



Catalogue no. 11F0019MIE — No. 262

ISSN: 1205-9153

ISBN: 0-662-40817-9

## Research Paper

**Analytical Studies Branch Research Paper Series**

# **The Deteriorating Economic Welfare of Immigrants and Possible Causes: Update 2005**

by Garnett Picot and Arthur Sweetman

Business and Labour Market Analysis Division  
24-F, R.-H.-Coats Building, Ottawa, K1A 0T6

Telephone: 1 800 263-1136



Statistics  
Canada

Statistique  
Canada

Canada

# **The Deteriorating Economic Welfare of Immigrants and Possible Causes: Update 2005**

**by Garnett Picot\* and Arthur Sweetman\*\***

**11F0019MIE No. 262**

**ISSN: 1205-9153**

**ISBN: 0-662-40817-9**

**This is a revised version of a previously released study No.222 dated July 2004  
This study incorporates more recent findings.**

Business and Labour Market Analysis Division  
24-F, R.-H.-Coats Building, Ottawa, K1A 0T6

\*Statistics Canada

and

\*\*School of Policy Studies, Queen's University

## **How to obtain more information :**

National inquiries line: 1 800 263-1136

E-Mail inquiries: [infostats@statcan.ca](mailto:infostats@statcan.ca)

**June 2005**

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2005

All rights reserved. The content of this publication may be reproduced, in whole or in part, and by any means, without further permission from Statistics Canada, subject to the following conditions: that it is done solely for the purposes of private study, research, criticism, review, newspaper summary, and/or for non-commercial purposes; and that statistics Canada be fully acknowledged as follows: source (or "Adapted from", if appropriate): Statistics Canada, name of product, catalogue, volume and issue numbers, reference period and page(s). Otherwise, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopy, for any purposes, without prior written permission from Licensing Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

**Cette publication est disponible en français.**

## **Note of appreciation:**

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

## **Table of Contents**

1.	Introduction.....	5
2.	The Declining Entry Level Earnings Among Immigrants .....	6
2.1	Earnings declines at Entry were as Great Among the University Educated .....	11
3.	The Deteriorating Low-Income Position of Recent Immigrants.....	11
3.1	The Rise in Low-Income Rates in Canada’s Largest Cities was Heavily concentrated Among Immigrants.....	14
4.	Why the Decline in Relative Entry Level Earnings, and Rising Low-Income Among Recent Immigrants? .....	15
4.1	a) The Changing Characteristics of Immigrants Entering .....	16
4.1	b) Other Factors Possibly Associated with the Shift to the Newer Source Regions: Education Quality, Language Skills and discrimination .....	16
4.2	The Returns to Years of Schooling and the Credentialism Issue .....	17
4.3	Declining Returns to Foreign Labour Market Experience .....	19
4.4	Deteriorating Labour Market Outcomes for New Labour Market Entrants in General, of Which Immigrants are a Part.....	20
4.5	Fluctuations in Macro-Economic Conditions.....	20
4.6	Strong Competition from the Increasingly Highly-Educated Canadian-Born.....	21
4.7	Changes in Social Transfer Usage and Other Income Sources .....	22
5.	Conclusion .....	22
	References .....	24

## **Abstract**

This paper reviews the increase in the earnings gap between immigrants and Canadian-born over the past two decades, and the current explanations of this labour market deterioration among recent immigrants in particular. The paper also outlines the rising gap in low-income rates between immigrants and non-immigrants. Like previous research, the paper concludes that the earnings gap at entry has increased for immigrants entering Canada during the 1990s, as compared to those of the 1970s. Furthermore, the gap in the low-income rate has been increasing. The rate of low income has been rising among immigrants (particularly recent immigrants) during the 1990s, while falling among the Canadian-born. The rise in low-income rates among immigrants was widespread, affecting immigrants in all education groups, age groups, and from most source countries (except the “traditional source regions”). Immigrants with university degrees were not excluded from this rise in low-income rates, in spite of the discussion regarding the rising demand for more highly-skilled workers in Canada. As a result of both rising low-income rates among immigrants, and their increasing share of the population, in Canada’s major cities virtually all of the increase in the city low-income rates during the 1990s was concentrated among the immigrant population.

Also reviewed here are the explanations discussed in the literature for the deterioration of immigrant economic outcomes. Three major sources are identified as being empirically important, all of which follow from declining labour market outcomes. First, the change in the characteristics of immigrants (e.g., from different source regions, rising levels of educational attainment, etc.) appears to have accounted for about one-third of the increase in the earnings gap at entry (i.e., the gap between immigrants and comparable Canadian-born). Second, decreasing economic returns to foreign work experience appears to play an equally large role. Third, there has been a general decline in the labour market outcomes of all new entrants to the Canadian labour market, and when new immigrants arrive in Canada they, regardless of age, appear to face a similar phenomenon. Other possible explanations are also discussed. Importantly, one potential factor that does not appear to be behind the decline is a reduction in the economic return to education. Immigrants, on average, do have a somewhat lower return to education obtained prior to immigrating (although not to education obtained once in Canada), but this has not changed much over the past two decades.

**Keywords:** immigrants, poverty, earnings, assimilation, immigration

## **1. Introduction**

Host countries such as Canada look to the skills and initiative of immigrants to promote economic growth. Immigrants, in turn, look to the host country for opportunities to gainfully employ their skills and abilities. These considerations are particularly important when immigrants are highly educated. Host countries are increasingly seeking highly-educated immigrants to drive economic growth in the “knowledge-based” economy, and immigrants look to use their higher education levels to achieve high economic standards of living.

Immigrants arriving in Canada during the late 1990s were definitely highly educated. In 2001, fully 42% of adult “recent” immigrants (those arriving during the previous five years) had a university degree, and a historically high 54% entered under the “economic” admissions class (only 31% in the family class). The situation was very different, twenty years earlier. In 1981 only 19% of recent immigrants had degrees, and during the early 1980s, 37% entered in the “economic” class, with 43% in the family class. Immigrants of the late 1990s were increasingly selected because of their potential contribution to the Canadian economy.

However, if immigrants are unable to convert their training to productive use, the expectations of both the host country and the arriving immigrants remain unmet. Immigrant contributions to the host country, which are central to the economic justification for relatively open immigration policies, may not be fully realized. In light of these considerations, there is considerable concern regarding the deteriorating economic outcomes among recent immigrants over the past two decades.

The analysis of employment *earnings* of immigrants is the most studied area of immigrant economic integration in Canada. Early findings indicated that newly arrived immigrants had lower earnings than comparable non-immigrant workers, but their initial earnings gap narrows significantly as they adjust to the labour market in the receiving society (Chiswick, 1978; Meng, 1987). More recent research suggests that the initial earnings gap may not close as quickly as earlier thought, even among groups entering during the 1970s (Hum and Simpson, 2003). Whatever the earnings gap at entry, and in the years following entry, during, say, the 1970s, these gaps increased in the 1980s and 1990s. Subsequent research indicated an emerging trend during the early 1980s of declining earnings among successive waves of immigrants relative to the Canadian born (Bloom and Gunderson, 1991; Abbott and Beach, 1993). A number of studies then asked if the decline was associated primarily with recessions, or the changing mix of immigrants by source country, and if this decline had abated during the late 80s (McDonald and Worswick, 1998; Baker and Benjamin, 1994; Grant 1999). More recent studies have concluded that the decline in entry level earnings of immigrants did continue through the early 1990s (Reitz, 2001). Research studies initiated by the research groups of Citizenship and Immigration, and Statistics Canada, using even more recent data, observe relatively little improvement during the late 1990s (Green and Worswick, 2002; Frenette and Morissette, 2003). Some studies note that although there has been a large decline in entry level earnings, the rate of growth in earnings with years in Canada is faster than among earlier cohorts (Li, 2003).

As important as studies of employment earnings are, they provide only part of the picture. They exclude the unemployed and those out of the labour market. They also exclude changes in all

sources of income other than earnings, such as social transfer benefits. During periods of deteriorating labour market outcomes such studies may underestimate the decline, in particular because they exclude the effects of possibly rising unemployment or the discouraged worker effect.

This paper briefly reviews the earnings decline among immigrants through the 80s and 90s. To provide a better overview of economic welfare outcomes among immigrants, the paper also reviews low-income trends among immigrants, recent immigrants in particular. The low-income rate<sup>1</sup> is a simple yet comprehensive measure of changing economic welfare among families at the bottom end of the income distribution. It reflects changes in unemployment, earnings, social transfers and other income sources.

This paper focuses on the late 1990s, a particularly important period. Given the increasing “economic” nature of immigration and the very significant economic recovery in the late 1990s (as unemployment fell from 9.4% to 6.8% between 1995 and 2000), one might have anticipated a marked improvement in immigrant economic outcomes. If the deterioration was simply related to the recessions of the early 1980s and 1990s, then by 2000 there may well have been a return to the better outcomes observed in the late 70s. The late 1990s is in this sense a sort of watershed; a period during which one looks for a return to the “good old days” of immigrant labour market outcomes. This paper also focuses on outcomes of highly-educated recent immigrants. One might expect this group to convert their training to productive use during a period of rapid economic growth, the expansion in the information and communications technologies sector, and the general expansion in the knowledge-based economy.<sup>2</sup>

This summary paper draws on the findings from two papers in particular, Picot and Hou (2003) and Frenette and Morissette (2003). The conclusion summarizes some of the more prevalent possible explanations, from various papers, for the declining outcomes of entering immigrants. The results reported are based on data from the 1981, 1986, 1991, 1996 and 2001 censuses.

## ***2. The Declining Entry Level Earnings Among Immigrants***

In spite of the increasingly economic nature of immigration during the late 1990s, earnings among male adult “recent” immigrants who worked full-time full-year fell by 13% between 1980 and 2000, two years that are in roughly the same position in the business cycle (Frenette and Morissette, 2003). Among recent female immigrants earnings rose 6%. During the same period, earnings among Canadian-born working full-time full-year rose by 10% for men, and 11% for women.

These numbers can be put in a longitudinal perspective by focusing on particular entry cohorts of immigrants. These cohorts consist of immigrants who entered Canada during a five-year period,

- 
1. The proportion of the population with family incomes below Statistics Canada’s Low-Income Cutoff (LICO), fixed at the 1992 level, and adjusted only for changes in the CPI. Hence, over the period of study this is a “fixed”, not a relative low-income measure.
  2. The “high-knowledge” sector was the fastest growing sector during the late 90s; employment grew by 28.6% compared to 6.4% for the economy as a whole.

say between 1975 and 1979, or 1990 and 1994. The earnings of the immigrants in each cohort are computed (as a proportion of the earnings of the Canadian-born) for the cohort after one to five years in Canada, six to ten years in Canada, and so on. In this way, one can determine: (a) the extent to which the earnings gap at entry between immigrants and Canadian-born is reduced with years spent in Canada, and (b) whether the earnings gap at entry is increasing.

The horizontal axis of each of the four plots in Chart 1 measures years since immigration, and the vertical axis measures earnings relative to some group of Canadian born workers. Relative earnings are represented as a proportion. When the proportion is, say, 0.9, immigrants earn 90% of what the Canadian born do, whereas when it is 1.0 the two groups have the same earnings. Each cohort is followed over time in Canada using data from the censuses that are conducted every five years.

Chart 1 suggests that the earnings gap for the cohort of the late 1970s was more than closed after twenty years in Canada. After 21-25 years adult immigrants working full-time full-year earned about 8% more than the Canadian born (both men and women). However, the earnings gap at entry has been increasing with successive cohorts. Among men, the cohort of the late 1970s earned 90% of that of the Canadian-born at entry<sup>3</sup> and among the early 1990s cohort, this number had fallen to 67%. Among the late 1990s cohort, however, the entry earnings gap appears to have been reduced significantly (compared to the early 90s cohort, for example), as recent immigrants earned 77% of that of the Canadian-born. The gap remained much greater than in the 1970s.

However, these charts compare all Canadian-born with all immigrants. We know that these two groups are very different regarding characteristics that affect their earnings potential. In particular, immigrants have been more highly educated than Canadian-born for many years, and their education level has increased rapidly, particularly during the late 1990s. A more appropriate analysis compares recent immigrants to “like” Canadian-born, along dimensions such as age, education, visible minority status, marital status and region of employment (including major city). This is typically done within a regression format that computes the log of the ratio of the earnings of immigrants to those of the Canadian-born. The results of such an analysis by Frenette and Morissette (2003) are given in Chart 2. The log earnings ratio is an approximation of the earnings of immigrants as a proportion of those of comparable Canadian-born when the differences are small (say 10% to 20%), but when they become large (say 40% to 50%) the log (earnings ratio) over-estimates the percentage difference.

This analysis provides a somewhat different picture (panel A of Chart 2). As in Chart 1, the earnings gap has been increasing significantly with each successive cohort, both at entry and after many years in Canada. However, this increase is greater after accounting for the differences between immigrants and Canadian-born. Among males, the log earnings ratio at entry declined from .83 among the late 70s cohort to .55 among the early 90s cohort. Furthermore, in this analysis, one sees only a minor improvement in the earnings gap at entry between the cohorts of the early and late 1990s (log earnings ratio increased from .55 to .60). The relatively little improvement seen here compared to Chart 1 is likely because the late 90s cohort was much more highly educated. After accounting for this higher education level and the associated higher

---

3. i.e., earnings of immigrants in Canada for 5 years or less.

earnings expectation, little improvement in entry level earnings is observed. The earnings gap at entry remained much greater than among the cohorts of the 1970s or 1980s.

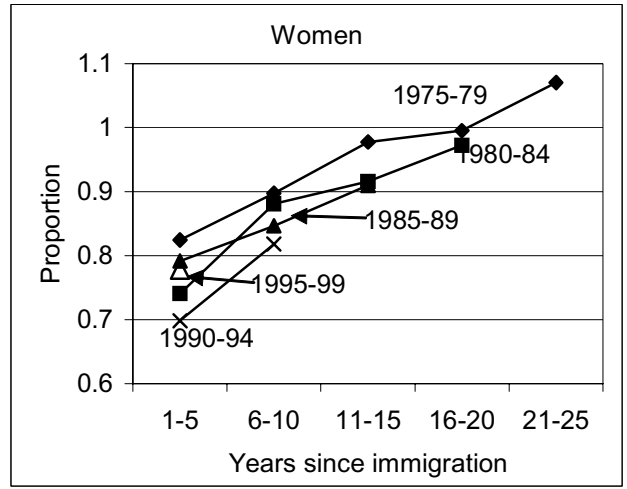
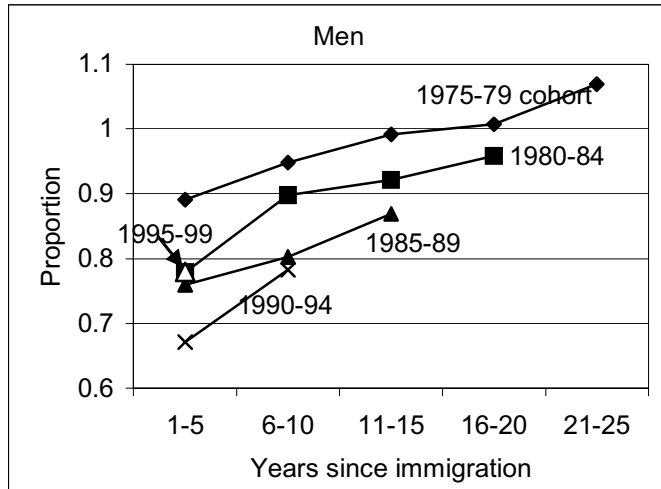
As noted earlier, the traditional “economic assimilation” story among immigrants is that they earn less at entry, but after a number of years in Canada the earnings gap with comparable Canadians narrows, or disappears (Carliner, 1981; Chiswick, 1978; Borjas, 1985; Meng, 1987). In Chart 2, the traditional pattern is observed among cohorts entering in the late 1970s, but this is the last cohort to display any signs of eliminating the earnings gap after many years in Canada. Even among this cohort, earnings do not surpass the earnings of the Canadian-born (as they did in Chart 1), but they do almost catch-up, reaching about 97% of the earnings of “like” Canadian born after more than 20 years (Chart 2). But among the more recent cohorts, elimination of the earnings gap will be more difficult. The cohorts entering during the 1980s, even after 16 to 20 years in Canada were earning approximately 85% of their Canadian counterparts (Chart 2). For the 1990s cohort, after 6 to 10 years in Canada, the early 1990s cohort was earning roughly 70% (log earnings ratio of .7) of Canadians. It is not clear that they can “catch-up” to Canadians in 20 years. Again, the pattern is similar for women.

However, it is important to note that the greater the earnings gap at entry, the faster the improvement in earnings (Chart 2). Hence, the rate of improvement in earnings (i.e., the slope of the line in Chart 2) was much greater among the 1990-1994 cohort than the 1980s cohorts. In spite of this, however, earnings remained lower among the more recent cohorts than among earlier cohorts, no matter how long they had been in Canada.

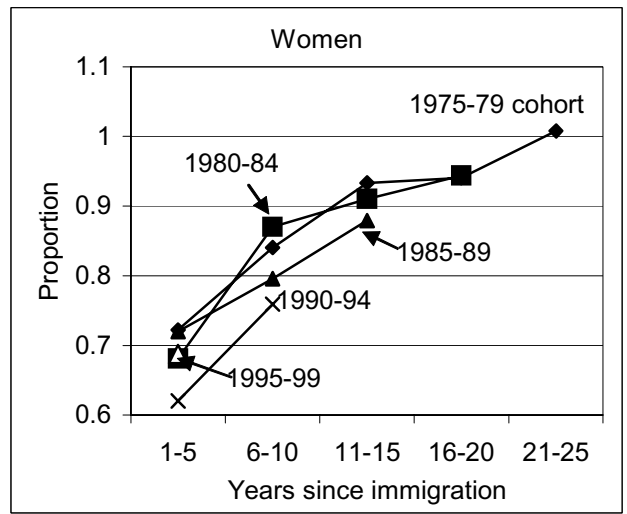
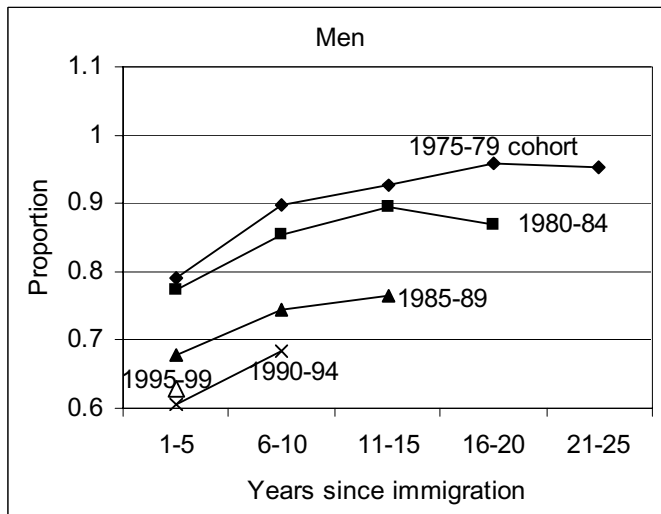


Chart 1: Earnings of Immigrants as a Proportion of Those of Canadian-Born  
 - no controls for differences between the two populations -

A. Full-time Full-year Workers Aged 16 to 64



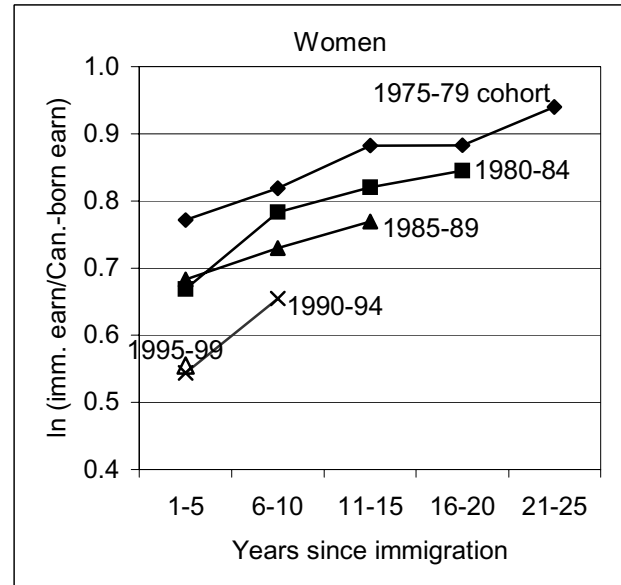
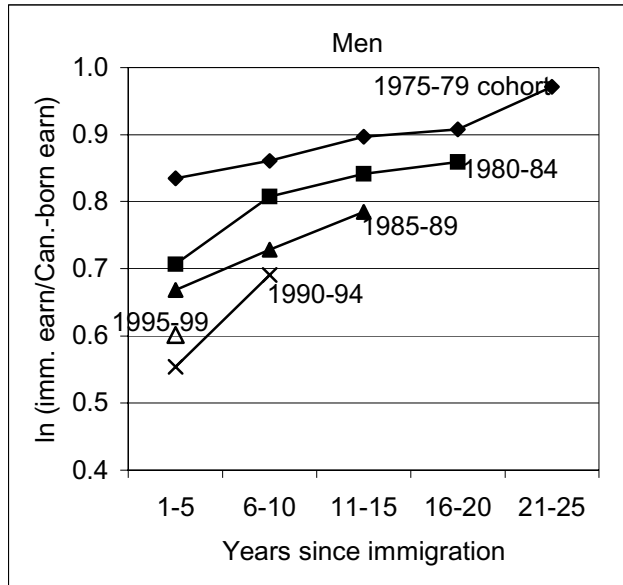
B. University Bachelors Degree Graduates, FTFY Aged 16-64



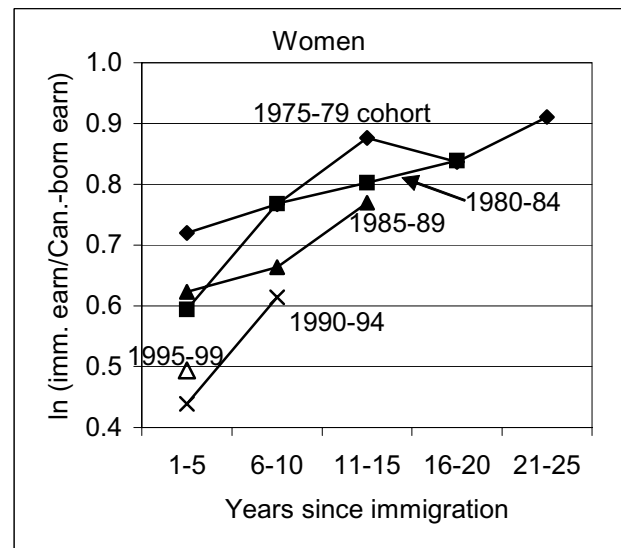
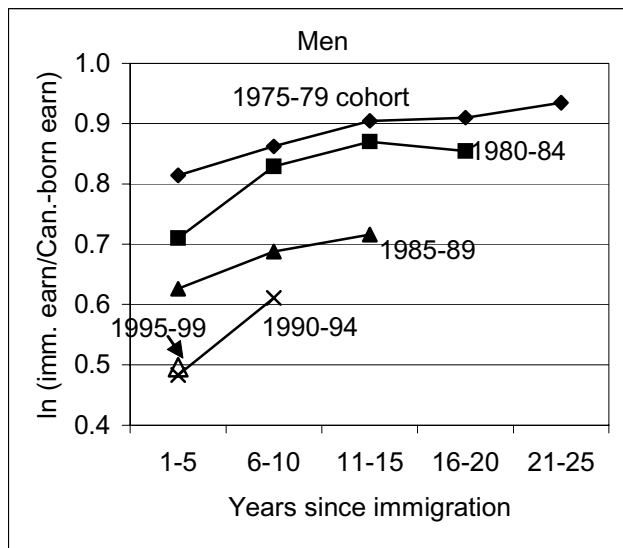
Source: Frenette and Morissette, 2003

Chart 2: Log Earnings\* Ratio\*\*: Earnings of Immigrants Compared to Those of Comparable Canadian-Born

A. Full-time Full-year Workers Aged 16 to 64



B. University Bachelors Degree Graduates, FTFY Aged 16-64



\* Predicted values based on a model controlling for education, estimated work experience, visible minority status, marital status, and regions (including the major cities).

\*\* The  $\ln$  (immigrant earnings/Canadian-born earnings). For small differences in earnings (10% to 20%), the  $\ln$  earnings ratio is an approximation of the earnings of immigrants as a proportion of those of Canadian-born. For large differences (e.g., 40% to 50%), the log earnings ratio tends to overestimate the percentage difference.

Source: Frenette and Morissette, 2003

## 2.1 Earnings declines at Entry were as Great Among the University Educated

The bottom panels of Charts 1 and 2 display similar results for immigrants with bachelors degrees. Among men working full-time full-year, immigrants entering during the late 70s earned about 82% of their Canadian-born counterparts (log earnings ratio of .82, controlling for estimated years of work experience, and geographical region of employment). By the 1990s, the log earnings ratio had fallen to around .5. Some minor improvement was observed between the early and late 1990s, but relative entry level earnings remained well below that of the cohorts of the 1970s or 1980s. Once again, the pattern is similar for women. “Recent” immigrant university graduates were increasingly unable to convert their education and experience into earnings in the way that earlier cohorts had. As with all immigrants, however, the larger the earnings gap at entry, the faster the growth in earnings (with years spent in Canada).

## 3. The Deteriorating Low-Income Position of Recent Immigrants

Earnings represent the major income source for most families, so it is not surprising that the decline in relative entry level earnings is reflected in the low-income rates. The proportion of recent immigrants with family incomes below the low-income cutoff<sup>4</sup> rose from 24.6% in 1980, to 31.3% in 1990, and 35.8% in 2000. These years are roughly at business cycle peaks, and hence are reasonable indicators of longer-term trends. During this period, the low-income rate among the Canadian-born fell, from 17.2% in 1980 to 14.3% in 2000. Hence, it was not a general deterioration in economic conditions affecting all Canadians that was responsible for the rising low-income rates. Recent immigrants had low-income rates 1.4 times that of Canadian-born in 1980, and by 2000 this had increased to 2.5. There was improvement between 1995 and 2000 in the low-income rate among recent immigrants (falling from 47.0% to 35.8%). However, most of this change did not represent a longer-term trend in improved outcomes, but simply the expected decline during a very strong economic recovery. The *relative* low-income rate of recent immigrants (relative to Canadian born), improved only marginally (falling from 2.7 to 2.5 times higher). This deterioration in low-income rates over the past 20 years was not restricted to recent immigrants. It was observed among all immigrant groups, no matter how long they have resided in Canada (Table 1), with the exception of immigrants living in Canada for more than 20 years.

Table 1. Low-income rates by immigration status, Canada, 1980-2000

	Low-income rate*									Low-income rates relative to Canadian-born				
	Total population	Non-immigrants	All immigrants	Years of residence in Canada					All immigrants	Years of residence in Canada				
				<= 5	6 - 10	11-15	16-20	> 20		<= 5	6 - 10	11-15	16-20	> 20
1980	0.171	0.172	0.170	0.246	0.187	0.144	0.147	0.167	1.0	1.4	1.1	0.8	0.9	1.0
1985	0.187	0.185	0.193	0.342	0.260	0.198	0.159	0.165	1.0	1.8	1.4	1.1	0.9	0.9
1990	0.155	0.151	0.171	0.313	0.242	0.190	0.152	0.126	1.1	2.1	1.6	1.3	1.0	0.8
1995	0.191	0.176	0.247	0.470	0.353	0.272	0.221	0.155	1.4	2.7	2.0	1.6	1.3	0.9
2000	0.156	0.143	0.202	0.358	0.283	0.227	0.191	0.133	1.4	2.5	2.0	1.6	1.3	0.9

\* After transfer, before taxes; based on the 1992 LICO updated for change in CPI only.

Data sources: the 1981 to 2001 Censuses (20% sample data);

Source: Picot and Hou, 2003

4. Statistics Canada’s after transfer, before tax LICO (Low-Income Cutoff) is used, since taxes paid are not available in the census data.

The deterioration in family economic welfare among recent immigrants may have been concentrated among particular groups. However, Picot and Hou (2003) concluded that, by and large, this was not the case. The increasing low-income rate was observed among all education groups, all age groups, all family types, and those whose home language was either French/English, or “Other”. Source region was the one dimension along which some differences were observed. The low-income rate actually fell between 1980 and 2000 among recent immigrants from a few source regions, such as the U.S., Western Europe, Southeast Asia, and the Caribbean (even after controlling for differences over cohorts in education, home language, family type, and age). However, among the source regions from which three quarters of all recent immigrants originated in 2001, rates were rising (Table 2). This included most parts of Asia, Northern, Eastern and Southern Europe and Africa. These results suggest that some factor (e.g., recognition of work experience or schooling, language skills, school quality, etc.) associated with source regions may play a significant role in the declining economic outcomes of immigrants. More of this later.

Source region	Raw data	Controlling for age, education, language, family type
Southeast Asia	-35%	-25%
Western Europe	-24%	-16%
U.S.	-18%	-12%
Caribbean	-2%	-5%
South & Central America	-2%	+1%
Northern Europe	+14%	+24%
Eastern Europe	+22%	+34%
Western Asia	+52%	+64%
Southern Europe	+61%	+115%
East Asia	+68%	+90%
South Asia	+82%	+86%
Africa	+121%	+94%
Source: Picot and Hou, 2003		

Given the widespread nature of the rise in low income, it is not surprising that Picot and Hou (2003) conclude that less than one-half, and quite possibly much less, of the rise in low-income rates among recent immigrants was associated with their changing characteristics as measured in the census data. They could not be more precise because of limitations of the analytical techniques used to determine this effect. The paper focused on the changing mix of immigrants by source region, education, home language, age, and family status. More is said of this finding in the summary discussion at the end of this paper.

Just as the earnings results reported above focused on university graduates, so too did the low-income analysis. Although recent immigrants with university degrees had lower levels of low-income than, say, those with a high school diploma, the rate of increase in low-income during the 1990s was higher among the university-educated immigrants. Among adults with high school

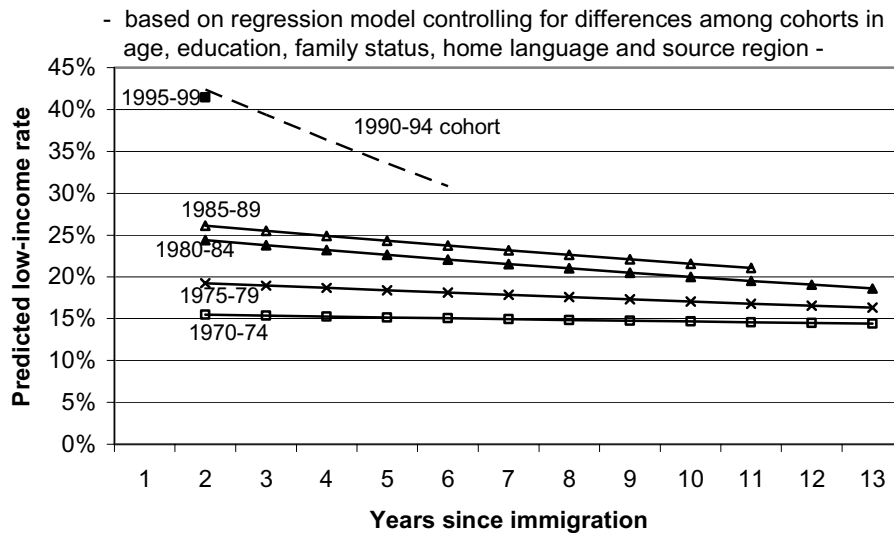
graduation as the highest education level, the rate rose 25%. Among university-educated *recent* immigrants, it rose from 19.1% in 1990 to 27.5% in 2000 (Table 3), an increase of 44%. And there seemed to be no major difference by degree type. Among engineering and applied science degree holders aged 24 to 44, low-income rates rose from 14.7% in 1990 to 24.2% in 2000, in spite of the technology boom that was in place leading up to 2000. In 1990, these recent immigrant degree holders had low-income rates 4.6 times that of their Canadian-born counterparts, by 2000 this was 7.0 time higher. Similar stories are observed for other disciplines. For example, among prime age recent immigrants with teaching, social sciences and commerce degrees, rates rose from 18.2% to 27.7%.

Highest education level	1990	2000	% change in rate, 1990-2000
Less than high school	34.3	38.4	13.1%
High school graduate	31.0	38.8	25.2%
Some post-secondary	26.4	33.7	27.6%
University degree	19.1	27.5	44.0%
Source: Picot and Hou, 2003			

The focus to this point has been on the outcomes for immigrants at entry. What happens as they reside in Canada for a number of years? It was noted earlier that the earnings gap (with Canadian-born) does narrow.

Similar patterns are observed regarding low-income rates. Chart 3 shows the predicted low-income rate at entry for cohorts entering between the early 1970s and late 1990s, as well as the change in this rate with years since immigration (based on a regression model that accounts for differences among cohorts in education, age, marital status, home language and family type). Rates do fall with years since immigration, and perhaps more importantly, the higher the low-income rate at entry, the faster the decline (improvement) in the rates. Hence, there are signs that there is some “catch-up” among the 1980s and 1990s cohorts with earlier cohorts regarding low-income rates. However, in no way is the gap between these groups erased. The low-income rate among immigrants entering during the 1980s and early 1990s remains well above that of earlier immigrants, no matter how long they have been in Canada.

**Chart 3. Predicted Low-Income Rates of Immigrants, Various Cohorts**



Source: Picot and Hou, 2003

### **3.1 The Rise in Low-Income Rates in Canada’s Largest Cities was Heavily concentrated Among Immigrants**

A dichotomy appears to have developed regarding low-income rates in Canada, rising among immigrants, and declining among Canadian-born. Overall, the low-income rate among Canadian born fell from 17.2% to 14.3% between 1980 and 2000. Even among groups that one traditionally associates with low-income issues, the rate has been falling. Over the same period, the low-income rate fell by 12.5 percentage points among Canadian-born seniors, by 16 percentage points among lone-parent families, and remained virtually unchanged among Canadian-born young families. As noted earlier, among immigrants (with the exception of those in Canada for more than 20 years) the rate rose.

This fact, combined with the fact that immigrants, particularly recent immigrants, constitute a rising share of the population of the major cities in Canada, suggests that any change in the low-income rate in these cities may be heavily concentrated among immigrants. Picot and Hou (2003) confirm that this is the case. In Canada’s three largest cities, where the vast majority of recent immigrants settle, the low-income rate increased between 1990 and 2000. It rose 1.9 percentage points in Toronto, 3.1 points in Vancouver, and only 0.3 points in Montreal. This was in spite of the fact that economic conditions in these cities were similar or much stronger in 2000 compared to 1990. The unemployment rate declined from 10.5 to 7.7 in Montreal, from 7.5 to 5.9 in Vancouver, and rose marginally from 5.2% to 5.5% in Toronto.

In this environment, virtually all of the rise in the low-income rate was concentrated among the immigrant population (Table 4). Two factors contribute to this upward pressure on the cities low-income rate: (1) the fact that immigrants constituted an increasing share of the population (recent

immigrants in particular), and they traditionally have had higher low-income rates than the population in general, and (2) the rise in the low-income rate among immigrants. Combined, these factors tend to increase Toronto's low-income rate by 2.8 percentage points between 1990 and 2000 (Table 4). Most of this increase was associated with immigrants who had been in Canada ten years or less. This tendency towards an increase in the city's rate was somewhat offset by a decline in rates among the Canadian-born, which tend to reduce the cities low-income rate by 0.9 percentage points. The end result was an increase in Toronto's low-income rate of 1.9 percentage points. A similar story holds for the other two cities. In Vancouver, the changing low-income position among immigrants (and their increasing population shares) tend to push up the cities low-income rate by 4.7 percentage points. This was partially offset by changes among the Canadian-born population, which reduced the rate by 1.7 points, resulting in a rise of 3.1 points for the city overall.

City	Change in cities low-income rate	Change associated with*:	
		Non-immigrants	Immigrants
Toronto	1.9 percentage point	-0.9 p.p.	2.8 p.p.
Vancouver	3.1 p.p.	-1.7 p.p.	4.7 p.p.
Montreal	0.3 p.p.	-1.1 p.p.	1.4 p.p.
* The change associated with immigrants can result from both the rising share of immigrants (particularly recent immigrants) in the cities, as well as the rise in low-income rates among immigrants. Each group-specific change is its contribution toward the overall city rate.			
Source: Picot and Hou, 2003			

For Canada as a whole, there was little change in the low-income rate during the 1990s. This was the result of two offsetting trends; changes among the Canadian-born tend to push down the rate by 1.0 percentage points, and changes among immigrants tended to increase it by 1.0 points.

However, one should recall that we are discussing *change* in low-income rates. If one concentrates on the *level* of low-income, immigrants still hold a minority, although increasing, position. In 2000, 28.5% of the low-income population were immigrants, up from 20% in 1980.

#### **4. Why the Decline in Relative Entry Level Earnings, and Rising Low-Income Among Recent Immigrants?**

Researchers have, for some time, been attempting to determine the cause of the decline in entry level earnings in particular. There is no shortage of possible explanations, however not all have been found to be empirically important. While we do not fully understand the mechanisms by which earnings have fallen, several recent studies are in broad agreement that particular issues have sizeable impacts while other issues are less important. This short outline can do justice to neither the economically significant explanations, nor to the various other related issues that have been explored, and interested readers are advised to read the papers referenced for fuller

explanations. It is also worth mentioning at the outset that these various explanations are neither exhaustive nor mutually exclusive. Moreover, we are primarily interested in explaining a *decline* – some factors may be associated with poor outcomes, but if there has been no change in the level of the factor, or the way it is remunerated in the labour market, it cannot be said to be associated with the decline.

#### **4.1 a) The Changing Characteristics of Immigrants Entering**

As is well known, immigrants are entering Canada from very different countries now than was the case in, say the 1970s. Between 1981 and 2001, a decreasing share of immigrants came from the U.S, Northern Europe, Southern Europe, the Caribbean, South and Central America, and Southeast Asia. The share of “recent” immigrants from these areas fell from 65% to 28%. Regions increasing their shares included Eastern Europe, South Asia (India, Pakistan), East Asia (China, Korea, Japan), Western Asia (Iraq, Iran, Afghanistan) and Africa. Collectively, the share of recent immigrants from these regions rose from 35% in 1981 to 72% in 2001. Immigrants from these source regions may have lower earnings at entry, even with comparable levels of education and experience. Their human capital may initially be less transferable due to potential issues regarding language, cultural differences, education quality, and possibly discrimination.

#### **4.1 b) Other Factors Possibly Associated with the Shift to the Newer Source Regions: Education Quality, Language Skills and discrimination**

Related to the broad concept source countries or regions, there have been changes in the characteristics of immigrants that are associated with the decline in entry earnings; for example, fewer entering immigrants have a home language, and mother tongue, that is either English or French (although unfortunately we do not have measures of actual language ability at entry). Language and communication skills are related to productivity, and hence the wages of workers; any decline in language skills among entering immigrants can, therefore, clearly affect earnings. Studies such as those by Baker and Benjamin (1994), Frenette and Morissette (2003), and Aydemir and Skuterud (2004, 2005)<sup>5</sup> suggest that perhaps one-third of the decline in entry level earnings is associated with these changing characteristics of entering immigrants, particularly the shift in source regions and home language. This is an important amalgam of factors that together explain about a third of the observed decline in earnings. However, it is very difficult to disentangle the highly interrelated set of characteristics, such as language ability and visible minority status, associated with changing source countries.

Unfortunately, while we have good data on self-reported current home language, and mother tongue, good quality data on change through time in the language skills (in either official language) of recent immigrants does not exist. Hence it has been difficult for researchers to assess the impact using objective measures of language skills. Even if conversational skills appear adequate, it may be that immigrants’ ability to work in either of the official languages when performing more complex tasks has declined among entering immigrants. A recent paper by Ferrer, Green and Riddell (2003) uses data on language skills as measured by a test of adult

---

5. Note that the first of these is more detailed, but focuses only on males whereas the subsequent paper address outcomes for both sexes.



literacy and finds clear differences between immigrants and the Canadian born at the survey date. With or without taking education into account, immigrants have, on average, poorer English and French language skills by this measure. This does not imply that all immigrants have poor skills, or that some immigrants do not fair better than some Canadian-born test takers, but the distribution of immigrants scores is usually lower than the distribution of scores for the Canadian born. However, the paper goes further and asks whether the *decline* in returns to foreign experience (discussed later) may be related to increased relative (to younger immigrants) literacy or numeracy issues among older immigrants by looking at immigrants from different entry cohorts at a point in time. Despite using detailed data with test scores on literacy and numeracy, Ferrer, Green and Riddell find little evidence to support this notion.

Increased ethnic, racial or cultural discrimination is also possibly related to changing source countries; the number of immigrants who are visible minorities has increased significantly. Here again, the data to reliably estimate the effect of this factor, and changes in its importance over time associated with the observed decline in earnings, are scarce, although there is evidence of ethnic discrimination in society more broadly. It may be that some of these issues (e.g., language or discrimination) are more prevalent among immigrants from the more recent source countries (Eastern Europe, Asia, Africa), and a shift to immigration from these countries has increased the importance of these issues for immigrants as a whole, resulting in a decline in entry level earnings. If this were so, then the effects would be picked up in the type of statistical analysis reported above, which indicated that roughly one-third of the earnings decline is related to the changing composition of immigrants by source country and other factors.

#### **4.2 The Returns to Years of Schooling and the Credentialism Issue**

Immigrant average economic returns to schooling relative to the Canadian born appear to have been fairly stable in recent years (Ferrer and Riddell, 2003, Aydemir and Skuterud, 2004, 2005).<sup>6</sup> These returns are lower than that of the Canadian born, and vary with whether the immigrant was educated in Canada or not (e.g. McBride and Sweetman, 2003), but they have probably not changed very much over the past two decades. (Schaafsma and Sweetman (2001) show that those who arrive young and are educated in Canada have returns to education comparable to, or higher than, the Canadian born, but those who arrive later in life tend to have quite low returns. Hence our current understanding of the evidence is that the economic value of education cannot explain much of the decline in earnings over time. Still, it is a topic worth discussing in some detail.

Researchers studying the credentialism issue have posed the question in a slightly different manner from that mostly commonly observed in economic analysis, which focuses on years of schooling. They ask, after accounting for years of schooling, how much is the fact of having the university credential (i.e., degree) itself worth to an immigrant. This is referred to as the “sheepskin” effect. Is the earnings advantage of having a university degree (relative to not having it) changing? This credentials concern has been expressed for a number of years. However, to contribute significantly

---

6. Note that the studies in question normally interpret the “economic return” to education to mean the percentage increase in earnings associated with an additional year of schooling (or credential). These estimates can be interpreted as ignoring the direct costs of education, but taking into account the value of foregone employment earnings while in school (i.e., the opportunity cost of education).

to the *decline* in entry level earnings, this effect would have to have become more important in recent years.

Based on recent evidence from two sets of authors (Ferrer and Riddell, 2003, Aydemir and Skuterud, 2004, 2005) and consistent with that of others, it seems that the return to education for individuals within source countries has not declined. Individuals from non-traditional source countries do receive a lower return to their years of schooling (independent of degree completion) than those from traditional source countries, but workers from those same countries receive a larger economic return from degree completion. Thus the change in the mix of source countries is not associated with much of the overall decline in earnings. Partly, the lack of impact of education on the aggregate decline in economic outcomes follows from many immigrants receiving their education in Canada and, therefore, having the same, or higher, economic return to education as the Canadian born, and from the nature of the economic value of educational degrees/certificates, as opposed to years of study, for immigrants.

Ferrer and Riddell's research, in particular, focuses on the "sheepskin" effect; the value of a university degree itself (independent of the number of years of schooling required to obtain the degree, but the fact of having this credential). The research does not distinguish between degrees in fields that are licenced (e.g., medicine and engineering) and those that are not (e.g., history and economics). Nonetheless, the results are very instructive. Overall, they find that having a degree increases immigrants' earnings significantly (relative to not having a degree), and that this effect is at least as strong or stronger for immigrants than for the native born. However, they conclude that this credential advantage has changed little since the early 1980s for immigrants. The only evidence of a change is that the value of postgraduate certification has *increased, not decreased*, for immigrants who landed more recently. They do find that immigrants from non-traditional source countries have a lower return to years of schooling (independent of completion), but the "changing composition of immigration is therefore resulting in imported human capital that is less valued on one dimension (years of schooling) and more valued on the other (credentials)" (Ferrer and Riddell, 2003, p. 20).

Overall, this suggests that, across all disciplines, the "credentialism" issue has not worsened (although it may or may not have in specific fields). Degree holders have not been exempt from the deterioration in earnings outcomes, however the decline is not obviously associated with credential recognition or changes in the value of foreign education in the Canadian labour market. This does not imply that policy should not be focussed on improving credential recognition. The economic return to education for immigrants educated outside of Canada is clearly lower than that for the Canadian born or for immigrants educated in Canada, and government programs may improve the return to foreign education if the "recognition" problem is substantial. However, these programs should be aware that they are addressing a problem that has been close to stable for at least two decades.

There are other, usually immeasurable, effects that are also associated with the economic return to education. One factor, for example, relates to the variety that exists in the "quality" of education systems across countries. Sweetman (2003) has attempted to focus on this issue by using the test scores from international literacy and numeracy surveys to proxy for the quality of a country's education system. He finds support for the notion that lower school quality is associated with lower

returns to education for immigrants educated prior to landing in Canada. (Those who arrive at a young age and are educated in Canada are unaffected by the quality of their source country's educational system.) This implies that not all superficially similar degrees are of equal value in the labour market and points to the complexity of the policy issue.

### **4.3 Declining Returns to Foreign Labour Market Experience**

Another factor that is taking on increasing importance is referred to as “declining returns to foreign experience”. Human capital consists largely of education/training and the skills developed through work experience. One typically expects some return to this human capital when entering employment, but immigrants from non-traditional source countries receive close to zero economic benefits from pre-Canadian potential labour market experience. Importantly, “potential” is a key word in the formulation of the measure of labour market experience employed in all recent studies. Actual labour market experience is not measured in the data, so “potential experience” is calculated as “age – years of schooling – 6” (or minus 5 in some studies). Put another way, therefore, one could think of the phenomenon of declining returns to foreign labour market experience as being associated with an earnings decline at entry among older immigrants. Age could be employed instead of potential experience to address this issue, but the latter fits the data better since it appears to be post-schooling labour market experience that matters for employment earnings (among those for whom it does matter).

A number of recent studies indicate that the foreign work experience of entering immigrants is increasingly discounted in the Canadian labour market (Schaafsman and Sweetman, 2001; Green and Worswick, 2002; Frenette and Morissette, 2003; Aydemir and Skuterud, 2004, 2005). Older immigrants entering Canada, who in the late 70s or early 80s earned significantly more than their younger counterparts, presumably because of their experience (controlling for education etc.), now have much less of an advantage. Their foreign work experience appears to be more heavily discounted now as compared to say twenty years ago. Relatedly, Schaafsma and Sweetman (2001) observed that age at immigration is a very important predictor of the earnings of immigrants. Using Census data from 1986 to 1996, they found that older workers experienced, on average, lower returns to both foreign labour market experience and foreign education than both the Canadian born and Canadian educated immigrants who land at a young age. As part of the research program initiated by the research arm of Citizenship and Immigration Canada, Green and Worswick (2002) observed that returns to foreign experience were falling for successive entering immigrant groups. Moreover, the credibility of the finding was enhanced since they made the same observation using a different data set. Their data allowed immigration category to be observed, permitting them to extend the analysis. They observed this effect among both family and economic classes, so it is not driven by a shift in immigrant class.

Green and Worswick (2002) concluded that the declining returns to experience is one of the major factors, if not the most important, associated with the decline in earnings among recent immigrants. Subsequent work by Aydemir and Skuterud (2004, 2005), and Frenette and Morissette (2003) provide support for this notion. Both sets of authors observe that between 1980 and 2000, earnings did not in fact decline among very young “recent” immigrant workers (age 25 to 29), and that the decline was concentrated among male immigrant workers over age 30. Green and Worswick, when first observing this effect, suggest that it may be related to both the shift in the composition of

immigrants towards those from source countries from which it is more difficult to evaluate the benefits of the foreign experience, and a decline in the returns to foreign experience *within* source regions. However, they conclude that this decline in returns to foreign experience is not evident among immigrants from the traditional source regions (e.g., Northwestern Europe, the English-speaking countries) and is concentrated among immigrants from the newer source regions. Aydemir and Skuterud find much the same; the decline in returns to foreign labour market experience are observed only among immigrants from the “non-traditional” source regions, notably Eastern Europe, Asia, and Africa. Aydemir and Skuterud find that foreign experience has become almost worthless in the Canadian labour market for immigrants from these regions.

Why the decline in returns to foreign experience within source regions? There is little hard evidence on this point. As noted above, Ferrer, Green and Riddell asked if it was related to relative literacy competencies between younger and older workers, and found that this accounted for little of the effect. Others have discussed the possibility of an emerging technology divide. The experience acquired with the technologies used in the Eastern European and Asian countries may not be directly applicable to the Canadian workplace, and hence the discounted returns to experience. This effect could be increasing in importance as technologies change more rapidly in more advanced countries like Canada. It may also be that with a rapidly rising supply of highly-educated workers in Canada (see point below), employers have less incentive to take the time to evaluate the foreign experience (and years of schooling) of immigrants, particularly the highly educated. Thus, the experience and schooling is somewhat discounted. This is speculation at this point.

Aydemir and Skuterud conclude that, among recent immigrants, the decline in the return to foreign experience accounts for roughly one-third of the decline in entry level earnings reported earlier.

#### ***4.4 Deteriorating Labour Market Outcomes for New Labour Market Entrants in General, of Which Immigrants are a Part***

Labour market outcomes for young labour market entrants, particularly males, have been deteriorating in Canada through the 1980s and 1990s. Earnings of young men have been falling through these decades (Picot, 1998; Beaudry and Green, 2000). Entering immigrants are themselves new labour market entrants, and it may be that whatever is causing the decline in earnings of the young in general (and that is not well understood) may be also affecting the earnings of “recent” immigrants. Green and Worswick find that, for recent immigrant men, this may account for 40% of the decline in entry level earnings. They also find, however, that this effect was concentrated in the 1980s; it was less important for the 1990s. Frenette and Morissette also conclude that this is a significant factor, as do Aydemir and Skuterud.

#### ***4.5 Fluctuations in Macro-Economic Conditions***

Canada experienced two severe recessions during the early 1980s and 1990s. It was during the early 1980s that a major decline in entry level earnings was first observed. Furthermore, the position of recent immigrants declined very significantly again in the early 1990s, when immigration levels remained high during the recession. This has caused a number of researchers to speculate that changing macro-economic conditions played a major role in the earnings trends. Bloom and Gunderson (1991), and McDonald and Worswick (1998), noted the effect of the

business cycle on immigrant earnings, and the latter concluded that immigrants are more negatively affected by recessions than are the Canadian-born. In a 1997 paper on unemployment rate differentials between immigrants and Canadian-born, McDonald and Worswick (1997) conclude that the unemployment gap is much larger in recessions, and much less, or near zero in expansions. However, Reitz (2001) concluded that fluctuations in macro-economic conditions could not fully explain the general downward trend in immigrants' economic performance.

Aydemir (2002), focusing on employment and participation rate declines among immigrants (not earnings) concludes that macro-conditions (as measured by the unemployment rate) accounted for up to 50% of the decline in the participation rate among immigrants in the recession of the early 1990s, and less of the decline in the employment rate. There was a substantial deterioration in economic outcomes (participation and employment rates) even after accounting for macro-economic conditions. During the last half of the 1990s economic conditions improved dramatically; by 2000 unemployment fell to lows not seen in over 20 years. The relative earnings of immigrants (relative to comparable Canadian-born) improved marginally, but remained far below the levels observed in the 1970s, or even in the 1980s (as noted above). Hence, it seems unlikely that macro-economic conditions account for all or even most of the long-term decline in the relative earnings of recent immigrants.

#### **4.6 Strong Competition from the Increasingly Highly-Educated Canadian-Born**

The supply of highly-educated workers in Canada has been increasing at a very rapid pace. The number of women in the labour force with a university degree quadrupled over just 20 years. For every woman in the labour force with a degree in 1980, there are now four. The number of men more than doubled. In studies on the “wage premium” associated with a university degree (i.e., the earnings of university graduates compared to high school graduates), it has been observed that, in general, this premium has increased significantly in the U.S., but little in Canada over the past twenty years<sup>7</sup> (Burbidge et al., 2002). In the face of an apparently increasing demand for more highly-educated workers, why have the relative wages of university graduates risen in the U.S. but not in Canada? Two high profile papers argue that it is differences in the supply of highly-educated workers; this supply (relative to the high school educated) has been increasing much more rapidly in Canada than in the U.S. (Freeman and Needels, 1993; Murphy, Romer and Riddell, 1998).

Reitz (2001) argues that in spite of the rising educational levels of immigrants, their *relative* advantage in educational levels has declined as a result of the more rapidly rising levels of education among the Canadian born. He also argues that immigrants did not benefit to the same extent as Canadian born from increases in education. This fits with other findings that suggest that although the “sheepskin” effect (the fact of having a degree) has not diminished among immigrants, the returns to years of education have been falling among “recent” immigrants, and that if anything, labour market outcomes among university educated immigrants has been declining faster than among others (controlling for age), as noted above. It may be that in a very competitive labour market for new entrants foreign experience and years of schooling from the “new” source countries are increasingly discounted, and that language and other factors

---

7. The wage premium has been increasing in recent years among the young in Canada, however.

associated with the new source regions place “recent” immigrants, even the highly educated, at a relative competitive disadvantage.

#### **4.7 Changes in Social Transfer Usage and Other Income Sources**

The abovementioned reasons may influence the earnings of immigrants, but low-income rates can be affected by other factors as well. Changes in the availability or use of the social transfer system (social assistance, employment insurance, etc.) by immigrants can obviously affect low-income rates. It may also be that income inequality has changed among the immigrant population. Most of the earnings analysis relates to mean or median earnings. Rising levels of family income inequality, unemployment or possibly a discouraged worker effect could result in increasing low-income rates, above and beyond that expected based on changes in mean family earnings. Little recent research has been done on these issues, but Crossley, MacDonald and Worswick (2001) do not find any evidence of increasing social assistance or unemployment insurance use between 1981 and 1994.

### **5. Conclusion**

The economic welfare of recent immigrants deteriorated through the 1980s and 1990s. It seems unlikely that the rate of economic assimilation will be such as to allow many of these immigrants to achieve earnings or low-income rate levels comparable to the Canadian born, or even those of earlier immigrant cohorts (Frenette and Morissette, 2003). Reasons for this decline are numerous, and are not, of course, necessarily independent of one another, but some issues have been found to be quite empirically important, while others are not observed to contribute much to the decline. Three central factors are found to be crucial. First, the changing composition of source countries, mother tongue and/or language used at home, visible minority status and other related issues are associated with about one-third of the decline. It is worth noting that this set of factors is so highly inter-correlated that it is difficult to separate the independent influence of each in the data that are commonly available. Second, there has been a substantial decline in the economic return to pre-immigration potential labour market experience for those from non-traditional source countries. This explains about another third of the decline for men, and slightly less for women. An implication of this phenomenon is that age at immigration is becoming increasingly important for labour market outcomes, with those who arrive at an older age having poorer outcomes. Third, there has been a very general decline in labour market outcomes for new entrants to the labour market, especially males. Immigrants, regardless of their age at arrival, appear to be treated like new entrants by the labour market. This accounts for at least another third of the observed decline. Related issues are the long-term labour market impact of immigrants arriving during a recession, and that immigrants appear to have labour market outcomes that are more sensitive to the business cycle than the Canadian born.

Perhaps surprisingly, there is no evidence that there has been a decline in the economic returns to education. For some sub-groups of the immigrant population, the economic value of a graduate degree appears to have even increased in the last two decades. Immigrants do have somewhat lower returns to education obtained outside of Canada, but this has been the case for the entire period for which data are available. Moreover, immigrants who are educated in Canada have economic returns to that education that are at least as great as that for the Canadian born. This

does not necessarily imply that education and credential recognition programs are not useful – there is an existing gap. But, it does point to the nature of the issue being addressed, and to the limits of these programs effects.

Overall, increased competition from domestic labour sources, combined with a shift in the source regions of immigrants may together result in a reduced ability of immigrants to convert their experience into earnings. It may also be that declining returns to foreign experience, decreasing language ability (if this is the case, which is largely unmeasured) and changes in discrimination may themselves be related to changes in source country. While the debate over the possible reasons for the decline in immigrant labour market outcomes will undoubtedly continue, great progress has been made in understanding some aspects of the sources of the decline and in ruling out others factors.

## **References**

- Abbott, Michael G. and Charles M. Beach. 1993. "Immigrant earnings differentials and birth-year-effects for men in Canada: post-war-1972." *Canadian Journal of Economics*. 25: 505-524.
- Aydemir, Abdurrahman. 2003. "Effects of Business Cycles on the Labour Market Assimilation of Immigrants." Analytical Studies Research Paper Series. Catalogue No. 11F0019MIE2003203. Ottawa: Statistics Canada.
- Aydemir, Abdurrahman and Mikal Skuterud. 2004. "Explaining the Deteriorating Entry Earnings of Canada's Immigrant Cohorts: 1966-2000." Analytical Studies Research Paper Series. Catalogue No. 11F0019MIE2004225. Ottawa: Statistics Canada.
- Aydemir, Abdurrahman and Mikal Skuterud. 2005 "Explaining the Deteriorating Entry Earnings of Canada's Immigrant Cohorts: 1966-2000." *Canadian Journal of Economics*. 38: 641-72.
- Baker, Michael and Dwayne Benjamin. 1994. "The performance of immigrants in the Canadian labour market." *Journal of Labor Economic*. 12: 369-405.
- Beaudry, Paul and David Green. 2000. "Cohort patterns in Canadian earnings: assessing the role of skill premia in inequality trends." *Canadian Journal of Economics*. 33: 907-936.
- Bloom, David E. and Morley Gunderson. 1991. "An analysis of the earnings of Canadian immigrants." In John M. Abowd and Richard B. Freeman (eds.), *Immigration, Trade and the Labour Market*. Chicago: The University of Chicago Press.
- Borjas, George J. 1985. "Assimilation, changes in cohort quality, and the earnings of immigrants." *Journal of Labor Economic*. 3: 463-489.
- Burbidge, J.B., L.S. Magee, and A.L. Robb. 2002. "The Education Premium in Canada and the United States." *Canadian Public Policy*. XXVIII (2): 203-217.
- Carliner, Geoffrey. 1981. "Wage differences by language group and the market for language skills in Canada." *Journal of Human Resources*. 16: 384-399.
- Chiswick, Barry R. 1978. "The effect of Americanization on the earnings of foreign-born men." *Journal of Political Economy*. 86: 897-921.
- Crossley, T.F., J.T. MacDonald and C. Worswick. 2001. "Immigrant Benefit Receipt: Sensitivity to Choice of Survey Years and Model Specification", *Journal of Human Resources*. 36(2):379-397.
- Ferrer, Ana, David Green and Craig Riddell. 2003. "The Effect of Literacy on Immigrant Earnings." University of British Columbia, Department of Economics.



- Ferrer, Ana and Craig Riddell. 2003. "Education, Credentials and Immigrant Earnings." University of British Columbia, Department of Economics.
- Freeman, R.B. and K. Needels. 1993. "Skill Differentials in Canada in an Era of Rising Labor Market Inequality." In D. Card and R.B. Freeman, (eds.), *Small Differences that Matter: Labor markets and income maintenance in Canada and the United States*. Chicago: University of Chicago Press.
- Frenette, Marc and René Morissette. 2003. "Will they ever converge? Earnings of immigrant and Canadian-born workers over the last two decades." Analytical Studies Research Paper Series. Catalogue No. 11F0019MIE2003215. Ottawa: Statistics Canada.
- Grant, Mary L. 1999. "Evidence of new immigrant assimilation in Canada." *Canadian Journal of Economics*. 32: 930-955.
- Green, David A. and Christopher Worswick. 2002. "Earnings of Immigrant Men in Canada: The Roles of Labour Market Entry Effects and Returns to Foreign Experience.". University of British Columbia, Department of Economics. Paper prepared for Citizenship and Immigration Canada.
- Hum, Derek and Wayne Simpson. 2003. "Reinterpreting the Performance of Immigrant Wages from Panel Data." University of Manitoba, Department of Economics.
- Li, Peter S. 2003. "Initial Earnings and Catch-up Capacity of Immigrants." *Canadian Public Policy*. XXIX(3): 319-327.
- McDonald, James Ted and Christopher Worswick. 1997. "Unemployment Incidence of Immigrant Men in Canada." *Canadian Public Policy*. XXIII(4): 353-373.
- McDonald, James Ted and Christopher Worswick. 1998. "The earnings of immigrant men in Canada: Job tenure, cohort, and macroeconomic conditions." *Industrial and Labour Relations Review*. 51: 465-482.
- Meng, Ronald. 1987. "The earnings of Canadian immigrant and native-born males." *Applied Economics*. 19: 1107-1119.
- Murphy, Kevin M., Paul Romer and Craig Riddell. 1998. "Wages, skills and technology in the United States and Canada." *NBER working paper series, 6638*. National Bureau of Economic Research.
- Picot, Garnett. 1998. "What is Happening to Earnings Inequality and Youth Wages in the 1990s?" Analytical Studies Research Paper Series. Catalogue No. 11F0019MIE1998116. Ottawa: Statistics Canada.

- Picot, Garnett and Feng Hou. 2003. "The rise in low-income among immigrants in Canada." Analytical Studies Research Paper Series. Catalogue No. 11F0019MIE2003198. Ottawa: Statistics Canada.
- Reitz, Jeffrey. 2001. "Immigrant success in the knowledge economy: institutional changes and the immigrant experience in Canada, 1970-1995." *Journal of Social Issue*. 57: 579-613.
- Schaafsma, J. and A. Sweetman. 2001. "Immigrant Earnings: age at immigration matters." *Canadian Journal of Economics*. 34(4): 1066-1099.
- Sweetman, Arthur. 2004. "Immigrant Source Country School Quality and Canadian Labour Market Outcomes." Analytical Studies Research Paper Series. Catalogue No. 11F0019MIE2004234. Ottawa: Statistics Canada.