

**HOW MUCH SHOULD IMMIGRANTS SPEAK ENGLISH  
IN CANADA? EARNINGS OF IMMIGRANTS DEPENDING  
ON ENGLISH PROFICIENCY**

by

Seong Jun Choi  
B.A., Simon Fraser University, 2006

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# APPROVAL

**Name:** Seong Jun Choi  
**Degree:** Master of Arts  
**Title of Project:** How Much Should Immigrants Speak English in Canada? Earnings of Immigrants Depending on English Proficiency

## Examining Committee:

**Chair:** David Andolfatto  
Professor, Department of Economics

---

**Krishna Pendakur**  
Senior Supervisor  
Associate Professor, Department of Economics

---

**Simon Woodcock**  
Supervisor  
Assistant Professor, Department of Economics

---

**Stephen Easton**  
Internal Examiner  
Professor, Department of Economics

**Date Defended/Approved:** August 1, 2008

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## **ABSTRACT**

This paper investigates immigrant assimilation in Canada; specifically the impact English language proficiency has on wage differentials between adult male immigrants and native workers. Using 1991, 1996 and 2001 Canada Census reports, the analysis employs separate cross-sectional regression, as well as quasi-panel regression. Findings are consistent with the hypothesis that greater English proficiency enhances earnings in the Canadian labour market. It further supports that immigrants at different English skill levels experience varied economic assimilation into the labour market. Most immigrants face wage disparities due to limited access to jobs. Such limited access to Canadian employment can be attributed to primarily poor English skills, as well as immigration status. Finally, English language proficiency and return to post-migration experience, or education appear to be substitutes, that is, those with greater proficiency in English have a smaller effect of time spent in Canada on earnings, but not for those without any English knowledge.

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# 1: INTRODUCTION

Since the early 1980s, Canada has become home to about 5.1 million immigrants. During the 1980s, 1990s, and the first five years of the new millennium, the total number of immigrants admitted to Canada as permanent residents was 133,000, 200,000 and 242,000<sup>1</sup>, respectively. Though these different ethnic groups from various countries integrate with native English or French speakers, they bring their own rich cultures and languages into Canada. Thus, Canada has become a rich multicultural nation with great linguistic diversity. In 2006, nearly 150 languages<sup>2</sup> were reported as a mother tongue among the foreign-born population. English-speakers were still, however, the largest language group. About one-fourth of Canada's foreign-born population of 6.2 million people reported that English alone was the language they learned during childhood and still used. The rest reported never having learned English or learning just some, and that their poor English skills affected their life in Canada.

English skills of the immigrant workers would play a significant role for strong attachment into the Canadian labour market. The English proficiency of immigrants, as a form of human capital, enhances productivity in consumption and labour activities. This is achieved by lowering costs of communication with Canada's English majority and enabling workers to quickly acquire market knowledge and other necessary information. Immigrants from non-English countries would earn lower earnings than Canadian-born

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<sup>1</sup> Sourced from "Immigration Trend in Canada" at Statistics of Canada

<sup>2</sup> Sourced from "Profile of languages in Canada" at Statistics of Canada

workers<sup>3</sup> with comparable experience, education and training due to the costs incurred by poor or strongly accented English. In this sense, immigrants' competency for English would be a significant factor determining their economic assimilation in Canada. Chiswick (1991), Chiswick, B and P. Miller (2001, 2002), and Tainer (1988) examined the effects of language practice on earnings among adult male immigrants in the U.S. and Canada. They concluded that greater proficiency in the official language reduces a wage disparity with natives because English fluency allows an immigrant to utilize as much of previous education and work experience as possible. However, those with greater English proficiency may not necessarily experience the same benefits of the post migration experience as those with less English, in terms of substantial increases in earnings.

The purpose of this paper, using 1991, 1996, and 2001 Canadian Census data, is to extend the analysis of previous research in terms of what patterns of economic assimilation an average immigrant experiences, conditional on English fluency level during their residency in Canada. Given the fact that the huge number of immigrations into Canada since the 1980s, I believe the Canadian labour market has been linguistically- and ethnically-diversified, so that relative to English native workers, immigrant workers' English proficiency affects their earnings profile. In this paper, I study how economic assimilation varies among immigrants and is dependent on English fluency level. This is examined in terms of the earnings of immigrant workers compared to Canadian-born workers through cross-sectional and quasi-panel analysis.

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<sup>3</sup> A Canada born worker refers to those born in Canada with English as their mother tongue, or those born in Canada who have English as a second language but completed at least 7 years of schooling in Canada.

Section II describes the data used in the analysis, as collected from 1991, 1996, and 2001 Census of Canada and how interest and control variables were determined. Section III outlines two different methodologies used for this study, and presents descriptive analysis on regression estimates. Finally, section IV provides the summary and conclusion.

## 2: DATA AND VARIABLES

The analysis is based on the 1991, 1996, and 2001 Census of Canada, Public Use Microdata File for individuals. Samples consisting of 2.7% of the population for 1991 and 2001, and 2.8% in 1996 were enumerated in the each census. A person is classified as an “immigrant” if born in a foreign country and a permanent resident in Canada; all other workers are classified as “native”, excluding Aboriginal people<sup>1</sup> and women. This study includes only male workers in Canada, aged 24 to 65 and not in school full time during each reference year to avoid the complexities of modelling labour supply in the analysis for women and aged men.

The dependant variable of interest is annual earnings, which include only positive<sup>2</sup> wages and salaries, all of which are converted to 2000 constant dollars using the Consumer Price Index-all items<sup>3</sup>. With the sample restrictions given, eight entry immigrant cohorts are identified by five-year intervals. In addition, Immigrants arriving during the reference year were not included. The cohorts I study are thus: 96/99, 91/95, 86/90, 81/85, 76/80, 71/75, 66/70, and pre65.

In order to construct English fluency level, this study uses the following information available in each Census: (1) the knowledge of official language; (2) the language

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1 Pendakur, K. and R. Pendakur (2006) found that Aboriginal men and women face severe earnings disparity relative to majority persons with similar personal characteristics such as age and education. In order to observe the wage disparities due to English skills, the Aboriginal group is excluded in this study.

2 For Immigrants, other income sources, such as investment income or self-employed income, would not be all made within Canada. If so, the relative wage of immigrants compared to the native born will be attributed to other factors rather than impact of one’s English fluency level.

3 Sourced from BCstats at [www.bcstats.gov.bc.ca](http://www.bcstats.gov.bc.ca)

usually spoken at home; and (3) the mother tongue. There are four different levels of English fluency among immigrants accounted for in the form of dummy variables as following; L1 stands for foreign-born individuals whose mother tongue is English. This also refers to those born in English countries, such as the U.S. or U.K. whose first language spoken is either English or English and French; L2 is for foreign-born individuals who can conduct a conversation in English and whose mother tongue is not English and usually speak English at home; L3 is for foreign-born individuals who can communicate in English and whose mother tongue is not English, but do not speak English at home ; and finally L4 is for foreign-born individuals who cannot conduct a conversation in English and whose mother tongue is not English.

The classification of English proficiency similarly followed the criteria by Chiswick, B. and P. Miller (2002). However, further criteria have been added to the language level classification to account for a Canadian native group. This group includes only those Canadian-born individuals whose mother tongue is English, and those whose mother tongue is not English, but grew up in Canadian society with at least 7 years of Canadian schooling where the language spoken was either English or English and French<sup>4</sup>. I assumed members of this group are likely to be native English speakers. Otherwise, non-English native speaking Canadian-born individuals are excluded in this study<sup>5</sup>. I also dropped Canadian-born individuals who reported, “Can’t understand English.” Thus, the Canadian labour market consists of native language groups and the immigrant group, comprised of L1, L2, L3, and L4.

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4 Carlner, G (2000) found that 98.6 percent of native-born Americans of ethnic groups who came to the U.S., such as Hispanics and East Asians, reported speaking only English or speaking very well.

5 Non-English native speaking Canadian-born individuals are accounted for less than 7% among Canadian born individuals across each Census.

In order for data competency and validity, I excluded those who reported residency in the Northwest Territory, Yukon Territory, and Atlantic provinces<sup>6</sup> in reference years because there were confidential matters in those regions regarding coding census data. Quebec is excluded as well, as the purpose of this study is to examine the effect of English, rather than French. Therefore, the analysis is of Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia, named hereafter English Canada.

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<sup>6</sup> For reasons of confidentiality, individual responses in the Atlantic provinces ( i.e. New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador) and the territories cannot be coded to the same level of detail as those of Quebec, Ontario and the Western provinces. Since less than one percent of the sample resides in the Atlantic Provinces and the Territories,, estimates that exclude the Atlantic Provinces and Territories will not be prone to significant sample selection bias problems.

### 3: METHODOLOGY

#### 3.1 Cross-sectional analysis

Since it is difficult to obtain longitudinal earnings data covering an extended period for both immigrant and native workers, I use the quasi-panel approach, as used by Baker, M. and D. Benjamin (1994). In this section, separate models are run for each census at each immigrant English group with native-born individuals. This approach examines the economic assimilation of immigrants conditional on English fluency level, relative to the Canadian-born group. In this framework, the log earnings of an immigrant having English level ‘L’ in year  $t$ ,  $Y_t^L$ , is given by the following equation:

$$Y_t^L = X_t^L \theta_t + \sum_c \alpha_{c,t}^L + \varepsilon_{c,t}^L \quad \text{where } L=1,2,3,4 \text{ (English fluency level)} \quad (1)$$

While the log earnings of a native worker in year  $t$ ,  $Y_t$ , is written as the following:

$$Y_t = X_t \lambda_t + \alpha_t + \varepsilon_t \quad (2)$$

In this equation,  $X_t^L$  and  $X_t$  are vectors of observable socioeconomic characteristics<sup>1</sup> of immigrants with English fluency level ‘L’ and native workers, respectively. The parameter  $\alpha_{c,t}^L$  denotes intercepts for cohorts of immigrants who arrived in period ‘c’ with English fluency level ‘L’, while  $\alpha_t$  denotes an intercept term for Canadian-born individuals in year  $t$ .

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<sup>1</sup> The vector of X for both native and immigrants contains age (with 2nd polynomial), marital status (5 dummies), the highest level of education (14 dummies), ethnicity (1 dummies), Full or part-time indicator (1 dummies), CMA (16 dummies), Province of residence (5 dummies), log of weeks of work, continuous years of market work experience (with 2nd polynomial), industry of work (16 dummies) and occupations (25 dummies).

The first approach used in this paper is to combine equation (1) and (2) into the single earning equation. The resulting earning equation is separately estimated for each of the three years at each English level of immigrants with a native-born group. The  $\alpha^L_{c+k,t}$  and  $\alpha^L_{c,t}$  are predicted arrival cohort effect on log earnings of the recent immigrant cohort that arrived in year  $c+k$  in year  $t$  with the English level 'L' and the non-recent immigrant cohort that arrived in year  $c$  in year  $t$  with the same English level, holding socioeconomic characteristics constant. The difference between the arrival cohort effects of the two cohorts in the single cross-section data,  $\alpha^L_{c,t} - \alpha^L_{c+k,t}$ , can be written as the following:

$$\alpha^L_{c,t} - \alpha^L_{c+k,t} = (\alpha^L_{c,t} - \alpha^L_{c,t-k}) + (\alpha^L_{c,t-k} - \alpha^L_{c+k,t}) \quad (3)$$

The difference between arrival cohort effects would measure how certain immigrant cohorts with the same English level are improved over time. The first component on the right hand side of this equation is the earnings growth of the non-recent immigrant cohort between year  $t-k$  and year  $t$  with the same English level. The second component measures the difference of the entry earnings of two cohorts having the same English fluency level. The equation for difference between two arrival cohort effects on log earnings will measure unbiased earnings growth of non-recent cohorts only if entry earnings of the two cohorts are constant over time. This means that the second term of equation (3) is zero by the assumption that immigrants' qualifications, economic activities, and wage structures remain constant over time. Although these conditions are not likely to be satisfied, this approach would minimize the problems caused by such unsatisfied conditions in estimating the growth of immigrants' earnings, through normalizing the secular growth in



immigrant earnings against that of some base group<sup>2</sup>, such as a Canadian native group (Baker, M. and D. Benjamin 1994).

However, as Borjas (1995) suggests, there could be a serious problem in this framework. The reason being, the wage growth experienced by a particular cohort and the trends in the relative wage across cohorts would not be well represented in unadjusted wage differentials because the rate of wage growth for a particular cohort is determined under the constant age composition of natives while typical immigrants are aging. This drawback would overstate the actual wage growth of the certain immigrant cohort over time. To avoid this, the relative wage of immigrants is estimated after adjusting for differences in the age composition of the Canadian-born and immigrant populations.

Table 1 shows the relative entry wages of immigrant cohorts in each of four English immigrant groups compared with native workers after adjusting<sup>3</sup> for differences in the age composition of the native and immigrant populations. These statistics document a number of important results. First, among L1 immigrant cohorts, the latest immigrant cohort enumerated in the 1990 census (i.e. 86-90 arrivals) earned 3.4% less than native workers in 1990. However, by 1995, the latest cohort enumerated in the 1995 census earned 17.4% less than natives, and by 2000, the wage disadvantage between recent L1 immigrant cohorts and natives had increased by 17.6 percentage.

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2 This assumption is only valid if the base group is chosen appropriately. For example, if immigrants' earnings are normalized against a base group which does relatively poor in the period between the two cross sections, the estimates of assimilation will be overstated.

3 It followed the method in Borjas (1995) by estimating a regression of the workers' log wage on age (with 2nd and 3rd polynomials), a dummy variable indicating an immigrant or not, cohort dummies, and interaction terms between age and immigration dummies, in each census year. Then, the age-adjusted wage differential between immigrant English groups and natives is evaluated at the mean age of each immigrant group in 1990, 1995 and 2000.

**Table 1**  
**Immigrant Log Wage, 1990-2000 (relative to natives) in English Canada.**

Group	L1			L2		
	1990	1995	2000	1990	1995	2000
Cohorts : 96-99 arrivals			<b>-0.176</b> (0.055)			<b>-0.449</b> (0.063)
91-95 arrivals		<b>-0.174</b> (0.059)	<b>-0.144</b> (0.050)		<b>-0.435</b> (0.078)	<b>-0.482</b> (0.058)
86-90 arrivals	<b>-0.034</b> (0.055)	<b>-0.079</b> (0.054)	<b>-0.120</b> (0.048)	<b>-0.115</b> (0.062)	<b>-0.290</b> (0.072)	<b>-0.362</b> (0.055)
81-85 arrivals	<b>0.065</b> (0.049)	<b>-0.012</b> (0.055)	<b>-0.056</b> (0.047)	<b>-0.045</b> (0.058)	<b>-0.147</b> (0.073)	<b>-0.361</b> (0.062)
76-80 arrivals	<b>0.107</b> (0.045)	<b>-0.030</b> (0.052)	<b>-0.038</b> (0.045)	<b>-0.009</b> (0.054)	<b>-0.156</b> (0.070)	<b>-0.231</b> (0.052)
71-75 arrivals	<b>0.072</b> (0.045)	<b>-0.0026</b> (0.050)	<b>-0.036</b> (0.043)	<b>-0.001</b> (0.054)	<b>-0.005</b> (0.067)	<b>-0.196</b> (0.050)
66-70 arrivals	<b>0.084</b> (0.043)	<b>-0.020</b> (0.050)	<b>-0.044</b> (0.044)	<b>0.060</b> (0.051)	<b>-0.114</b> (0.067)	<b>-0.239</b> (0.052)
pre-1965 arrivals	<b>0.110</b> (0.042)	<b>-0.035</b> (0.049)	<b>-0.079</b> (0.042)	<b>0.088</b> (0.049)	<b>-0.120</b> (0.065)	<b>-0.214</b> (0.049)
R2	<b>0.335</b>	<b>0.391</b>	<b>0.318</b>	<b>0.327</b>	<b>0.382</b>	<b>0.316</b>
Samples: Native	73250	68087	71479	73250	68087	71479
Immigrants	9864	8840	8606	7997	6888	7445
Group	L3			L4		
	1990	1995	2000	1990	1995	2000
Cohorts: 96-99 arrivals			<b>-0.919</b> (0.050)			<b>-1.462</b> (0.146)
91-95 arrivals		<b>-0.891</b> (0.072)	<b>-0.835</b> (0.044)		<b>-1.089</b> (0.111)	<b>-1.390</b> (0.125)
86-90 arrivals	<b>-0.514</b> (0.060)	<b>-0.741</b> (0.070)	<b>-0.753</b> (0.045)	<b>-0.876</b> (0.148)	<b>-0.910</b> (0.095)	<b>-1.380</b> (0.120)
81-85 arrivals	<b>-0.385</b> (0.057)	<b>-0.591</b> (0.072)	<b>-0.671</b> (0.048)	<b>-0.624</b> (0.30)	<b>-0.778</b> (0.117)	<b>-1.204</b> (0.150)
76-80 arrivals	<b>-0.305</b> (0.057)	<b>-0.638</b> (0.072)	<b>-0.646</b> (0.050)	<b>-0.479</b> (0.099)	<b>-0.720</b> (0.118)	<b>-1.124</b> (0.168)
71-75 arrivals	<b>-0.283</b> (0.056)	<b>-0.555</b> (0.071)	<b>-0.608</b> (0.051)	<b>-0.583</b> (0.117)	<b>-0.952</b> (0.115)	<b>-1.064</b> (0.142)
66-70 arrivals	<b>-0.230</b> (0.056)	<b>-0.527</b> (0.072)	<b>-0.590</b> (0.054)	<b>-0.483</b> (0.107)	<b>-0.827</b> (0.143)	<b>-1.454</b> (0.241)
pre-1965 arrivals	<b>-0.211</b> (0.053)	<b>-0.491</b> (0.073)	<b>-0.510</b> (0.057)	<b>-0.587</b> (0.172)	<b>-0.774</b> (0.140)	<b>-1.007</b> (0.2274)
R2	<b>0.342</b>	<b>0.417</b>	<b>0.343</b>	<b>0.339</b>	<b>0.400</b>	<b>0.33</b> 7
Samples: Native	73250	68087	71479	73250	68087	71479
Immigrants	8395	8900	10760	612	773	703

Source: 1991, 96 and 2001 Census of Canada, Public Use Microdata Files (Individuals)

Note: Robust standard errors are reported in the parentheses

Among L2 immigrant cohorts, the latest L2 cohort in the 1990 census earned 11.5% less than natives in 1990. By 1995 and 2000, the preceding recent L2 cohorts earned 43.5% and 44.9% less than natives respectively in 1995 and 2000. Finally, recent L3 and L4 cohorts experienced considerably lower entry wages than other recent immigrant English groups. The relative entry wages of recent L3 cohorts with native workers in successive censuses were 51.4%, 89.1% and 91.9% less in 1990, 1995 and 2000. Among recent L4 immigrant cohorts, the wage disparity with natives was much greater than other immigrant language groups. The relative entry wages of recent L4 cohorts with natives in successive censuses were 87.6%, 108.9% and 146.2% lower in 1990, 1995 and 2000.

The trend in the relative entry wage of each immigrant English group suggests that less English fluency causes greater wage disparity in the Canadian labour market. As long as no significant wage structure changes occurred in the 1990s, we can interpret relative entry wages as a measure of the relative skills immigrants brought to Canada. The relative skills of recent L1, L2, L3 and L4 cohorts declined by about 14%, 33%, 41% and 59% respectively during the 1990s. The decline in entry wages of recent L1 and L2 cohorts could be attributed to the fact that during this time the education and work credentials immigrants gained from their home countries, such as the U.S. or U.K., were no longer as highly valued when compared to those of Canadian native workers as they may have been before. On the other hand, the negative trend in the relative entry wage of the recent L3 and L4 immigrants could be attributed to the source countries of immigrants changing from Europe to Asia and Africa where a relatively low quality of education and working environments exist compared to Canada.

In this analysis, the true wage convergence among immigrants in each level of English fluency may not be well represented because the sample composition of a particular immigrant cohort changes systematically across censuses. It is argued that as many as one-third of Canadian immigrants eventually return to their original countries after training and/or gaining citizenship<sup>4</sup>. Supposing that the returning immigrants are composed of workers who are paid lower wages than average, then the inter-temporal tracking of a particular cohort would indicate an improvement in relative wage even if no wage convergence occurs. Then, the rate of wage convergence would be overestimated. On the other hand, if the returning immigrants were those who could be paid more wages in other countries than Canada, then, tracking of a particular cohort would show a decrease in relative wage even if no wage convergence occurs. In this case, the rate of wage convergence would be underestimated.

Another concern of wage convergence is that the sample composition of a particular cohort also changes over time because the sample of working-age immigrants in the later censuses indicates a number of immigrants who migrated as children. It is unlikely that these children experience the same assimilation as immigrants who arrived in Canada as adults. The inclusion of these immigrant children in later censuses will bias the estimated rate of wage convergence upward.

Due to these drawbacks on wage convergence in the separate cross-sectional analysis, the same cross-sectional regressions are done again, but only with the immigrants who

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<sup>4</sup> Devoretz (1999) suggested the future lies in "brain exchange," wherein temporary immigration — for education, then moving on to another country (or returning to the home country) for work — is the wave of the future. Canada serves as an "entrepot" country: one-third of US immigrants from Canada were not born here, and one-third of Canadian immigrants leave after training and accession to citizenship.

arrived in Canada after age 24. This sample selection will minimize the bias from the sample composition problem caused by the new labour force in the later censuses. However, the bias from the other sample composition attributed to leaving immigrants cannot be completely minimized. Using the subsample of adult immigrants, the analysis will show that wage convergence of particular cohorts who remain in the Canadian labour market. This requires great examination on how immigrants assimilate depending on their English fluency level in Canada during the 1990s. The estimated trend of their wage growth could be either overestimated or underestimated depending on the sample composition bias due to immigrants leaving Canada.

With the subsample of adult immigrants at each English fluency level, table 2 represents the relative wage of adult immigrant cohorts in each reference year compared to that of native workers. During 10 years of residence, the wages of L1 and L2 cohorts, particularly 86/90 arrivals, dropped 9% and 34% below their entry wage. Whereas, the corresponding L3 cohort experienced a wage decrease that was 30% less than their entry wage. However, the biggest drop in wage was observed in the 86/89 L4 cohorts during the 1990s, where the wage dropped below the entry wage by about 59%. The results show that adult immigrants who were paid better wages than natives or at least equal wages, possessed higher English proficiency (i.e. adult L1 and L2 cohorts). However, no relative wage growth is observed across immigrant cohorts, regardless of English levels. Furthermore, the decline in relative wage is accelerated as English levels lower. Across immigrant cohorts in each L1, L2, L3 and L4 English level group, the average relative wage growth over the 1990s is -11%, -29%, -30% and -75%.

**Table 2**  
**Adult immigrant <sup>a</sup> Log Wage, 1990-2000 (relative to natives)**

Group	L1			L2		
	1990	1995	2000	1990	1995	2000
Cohorts: 96-99 arrivals			<b>-0.099</b> (0.064)			<b>-0.459</b> (0.067)
91-95 arrivals		<b>-0.142</b> (0.059)	<b>-0.114</b> (0.057)		<b>-0.442</b> (0.084)	<b>-0.537</b> (0.061)
86-90 arrivals	<b>-0.024</b> (0.062)	<b>-0.073</b> (0.053)	<b>-0.118</b> (0.057)	<b>-0.075</b> (0.076)	<b>-0.307</b> (0.068)	<b>-0.410</b> (0.059)
81-85 arrivals	<b>0.079</b> (0.054)	<b>-0.022</b> (0.059)	<b>-0.076</b> (0.063)	<b>-0.046</b> (0.066)	<b>-0.198</b> (0.070)	<b>-0.401</b> (0.087)
76-80 arrivals	<b>0.131</b> (0.049)	<b>-0.062</b> (0.055)	<b>0.031</b> (0.054)	<b>0.012</b> (0.061)	<b>-0.200</b> (0.069)	<b>-0.241</b> (0.062)
71-75 arrivals	<b>0.071</b> (0.052)	<b>-0.001</b> (0.051)	<b>0.029</b> (0.055)	<b>-0.017</b> (0.066)	<b>-0.124</b> (0.062)	<b>-0.263</b> (0.060)
66-70 arrivals	<b>0.075</b> (0.049)	<b>0.009</b> (0.054)	<b>-0.051</b> (0.067)	<b>0.064</b> (0.064)	<b>-0.162</b> (0.080)	<b>-0.203</b> (0.079)
pre-1965 arrivals	<b>0.097</b> (0.053)	<b>0.028</b> (0.064)	<b>-0.045</b> (0.146)	<b>0.072</b> (0.062)	<b>-0.151</b> (0.113)	<b>-0.199</b> (0.151)
<b>R2</b>	<b>0.33</b>	<b>0.39</b>	<b>0.32</b>	<b>0.33</b>	<b>0.39</b>	<b>0.32</b>
Samples: Native	73250	68087	71479	73250	68087	71479
Immigrant	4082	3340	3263	2249	1873	2384
Group	L3			L4		
	1990	1995	2000	1990	1995	2000
Cohorts: 96-99 arrivals			<b>-0.938</b> (0.052)			<b>-1.510</b> (0.163)
91-95 arrivals		<b>-0.924</b> (0.059)	<b>-0.890</b> (0.046)		<b>-0.998</b> (0.123)	<b>-1.466</b> (0.142)
86-90 arrivals	<b>-0.513</b> (0.064)	<b>-0.770</b> (0.054)	<b>-0.808</b> (0.048)	<b>-0.851</b> (0.166)	<b>-0.896</b> (0.098)	<b>-1.436</b> (0.132)
81-85 arrivals	<b>-0.397</b> (0.060)	<b>-0.623</b> (0.057)	<b>-0.694</b> (0.056)	<b>-0.637</b> (0.151)	<b>-0.793</b> (0.185)	<b>-1.322</b> (0.188)
76-80 arrivals	<b>-0.364</b> (0.063)	<b>-0.647</b> (0.062)	<b>-0.654</b> (0.059)	<b>-0.460</b> (0.114)	<b>-0.712</b> (0.157)	<b>-1.082</b> (0.207)
71-75 arrivals	<b>-0.297</b> (0.060)	<b>-0.544</b> (0.058)	<b>-0.608</b> (0.062)	<b>-0.621</b> (0.130)	<b>-1.050</b> (0.212)	<b>-1.019</b> (0.128)
66-70 arrivals	<b>-0.236</b> (0.060)	<b>-0.549</b> (0.067)	<b>-0.505</b> (0.062)	<b>-0.454</b> (0.113)	<b>-0.599</b> (0.110)	<b>-1.371</b> (0.293)
pre-1965 arrivals	<b>-0.191</b> (0.063)	<b>-0.396</b> (0.089)	<b>-0.514</b> (0.217)	<b>-0.550</b> (0.219)	<b>-0.465</b> (0.097)	<b>-1.838</b> (0.819)
<b>R2</b>	<b>0.34</b>	<b>0.41</b>	<b>0.34</b>	<b>0.34</b>	<b>0.40</b>	<b>0.33</b>
Samples: Native	73250	68087	71479	73250	68087	71479
Immigrant	4794	5409	7007	487	612	576

Source: 1991, 96 and 2001 Census of Canada, Public Use Microdata Files (Individuals)

Note: Robust standard errors are reported in the parentheses.

a) Adult immigrants are those who migrated in Canada after age 24.

Generally, the wages of adult L1 cohorts who arrived in Canada before 1985 were at least equal to or approximately 8% less than the wages of native workers by 20005, with other things equal. However, no sign of wage parity was observed in the 1990s across some of the late adult L2 cohorts and all of the adult L3 and L4 cohorts.

However, understanding the increase in the wage gap of immigrant cohorts compared with native workers during the 1990s requires greater examination. As mentioned above, the negative wage growth could be attributed to the fact that there were changes in immigrant population composition due to immigrants returning to their home countries. For example, adult immigrants who came to Canada with higher or equivalent skills compared to native workers might have further developed their skills, such as English or education, during their stay and then returned to their home or other countries where they could yield higher returns on their human capital. Thus, there would be just a decrease in average earnings among immigrants even if there were no actual wage deterioration over time. On the other hand, there might have been actual relative wage decline that occurred in the 1990s. This could be attributed to the fact that the relative human capital growth among immigrant English groups could not catch up to that of native workers. Thus, over time there would be an increasing productivity gap between natives and immigrants. Furthermore, the magnitude of this gap would be greater among immigrants with lower English levels.

Taken all together, the findings in this section suggest the following: (1) English fluency is one of the primary factors for better relative (entry-) wages. Practicing English

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<sup>5</sup> Even though the relative wage of adult L1 cohorts, such as IM8185, IM6670 and IM pre65 are negative in table 2, those coefficients are not statistically significant far from being zero.

in the work place and at home might possibly lead immigrants to reducing the wage gap with natives; (2) the relative entry wage of all successive recent immigrant cohorts decreased during the 1990s regardless of their English status. This result was also confirmed by analysis using the subsample of adult immigrants. The trend of lower entry wages for successive recent L2, L3 and L4 immigrants can be attributed to a change from Europe to Asia and Africa as source countries for the immigrant groups during the 1990s. For the decline in entry wage of recent L1 immigrant cohorts, Canada could be no longer a favourable country for higher earnings. Thus, there would be a decrease in the number of skilled L1 immigrants into Canada, or the Canadian labour market does not value the human capital possessed by recent L1 immigrants as much as before; and (3) Regardless of immigrants' English level, a relative negative wage growth was observed across adult immigrant cohorts in the 1990s. Furthermore, greater relative wage deterioration was likely to occur as immigrant English levels lowered. However, it is difficult to interpret accurately this negative wage growth among all the immigrant English groups because of the possibility of sample composition bias caused by a number of immigrants leaving Canada.

### **3.2 Quasi-panel analysis**

Although the descriptive data presented in Section III.I contains many of the key results of this study, it is instructive to conduct a more formal analysis on earnings of immigrants conditional on their English level. As noted above, separate models are run for each census at each immigrant English group with a native-born group, but all immigrants and Canadian-born workers are now pooled in each model. The equations for the regression are as follows:



$$\log W_{ik}^L = \theta_i X_k^L + \alpha_i^L YSM_k^L + \omega_i \text{Age}_k^L + \phi_i M_k^L + \sum \beta_i C_k^L + \sum \lambda_i L_k + \mu_i^{96} \text{Year96}_k^L + \mu_i^{01} \text{Year01}_k^L + \varepsilon_{ik}^L \quad (4)$$

where L= 1,2,3,4 (English fluency level)

and

$$\log W_{nl} = \theta_n X_l + \omega_n \text{Age}_l + \mu_n^{96} \text{Year96}_l + \mu_n^{01} \text{Year01}_l + \varepsilon_{nl} \quad (5)$$

In this equation,  $W_{ik}^L$  gives the earnings of an immigrant 'k' with English level being 'L', while  $W_{nl}$  gives the earnings of a native worker 'l'.  $L_k$  is a vector of dummy variables indicating English level of the immigrant. Whereas, for every census year,  $\text{Age}_k^L$  and  $\text{Age}_l$  (up to 3<sup>rd</sup> polynomial) indicate the age of the immigrant 'k' with English level being 'L', and native worker 'l'.  $YSM_k^L$  (up to third polynomial) is years since migration<sup>6</sup> to Canada that the immigrant 'k' reported with English level 'L' in every census year.  $C_t$  is a vector of dummy variables indicating the cohort of arrival in 96/99, 91/95, 86/90, 81/85, 76/80, 71/75, 66/70 and pre65.  $\text{Year01}$  and  $\text{Year96}$  are dummy variables indicating if the observation was drawn from either the 2001 or the 1996 Census.  $M_k^L$  gives the age at migration for immigrant 'k' with English level 'L', and finally  $X$  is the vector of the observable socioeconomic characteristics<sup>7</sup> for Canadian-born and immigrant individuals.

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6 In each census, information on years at arrival is presented in single years for some arrival cohorts and small intervals for other cohorts. A continuous measure was formed from this information by assigning a midpoint to all arrival intervals, and subtracting this value from 1991, 1996, and 2001. Individuals who arrived in Canada in reference year (91, 96, and 2001) are excluded from this study.

7 Socioeconomics variables contains a ethnicity dummy (1 dummy), citizenship (1 dummy), highest education levels (14 dummies), Province of residence (5 dummies), CMA (16 dummies), marital status (5 dummies), and place of birth (7 dummies).

The vector of coefficients  $\lambda_i$  captures the effect of English fluency among immigrants on earnings relative to native English speakers. The coefficient  $\omega_n$  and  $\omega_i$  give the aging effect for Canadian-born and immigrant workers and the rate at which both native' and immigrant' earnings increase over the life cycle. The vector of coefficients  $\alpha^L_i$  is the additional aging effect for immigrants after migration occurs with a given English level. The vector of coefficients  $\beta_i$  captures the cohort effects in terms of the differences in entry wages across immigrant cohorts. The coefficients  $\mu_i$  and  $\mu_n$  give the period effect for immigrants and Canadian-born individuals. Finally,  $\Phi_i$  captures the effect of age at migration on wage<sup>8</sup>.

It is well known that the parameters of the regression model in equations (4) and (5) are not identified. In order to identify the two period effects, the aging effects, language effects, and the cohort effects, a restriction must be imposed on the model. One possible restriction is that the period effects are the same for immigrants and Canadian-born workers in equation (4) and (5) as the followings;

$$\mu_i^{96} = \mu_n^{96} \quad \text{and} \quad \mu_i^{01} = \mu_n^{01}$$

Thus, the relative wage of immigrants with a given level of English fluency 'k' compared to Canadian-born workers is independent of secular changes in the wage level (Borjas1995). In addition, the introduction of the "age at migration" as a variable implies that the right-hand side variables in equation (5) are perfectly collinear because  $M^L_k = \text{Age}^L_k - \text{YSM}^L_k$ . Therefore, one simple restriction is imposed, that being the coefficient of the age variable is the same for immigrant and Canadian-born workers.

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<sup>8</sup> Schaafsma, J and A. Sweetman (2001) suggest that there is correlation between age at immigration and earnings. Age at migration has an independent effect on the wage determination process.

Thus, the estimation of the system in equations (5) and (6) requires the additional assumption below:

$$\omega_n = \omega_i.$$

Table 3 presents the basic set of OLS regressions whose dependent variable is the natural logarithm of wage and salaries under the age-adjustment. Column (1) represents estimates from the regression controlling for personal characteristics<sup>9</sup>. Column (2) shows estimates from the regression controlling for additional job characteristics held, including occupation, industry worked in, full-time status, and log of weeks worked.

Column (1) in table 3 shows that immigrants at a L2, L3 or L4 English level experience an earning loss of 24.2%, 78.9% and 110.4% respectively, compared to workers at a L1 English level. There is a negative cohort effect on relative earnings measuring -1% to -11.5% among the recent three immigrant cohorts, such as 96-99, 91-95 and 86-90 arrivals. Whereas, earlier cohorts have a positive impact on relative entry earnings, measuring 12% to 37% compared to native workers in 1990. Thus, relative entry earnings of a new particular cohort are measured by the sum of the cost of given English skills, the cohort effect and the effect of age at migration (i.e.  $\lambda_i + \beta_i + \Phi_i * \text{Age at migration}$ ). For example, recent L1 91/95 immigrants at age 20 have 20% less earnings than native workers, while corresponding L2 immigrants face a wage disparity of 44.3%.

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<sup>9</sup> A personal characteristic includes visible minority, citizenship, birth place, marital status, the number in household, province of residence, and CMA.

**Table 3**

**OLS Regression using Pooled 1991, 1996, and 2001 Censuses**  
**Dependent Variable= Log Wage in English Canada**

Variables	1	2
<b>L2</b>	<b>-0.2419</b> (0.0049)	<b>-0.1722</b> (0.042)
<b>L3</b>	<b>-0.7891</b> (0.041)	<b>-0.6199</b> (0.036)
<b>L4</b>	<b>-1.1038</b> (0.092)	<b>-0.9174</b> (0.085)
<b>Age</b>	<b>0.0340</b> (0.009)	<b>0.0432</b> (0.007)
<b>Age<sup>2</sup>/10<sup>3</sup></b>	<b>0.2222</b> (0.205)	<b>-0.3808</b> (0.176)
<b>Age<sup>3</sup>/10<sup>5</sup></b>	<b>-0.8433</b> (0.157)	<b>-0.0922</b> (0.135)
<b>YSM*L1 immigrant</b>	<b>0.0019</b> (0.006)	<b>-0.0065</b> (0.005)
<b>YSM<sup>2</sup>*L1 immigrant/10<sup>3</sup></b>	<b>-0.4348</b> (0.242)	<b>-0.2184</b> (0.208)
<b>YSM<sup>3</sup>*L1 immigrant/10<sup>5</sup></b>	<b>0.4343</b> (0.310)	<b>0.2853</b> (0.264)
<b>YSM*L2immigrant</b>	<b>0.0143</b> (0.006)	<b>0.0044</b> (0.005)
<b>YSM<sup>2</sup>*L2 immigrant/10<sup>3</sup></b>	<b>-0.7246</b> (0.252)	<b>-0.5673</b> (0.218)
<b>YSM<sup>3</sup>*L2 immigrant/10<sup>5</sup></b>	<b>0.7463</b> (0.310)	<b>0.7101</b> (0.269)
<b>YSM*L3 immigrant</b>	<b>0.0353</b> (0.006)	<b>0.0119</b> (0.005)
<b>YSM<sup>2</sup>*L3 immigrant/10<sup>3</sup></b>	<b>-1.6330</b> (0.280)	<b>-0.8053</b> (0.251)
<b>YSM<sup>3</sup>*L3 immigrant/10<sup>5</sup></b>	<b>2.0478</b> (0.414)	<b>1.0324</b> (0.372)
<b>YSM*L4 immigrant</b>	<b>0.0057</b> (0.020)	<b>-0.0007</b> (0.019)
<b>YSM<sup>2</sup>*L4 immigrant/10<sup>3</sup></b>	<b>0.1216</b> (1.200)	<b>-0.0961</b> (1.153)
<b>YSM<sup>3</sup>*L4 immigrant/10<sup>5</sup></b>	<b>-0.9054</b> (2.002)	<b>-0.2627</b> (1.9231)
<b>96-99 arrivals</b>	<b>-0.1148</b> (0.048)	<b>-0.0208</b> (0.041)
<b>91-95 arrivals</b>	<b>-0.1437</b> (0.047)	<b>-0.0483</b> (0.040)
<b>86-90 arrivals</b>	<b>-0.0107</b> (0.047)	<b>0.0874</b> (0.041)
<b>81-85 arrivals</b>	<b>0.1223</b> (0.050)	<b>0.2016</b> (0.044)
<b>76-80 arrivals</b>	<b>0.1813</b> (0.053)	<b>0.2586</b> (0.046)
<b>71-75 arrivals</b>	<b>0.2244</b> (0.054)	<b>0.3185</b> (0.047)
<b>66-70 arrivals</b>	<b>0.2808</b> (0.055)	<b>0.3693</b> (0.048)
<b>Pre65 arrivals</b>	<b>0.3739</b> (0.056)	<b>0.4556</b> (0.049)
<b>Age at migration</b>	<b>-0.0043</b> (0.000)	<b>-0.0035</b> (0.000)

**OLS Regression using Pooled 1991, 1996, and 2001 Censuses**  
**Dependent Variable= Log Wage in English Canada**

<b>Visible minority</b>	<b>-0.1602</b> (0.011)	<b>-0.1160</b> (0.009)
<b>Citizenship</b>	<b>0.0775</b> (0.009)	<b>0.0440</b> (0.008)
<b>1996</b>	<b>-0.1157</b> (0.004)	<b>-0.0050</b> (0.004)
<b>2001</b>	<b>-0.0155</b> (0.004)	<b>0.0522</b> (0.005)
<b>Constant</b>	<b>9.6897</b> (0.174)	<b>5.5863</b> (0.163)
<b>R2</b>	<b>0.1688</b>	<b>0.3666</b>
<b>Personal Characteristics</b>	<b>Yes</b>	<b>Yes</b>
<b>Job Characteristics*</b>	<b>No</b>	<b>Yes</b>
Samples: Natives	292,599	
Immigrants	79,701	

Source: 1991, 96 and 2001 Census of Canada, Public Use Microdata Files (Individuals)

Note: Robust standard errors are reported in the parentheses

\* Job characteristics include occupation, industry, log of weeks worked, and fulltime indicator.

With the native comparison group, the premium to post-immigration experience is greater for immigrants with less fluency in English, which is at least being able to converse in English (see table 4). For example, the wage increment for L3 immigrants, measured after 10 years of being in Canada, is about 0.9% (not taking account of Age effect<sup>10</sup>). On the other hand, the wage increment of L1 and L2 immigrants measured at about -0.6% and 0.2%, respectively. Finally, the wage increment at 10 years for L4 immigrants is about 0.5%. Even though the rates of earnings change may be great for those with less English skills, the level of their earnings is still far below that of those with better English skills. (See Figure 1 to 4)

<sup>10</sup> It assumes that the age effect on natives and immigrants are the same.

**Table 4**

**An additional year effect of immigrants' residence on relative earnings**

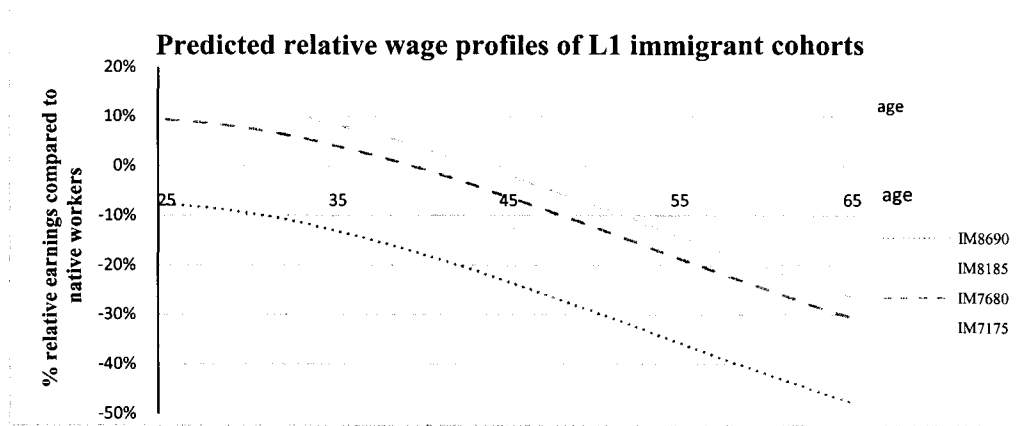
	At 5 years	At 10 years	At 20 years	At 30 years	At 40 years	At 50 years
<b>L1</b>	-0.2%	-0.6%***	-1.0%***	-1.2%***	-1.2%***	-0.9%*
<b>L2</b>	0.8%*	0.2%	-0.6%***	-0.9%***	-0.8%***	-0.2%
<b>L3</b>	2.0%***	0.9%***	-0.5%***	-0.7%***	0.3%	2.6%***
<b>L4</b>	0.6%	0.5%	0.0%	-1.1%	-2.8%	-5.0%

Note: Effect of an additional year of stay on earnings, with personal characteristics, are evaluated at given years after taking 1<sup>st</sup> derivative on  $\alpha^L_1 * LxYSM + \alpha^L_2 * LxYSM^2 + \alpha^L_3 * LxYSM^3$  with respect to YSM, where  $x = 1, 2, 3$  or 4.

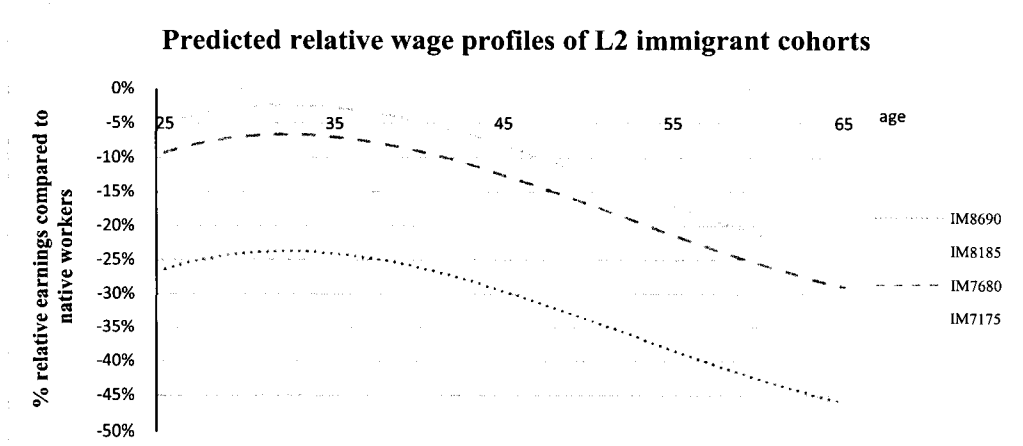
The hypothesis test of significant is performed (Null hypothesis is no additional year effect on earnings)

- Significant at 1% (\*\*\*)
- Significant at 5% (\*\*)
- Significant at 10% (\*)
- Not significant (without \*)

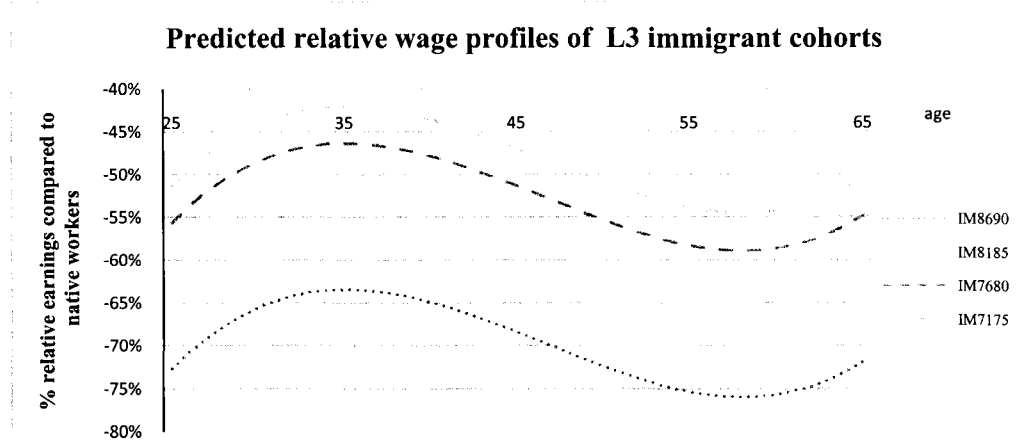
**Figure 1**



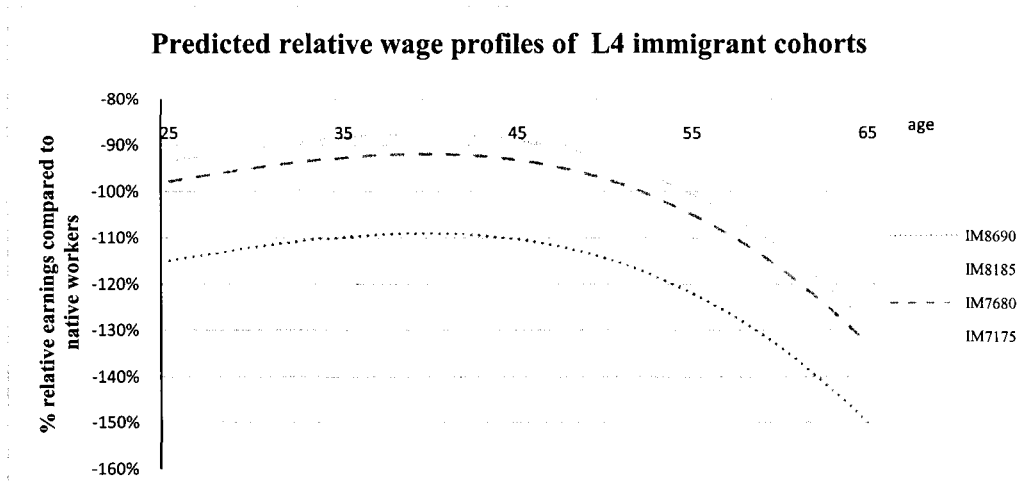
**Figure 2**



**Figure 3**



**Figure 4**



Note: All figures are based on the simulation results from those who migrated at age 20 with comparable personal characteristics.

It is important to stress that though immigrants with proficient English would achieve a smaller wage gap than those with poor English in the Canadian labour market, the duration of time they spend in Canada does not much improve their earnings.

Among the four immigrant English groups, L3 immigrants are noted for gaining the greatest premium to post-immigration experience to reduce earning differentials than

other immigrant English groups. If English-speaking immigrants<sup>11</sup> are likely to look for jobs that involve contact with the English majority while working in Canada, immigrants with proficient English would tend to acquire only Canada specific knowledge. However, immigrants with English as a second language would tend to acquire knowledge specific to Canada, and they would likely improve their English skills during residency. If the English skills acquired during residency are marketable in the Canadian labour market, then the duration of time spent in Canada would contribute to enhancing earning potential. Thus, the premium to years since migration for immigrants with minimal English levels, such as L3, is greater than those with better English skills in the Canadian labour market. It appears that English proficiency and the premium to post-migration experience are substitutes; the greater the English fluency, the less effect time spent in Canada has on earnings.

Even though statistics indicate years since migration somewhat reduce the wage differentials between L4 immigrants and native workers, it is still not clear whether immigrant with no English knowledge actually acquire Canadian specific knowledge during residency. The model does not show any statistical significance on L4's YSMs (see table 5). With a lower education level relative to English speaking immigrants, those with no English knowledge would tend to face higher costs in learning English than the other groups, and this higher cost of learning makes them unable to easily acquire specific knowledge within the Canadian labour market. Thus, duration of residence in

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<sup>11</sup> Kossoudji (1988), McManus (1990), and Carliner (1996) suggest that wage premium for speaking English well rises with education. Immigrants with little education can often find jobs within ethnic enclaves that do not require knowledge of English, but most jobs for well educated workers involve extensive contact with natives.



Canada does not play a significant role for immigrants with no English knowledge to reduce the wage gap that exists with native workers.

**Table 5**  
**F- test on YSMs at each English level**

Null Hypothesis $H_0$ :	F( 3, 292517)	Prob > F
$L1YSM=L1YSM^2=L1YSM^3=0$	44.76	0.000
$L2YSM=L2YSM^2=L2YSM^3=0$	20.14	0.000
$L3YSM=L3YSM^2=L3YSM^3=0$	16.05	0.000
$L4YSM=L4YSM^2=L4YSM^3=0$	0.99	0.395

It would be intuitive to control for job characteristics on a pooled regression because English skill is highly related to the productivity in workplace through either reducing cost of communication or transferring human capital. Therefore, even if all the workers in the same industry or occupation are paid the same wage or salary regardless of their English fluency level, this empirical work may find earnings differentials. Such differences could be due to the majority of English-speaking workers being in high-paying jobs with longer weeks worked, or having full-time rather than part-time work, compared to those with English as a second language. I believe that workers' job characteristics are at least as susceptible to English fluency level as wages earned.

First, immigrants who are not comfortable with English as a second language, generally look for work in certain industries or occupations where their English level and other marketable skills fit. In addition, within the workplace, employers would tend to consider employees' English skill for assigning certain tasks or duties. On the other hand, for English native workers, their choice of industry or occupation is primarily based on skill sets not related to English fluency.

To compare previous estimates and analysis, column (2) presents OLS regression results controlling for both personal and job characteristics. The interpretation for this comparison would be as follows ; (a) the regression controlling only for personal characteristics asks about the performance of each English level of immigrants compared to English-speaking natives based on the personal characteristics of workers. The regression also asks about the performance of each immigrant English group compared to with the performance of native workers who work within the same occupational characteristics. However, this interpretation is weakened by the fact that personal and job characteristics are correlated (Pendakur 2005); and (b) the difference between coefficients in the two types of regression would give a measure to how much each immigrant English group yields an earning disparity compared with a native group due to the job characteristics that they attain.

Column (2) in table 4 shows the relative earnings of each immigrant English group compared with L1 workers. With including job characteristics, L2, L3 and L4 immigrants still face an earning disparity of 17.2%, 62% and 91.7% compared to the group of L1 workers. Another distinction from previous estimations is that all the coefficients on the four English fluency levels and immigrants' time of arrival become smaller with an inclusion of job characteristics in the model. It appears that the inclusion of job characteristics explains 7% to 19% of the wage disparity due to English fluency level. The inclusion of job characteristics has the most impact on L3 and L4 English level immigrants whose wages account for almost 16.9% and 18.6% of the earning disparity, respectively. Whereas, it accounts for 7% of wages lost due to a L2 English level among immigrants.

In addition, the inclusion of job characteristic explains 8% to 10% of the wage disparity across immigrant cohorts. Although, there is the most impact on 96/99 and 91/95 arrival cohorts whose wages account for almost 9.4% and 9.5% of the earning disparity, other earlier immigrant cohorts also face a wage loss of 8% to 9%. Regardless of time of arrival, it seems all immigrant cohorts face a similar wage disparity compared with the native group due to the job characteristics that they attain.

It is likely that immigrants face limited access to jobs they are qualified for because of two factors; their level of English proficiency and immigration status in Canada. It is clear that inferior English skills limit immigrants from utilizing their education, work experience, or other resources that support human capital. Thus, those with poor English skills not able to utilize 100% of their own labour productivity face limited access to good jobs. Whereas, the stigma of immigration status helps explain how the credentials immigrant workers bring to Canada may not be fully valued by Canadian employers simply because such qualifications were obtained from another country. Thus, poor access to good jobs caused by inferior English skills and possibly immigration status could be a primary reason for the earning disparity experienced by immigrants.

## **4: SUMMARY AND CONCLUSION**

This study has empirically investigated the economic assimilation among immigrants in the Canadian labour market, depending on their English fluency level. The analysis has been conducted using 1991, 1996, and 2001 Canadian Census data through both cross-sectional and quasi-panel regressions.

The results from the cross sectional regressions in each census suggest that better English skill improves the earnings of immigrants. I observed that the relative entry wage of recent immigrants compared with native workers has declined throughout the 1990s, regardless of immigrants' English fluency level. For non-recent adult immigrant cohorts, some of L1 and L2 immigrant cohorts earned equal or a little higher wages than native workers, while all of L3 and L4 immigrant cohorts faced wage disparities compared to native workers. This disparity was actually even greater when immigrant cohorts were new to Canada. Over time, most of the immigrant cohorts experienced negative earnings growth regardless of their English levels through the 1990s, but the interpretation on this should be carefully examined due to the possibility of the change in sample composition by existence of many immigrants leaving Canada.

The results from pooled regressions also suggest that there are considerable earning differentials between immigrants and natives, conditional on immigrants' English fluency level. These substantial wage differentials between native and immigrant workers are primarily attributed to lower English fluency levels and, secondly, duration of time spent in Canada. These affect wage earnings because of (1) a lack of ability to fully utilize

their human capital due to lower English skills than native workers, and (2) inadequate possession of knowledge specific to Canada due to a limited duration of residence in Canada.

Another source of wage disparity is that immigrants face limited access to the jobs they are qualified. While ones' immigration status has some impact on gaining full access to Canadian employment, lower English levels carry a far greater impact in terms of limiting employment opportunity.

Finally, among immigrants with L1, L2, or L3 English fluency levels, the L3 immigrant group shows the fastest wage converging rate than other immigrant groups. This observation could be attributed to the likely possibility that most L3 immigrants accumulate both Canadian specific-knowledge and greater English skills during their residency in Canada. Thus, they have a better return on human capital that is complementary with their English skills in the Canadian labour market.

Taken all together, the analysis in this study is consistent with the hypothesis that greater English proficiency enhances the earnings in the Canadian labour market, and it is unlikely to see wage convergence with native workers as immigrants' English skills are low, with other things equal. The relative entry wage of recent immigrants is lower as one's English fluency level is lower, and the lower English would tend to accelerate a rate of negative earnings growth.

When dealing with employment, many immigrants face limited access to jobs they are qualified for due to English skills and immigration status. The degree to which employment is limited tends to be far greater when English levels are low. Furthermore,

immigration status somewhat decreases immigrant employability because foreign credentials tend to be of less value in the Canadian labour market.

Although having the ability to speak English alone does not guarantee economic success in Canada, that being paid the same wage as native workers, other things equal, it might contribute to reducing earnings differentials over time. Acquiring greater English skills and labour market knowledge during residency enhances one's ability to utilize existing human capital gained in one's home country and to acquire further human capital for higher earning potential over time in Canada. However, those with a greater English proficiency experience fewer benefits in terms of increased earnings than immigrants who migrate with lower English skills.

## REFERENCE LIST

- Borjas, G. 1995. "Assimilation and Changes in Cohort Quality Revisited: What Happened to Immigrant Earnings in the 1980s?" *Journal of Labor Economics*, Vol.13, No.2, pp.201-245.
- Baker, M. and D. Benjamin. 1994. "The Performance of Immigrants in the Canadian Labor Market," *Journal of Labor Economics*, Vol.12, No.3, pp.369-405.
- Carliner, G. 2000. "The Ability of U.S. Immigrants: Assimilation and Cohort Effects," *International Migration Review*, Vol.34, No.1, pp.158-182.
- \_\_\_\_\_. 1996. "The Wages and Language Skills of U.S. Immigrants," *Working Paper No. 5763*, Cambridge, MA: National Bureau of Economic Research.
- Chiswick, B.1991. "Speaking, Reading, and Earnings among Low-Skilled immigrants," *Journal of Labor Economics*, Vol.9, No.2, pp.149-170.
- Chiswick, B. and P. Miller. 2002. "The Complementarity of Language and Other Human Capital: Immigrant Earnings in Canada," *Discussion Paper No. 451*.
- \_\_\_\_\_. 2001. "Immigrant earnings: Language skills, linguistic concentrations and the business cycle," *Journal of Population Economics*, Vol.15, pp. 31-57.
- DeVoretz, D. 1999. "The brain drain is real and it costs us," *Options Politiques in the Institute for Research on Public Policy*.
- Frenette, M. and R. Morissette. 2003. "Will they ever converge? Earnings of immigrant and Canadian-born workers over the last two decades," *Analytical Studies Branch research paper series*.
- Kossoudji, S. 1988. "English Language Ability and the Labor Market Opportunities of Hispanic and East Asian Immigrant Men," *Journal of Labor Economics*, Vol.6, No.2, pp.205-228.
- McManus, W. 1990. "Labor Market Effects of Ethnic Enclaves," *Journal of Human Resources*, Vol.25, No.2, pp. 228-252.
- Park, J. 1999. "The Earnings of Immigrants in the United States: The Effect of English-Speaking Ability," *American Journal of Economics and Sociology*, Vol.58, No.1, p.43-56.
- Pendakur, K. and R. Pendakur. 2006. "Aboriginal Earnings," *under review*.

- Schaafsma, J. and A. Sweetman. 2001. "Immigrant earnings: age at immigration matters," *Canadian Journal of Economics*, Vol. 34, No. 4, pp. 1066-1099.
- Tainer, E. 1988. "English Language Proficiency and the Determination of Earnings among Foreign-Born Men," *The Journal of Human Resources*, Vol.23, No.1, pp. 108-122.