45	
Sex								
Female	856	45.30	202414	42.70	6903	45.30	2358437	46.50
Male	1034	54.70	271163	57.30	8319	54.70	2712891	53.50
Marital status								
Divorced	163	8.60	30744	6.50	1250	8.20	515310	10.20
Legally married	1383	73.20	307739	65.00	8922	58.60	3103453	61.20
Separated	32	1.70	13707	2.90	228	1.50	118929	2.30
Never married	255	13.50	112703	23.80	4607	30.30	1243794	24.50
Widowed	57	3.00	8684	1.80	215	1.40	89842	1.80
Highest level of education								
High school and lower	673	35.60	260701	55.00	4772	31.30	2362896	46.60
Diploma or certificate (above high school)	576	30.50	105201	22.20	4894	32.20	1591865	31.40
Bachelor	345	18.30	62075	13.10	3517	23.10	746855	14.70
Bachelor plus (above bachelor, masters, medical)	250	13.20	37344	7.90	1817	11.90	334120	6.60
Earned doctorate	46	2.40	8256	1.70	222	1.50	35592	0.70
Knowledge of Official Language								
Speak English	1765	93.40	363864	76.80	15175	99.70	5047265	99.50
Don't speak English	125	6.60	109713	23.20	47	0.30	24063	0.50
Home Language								
Speak English	728	38.50	93535	19.80	14073	92.50	4764840	94.00
Don't speak English	1162	61.50	380042	80.20	1149	7.50	306488	6.00
Occupation								
Professional (includes managerial)	818	43.30	130761	27.60	6619	43.50	1632544	32.20
Skilled	417	22.10	132184	27.90	2781	18.30	1275555	25.20
Low Skill	655	34.70	210632	44.50	5822	38.20	2163229	42.70
Weeks worked								
Mean	45.96		44.46		45.86		45.45	
Wage income								
Mean, US\$	29918.61		21140.26		27406.82		22471.65	

Table 4: Descriptive statistics for U.S. population groups

APPENDIX B: CHARTS AND GRAPHS

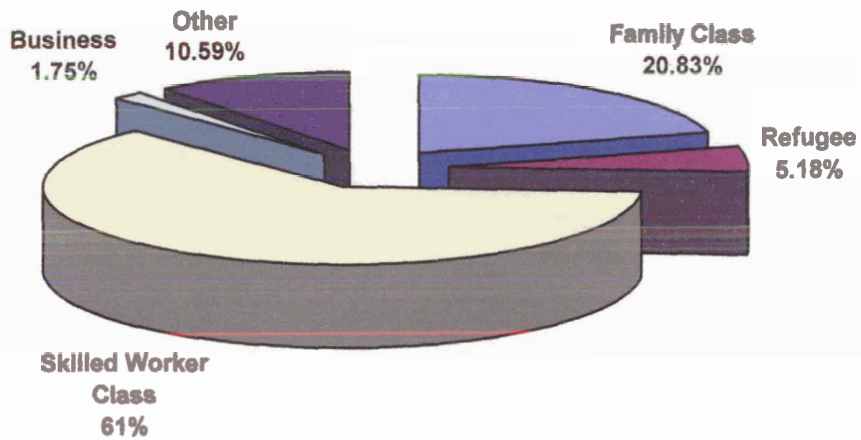


Figure 1: Entry gates for Ukrainian immigrants in 1991-2001. Source: LIDS, Citizenship and Immigration Canada.

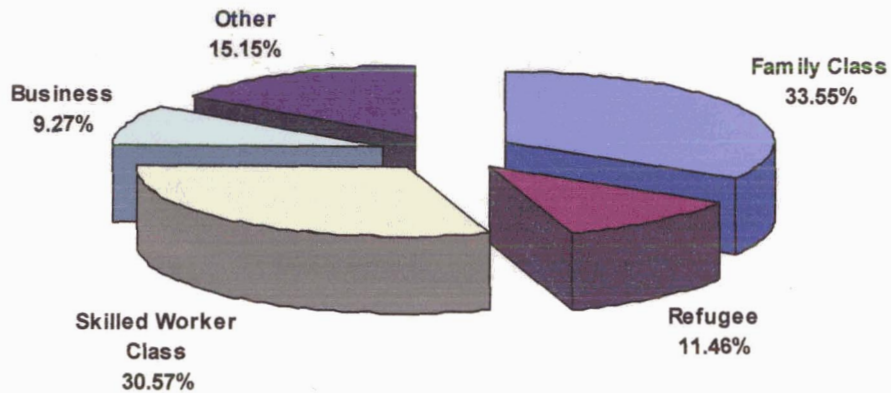


Figure 2: Entry gates for non-Ukrainian immigrants in 1991-2001. Source: LIDS, Citizenship and Immigration Canada.

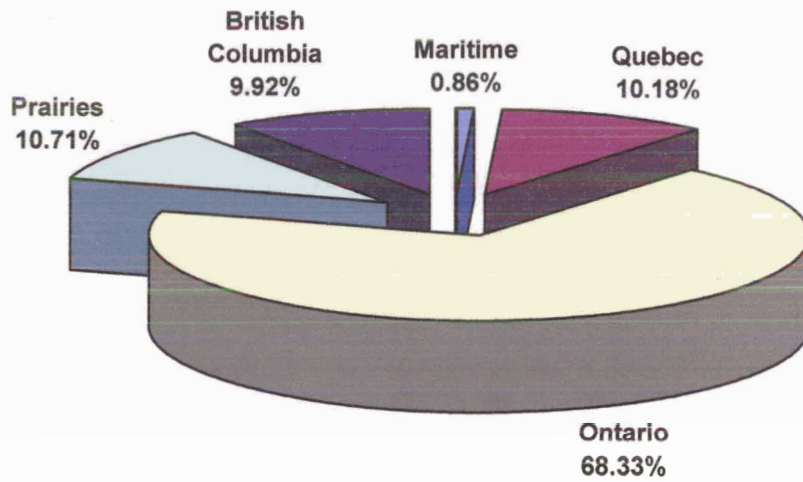


Figure 3: Province of destination for Ukrainian immigrants in 1991-2001. Source: LIDS, Citizenship and Immigration Canada.

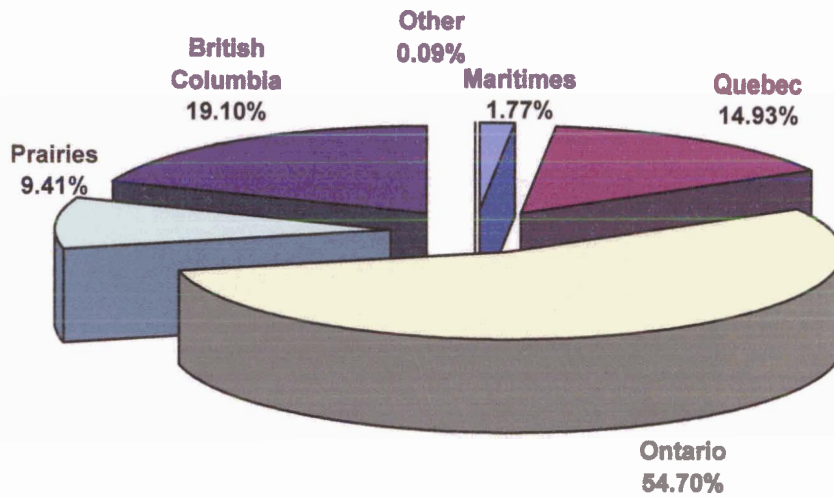


Figure 4: Province of destination for non-Ukrainian immigrants in 1991-2001. Source: LIDS, Citizenship and Immigration Canada.

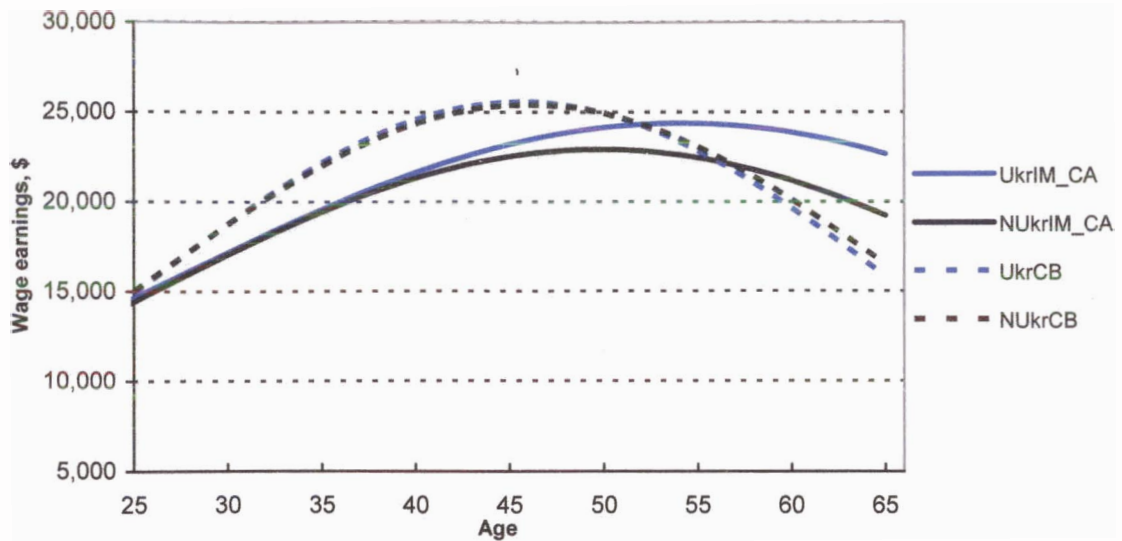


Figure 5: Age-earnings profile for Ukrainian Immigrants to Canada (UkrIM_CA), Non-Ukrainian Immigrants to Canada (NUkrIM_CA), Ukrainian Canadian Born (UkrCB) and Non-Ukrainian Canadian Born (NUkrCB). Source: Census of Canada, 1996.

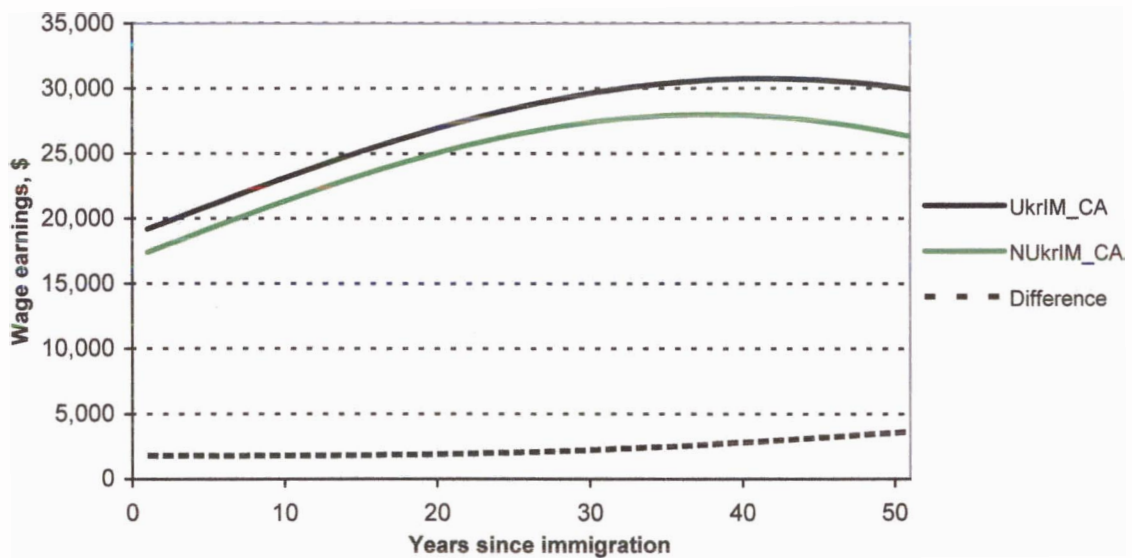


Figure 6: Assimilation profile for Ukrainian Immigrants (UkrIM_CA) and Non-Ukrainian Immigrants (NUkrIM_CA) in Canada. Source: Census of Canada, 1996

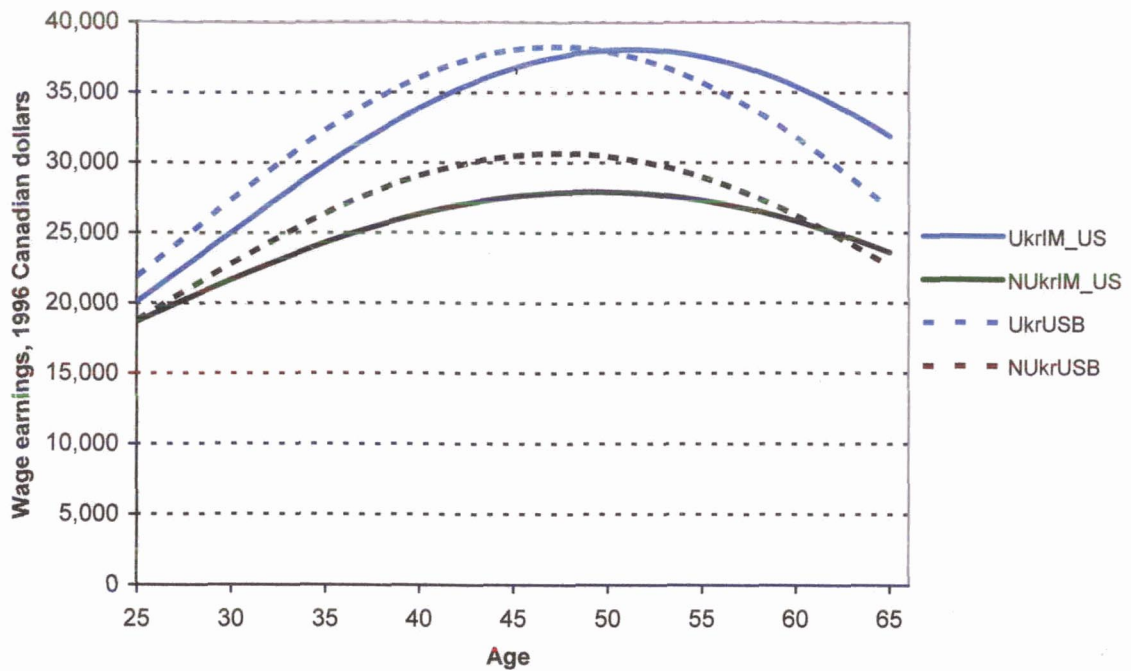


Figure 7: Age-earnings profiles for Ukrainian Immigrants to the U.S. (UkrIM_US), Non-Ukrainian Immigrants to the U.S. (NUkrIM_US), Ukrainian U.S. born (UkrUSB), and Non-Ukrainian U.S. born (NUkrUSB). Source: IPUMS, University of Minnesota.

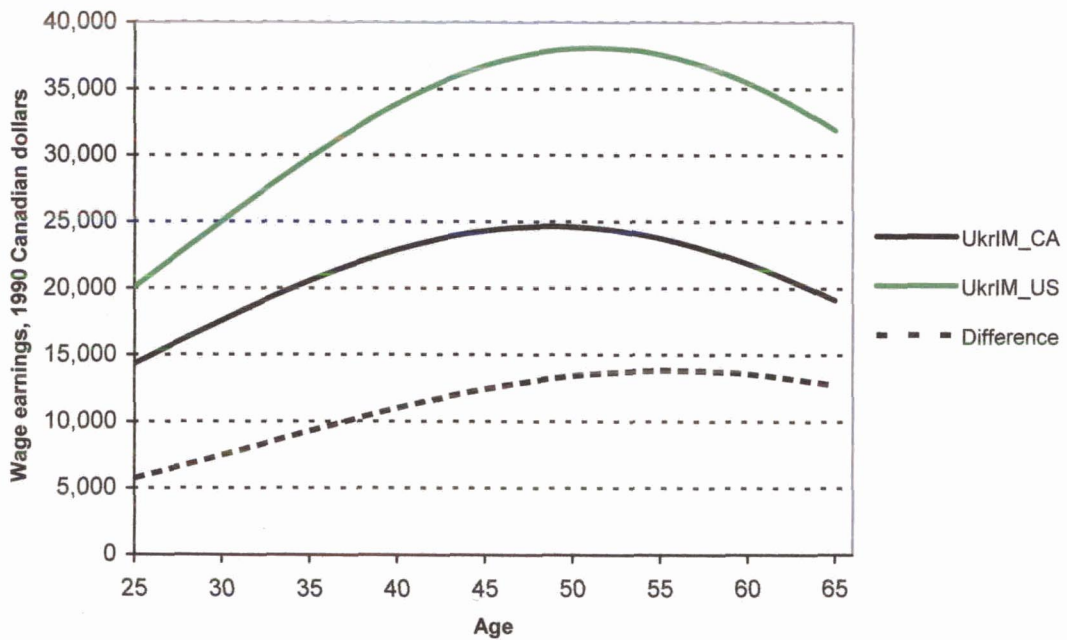


Figure 8: Age-earnings profiles of Ukrainian Immigrants to Canada (UkrIM_CA) and Ukrainian Immigrants to the U.S. (UkrIM_US). Source: IPUMS, Census of Canada, 1991.

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