

PRELIMINARY AND INCOMPLETE

**The Economic Assimilation of Urban Immigrants in Canada during the Wheat Boom Era  
of 1896-1913**

by

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## **1. Introduction**

At the turn of the century Canada experienced a significant shift in economic conditions. The last three decades of the nineteenth century were characterized by slow economic growth. However, in the subsequent “Wheat Boom” period Canada experienced a period of unprecedented economic prosperity. The economic assimilation of immigrants arriving in Canada prior to 1900 was neither swift nor complete, at least for U.K. immigrants living in Toronto and Montréal (Green and MacKinnon, 2001). The focus of this paper is to investigate the assimilation progress of both British and continental European immigrants over the Wheat Boom period with data from the 1901 and 1911 censuses. I consider the assimilation progress of these immigrant groups in the two western cities of Winnipeg and Vancouver, where unlike Toronto and Montréal, almost all residents were either immigrants from other provinces or other countries. Conversely, I also consider economic assimilation in Halifax; a city where the proportion of immigrants is relatively small.

A digitized version of the 1911 is not yet available (but should be by late summer, 2007). Thus, the primary focus of this paper relates to how immigrants assimilated in the newly settled cities of Winnipeg and Vancouver as of 1901.

## **2. The Economic Assimilation of Immigrants: Theory and Evidence**

### *2.1 Theory and Post-World War II Evidence*

In general it is expected that immigrants will have initial earnings below native-born levels, *ceteris paribus*. Immigrants typically arrive with few country specific skills such as fluency in the host country’s language, knowledge of the host country’s institutions and labour market opportunities, or personal contacts. In addition, immigrants may have a lower reservation wage and employers will typically lack full information regarding the quality of the immigrant’s pre-migration credentials. Thus, the typical immigrant is at an initial disadvantage compared to the native-born. Clearly, the degree of disadvantage will be lower the more similar the host and source country, and possibly also the larger the fraction of the labour force (and employers of labour) who are immigrants from the same source country.

It is expected that the initial disadvantage experienced by immigrants will dissipate over time as country specific skills are acquired. Whether immigrants' earnings will catch-up or exceed the native-born after these skills are learned depends on their average level of characteristics such as ability and motivation. If, in terms of these characteristics, immigrants are randomly selected from their source country, then, holding other determinants of earnings constant, one would expect that average immigrant earnings would eventually converge to the native-born level<sup>1</sup>. However, if they are systematically more or less motivated, then subsequent earnings growth could be either higher or lower than for the native-born.

Chiswick (1978) finds that post-World War II immigrants in the United States have steeper earnings profiles than the native-born. Therefore average immigrant earnings eventually overtake those of native-born workers with the same characteristics. He justifies this finding with a selection argument claiming that immigrants are positively selected from source countries because only immigrants with high ability find it advantageous to migrate. However, Borjas (1987) argues that immigrants are not always selected in a positive manner and asserts that selection depends on the wage distributions in the source and host country. He claims that positive selection will only occur if there is a higher return for skill in the host country than the source country and also that the correlation between the skills valued in the host and source country is sufficiently high. Conversely, negative selection will occur if there is relatively large variation in wages in the source country and a narrow wage structure in the host country. Low skilled workers will find it advantageous to migrate as insurance is effectively provided by the compressed wage distribution in the host country.

A number of Canadian studies provide evidence for the post-World War II era in Canada that immigrants do indeed have lower average initial earnings relative to the native-born.<sup>2</sup> However, there is a lack of consensus among these studies on the subsequent earnings growth of immigrants and whether or not they will catch-up to the native-born. Bloom, Grenier and Gunderson (1994) using data from the 1971, 1981 and 1986 Canadian censuses find that successive immigrant cohorts are experiencing difficulty assimilating. They find that immigrant cohorts arriving before the 1970s will eventually achieve earnings equality with the native-born,

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<sup>1</sup> This is assuming no discrimination and that the distribution of unobservable characteristics such as ability and motivation are similar between host and source countries.

<sup>2</sup> Bloom and Gunderson, 1989; Bloom, Grenier and Gunderson 1994; Baker and Benjamin, 1994; MacDonald and Worswick, 1998.

but cohorts afterwards (especially in the early 1980s) could not be expected to assimilate over a reasonable work life. They point to changes in immigration policy that possibly indicates recent immigrants are negatively selected from source countries<sup>3</sup>. Baker and Benjamin (1994) using the same census data also find that there is a decline in the assimilation prospects of successive cohorts and paint a more pessimistic view. Conversely, MacDonald and Worswick (1998) find no evidence of worsening cohort quality when using data from Statistics Canada's Survey of Consumer Finances that cover the latter half of the 1980s. They find that estimated entry and assimilation effects of immigrants are sensitive to macroeconomic conditions. It appears that there was a decline in the returns for immigrants who arrived in the early 1980s because of the recession in that period.

Patterns of declining assimilation among successive immigrant cohorts have also been found in the United States. The first empirical finding of this phenomenon was by Borjas (1985) when considering specific immigrant cohorts using the 1970 and 1980 American Census. In addition, Bloom, Grenier and Gunderson (1994) estimate their assimilation model on the 1970, 1980 and 1990 United States censuses. Their estimates reveal that recent cohorts are not assimilating as quickly compared with earlier cohorts. However, their estimates of how long it would take for immigrants' earnings to be at par with the native-born are on average about half as long as the Canadian estimates.

## *2.2 Ninetieth Century Immigrants: Background and Evidence*

The immigrant composition in terms of country of origin in Canada is quite different at the turn of the century than in the post-World War II era. In 1971 only about one-third of immigrants living in Canada were from the United Kingdom. However, this proportion was much higher at the turn of the century; about 60 and 50 percent for 1901 and 1911, respectively.<sup>4</sup> Thus, the majority of immigrants at this time share a similar language, culture and political institutions with most of the Canadian-born.

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<sup>3</sup> During the period of their data Canadian immigration policy changed from having a high emphasis on skills to family reunification.

<sup>4</sup> Source: *Census of Canada*, 1951, vol. I table 44.

British immigrants are commonly thought of as ‘invisible immigrants’ but there are many reasons to expect them to have an initial earnings disadvantage. Writings by Reynolds (1931) suggest that British immigrants are not exactly ‘invisible’ when they first arrive. Their style of clothing, habits and attitudes immediately set them apart from Canadians. More importantly, some British immigrants have very distinct dialects and strong accents that may inhibit their ability to communicate with the Canadian-born. Reynolds claims that “the Canadian tends to withdraw from close association with the strange newcomer” (Reynolds, 1931, p.211). Certainly if these attitudes were prevalent among the Canadian-born, opportunities would be limited for immigrants in the labour market contributing to lower initial wages. However, over time if these cultural and social differences disappear then subsequent earnings growth would depend in part on their average ability and skills relative to the native-born.

Woodsworth (1909) argued that English immigrants were negatively selected in terms of their ability and skill. He claims that, “the Scotch, Irish and Welsh have done well. The greater number of failures have been among the English” (Woodsworth, 1909, p. 51). His justification is that English immigrants have difficulty adapting and that many of the migrants to Canada were failures from cities in England. He claims that remittance men, unemployed workers and unwanted orphans were sent to Canada in large numbers.

Reynolds portrays all British immigrants as being positively selected from their mother country in terms of skills. He claims that in Montréal there was a great demand for artisans, boilermakers, machinists, blacksmiths and other skilled trades that British workers were familiar with (Reynolds, 1935, p.93). Also Reynolds observes that “in many cases their services were solicited in Britain and their passage to Montréal paid by the employer” (p.93). This suggests that, at least for British blue-collar immigrants, it may have been possible for their earnings to subsequently converge to the Canadian-born.

While the majority of immigrants in Canada at the turn of the century were from the U.K. there was also a sizeable inflow from continental Europe. Immigrants from Northern, Eastern and Southern Europe accounted for approximately 18 percent of the total immigrant population in 1901<sup>5</sup>. These European immigrants are a diverse group coming from a wide range of countries and for a variety of reasons. Thus it is difficult to make any general claims about whether these immigrants are on average negatively or positively selected. However, one would expect that

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<sup>5</sup> Source: *Census of Canada*, 1951, Vol I, table 44.

these groups would face even lower initial earnings than U.K. immigrants because of their non-English mother tongue and unfamiliarity with British institutions and cultural norms.

Woodsworth's writings on these immigrants suggest that their ability to assimilate into Canadian society deteriorates as you move clockwise from Northern to Southern Europe. "The Scandinavians are very ambitious, are anxious to become Canadian citizens, and readily adapt themselves to Canadian ways" (p.91). Positive observations are also made about Germans and Mennonites. However, he claims that Galician and Polish immigrants are typically uneducated and frequently in trouble with the law. The least desirable European immigrants, according to Woodsworth, are from the shores of the Eastern Mediterranean. Although Woodsworth and others provide interesting and detailed accounts of many immigrant groups, the evidence offers is anecdotal.

An empirical study by Green and MacKinnon offers a more rigorous account of the economic assimilation process. They consider the urban centers of Toronto and Montréal using detailed earnings data from the 1901 census and assess the relative performance of immigrants who arrived in the nineteenth century. Their results show that British immigrants were not rapidly assimilating into the labour market unlike what is suggested by many writers at this time. However, they find that estimated years to earnings equality with the native-born is substantially lower among a subset of blue-collar workers in Montréal, substantiating Reynold's claims about British workers being positively selected. In addition, their estimates show that the difference in earnings profiles between continental European and British immigrants were not very different.

The empirical literature on immigrants to the United States is more substantive than in Canada and differs in its use of data and geographic focus. Early investigations by McGouldrick and Tannen (1977) and Blau (1980) fit wage functions to country-wide grouped data from the U.S. Immigration Commission (1911). The former study reveals that earnings of immigrants from North-western Europe were similar to the native-born. However, immigrants from Southern and Eastern Europe were about 10 percent lower than the native-born. Blau, controlling for years since migration, finds that immigrants from North-eastern Europe caught up to the native-born in about 11 years, whereas immigrants from Southern and Eastern Europe took 16 years to catch up. Overall, these studies suggest that American immigrants did not have long-term difficulty assimilating. However, their data covers only manufacturing and mining industries.

In other American studies that use disaggregated data but consider a wider array of industries find that late nineteenth century immigrants assimilated poorly. Eichengreen and Gemery (1986) use data for the state of Iowa for 1894. They focus on the relative importance of skills acquired prior to arrival in the United States and afterward. They find that immigrants that have prior knowledge of a trade and the ability to secure a job have initial earnings approximately equal to the native-born. However, subsequent earnings growth is estimated to be lower than the native-born revealing that skills learned abroad are not easily transferred. Hanes (1996) uses data from state labour surveys for Michigan and California and investigates the outcomes of immigrants from North-western Europe. His results suggest that these immigrants will not catch up to the native-born in either state.

Hatton (1997) shows that the typical way of specifying age as a quadratic in the earnings function is not appropriate for the Michigan and California datasets used by Hanes. He shows that the data is fitted better when age is modelled using a linear-spline with a knot at age 25. The results from this improved specification overturn the results put forth by Hanes and reveals that immigrants assimilated quite well.

### *2.3 Cross-section versus Pseudo Cohort Estimates*

All of the studies discussed in the last sub-section use cross-sectional data to infer immigrant earnings growth over time. Borjas (1985) pointed out that estimates of assimilation profiles from this type of data are potentially biased. In order for cross-sectional assimilation estimates to be accurate all immigrant cohorts must have a similar distribution of unobserved characteristics (such as ability and motivation). This is because cross-section estimates essentially attribute the differential in average earnings of previous and recent cohorts to assimilation. Yet the differential could simply be due to differences in unobserved characteristics between the cohorts and not to genuine earnings assimilation. Borjas proposes a solution which involves tracking immigrant pseudo cohorts over successive censuses. Using this methodology he showed that there were significant biases due to these “cohort effects” in Chiswick’s (1978) cross-section estimates using the 1970 American census. I intend to employ this methodology when examining the earnings growth of immigrants over the 1901 and 1911 censuses.

Minns (2000) is the first historical study to account for possible cohort effects while assessing relative immigrant progress. He estimates earnings growth for different pseudo cohorts over the 1900 and 1910 American censuses and finds that cross-section estimates are only slightly biased by cohort effects<sup>6</sup>. Overall, this article suggests that immigrants were assimilating well in the U.S. labour market at this time. Significant mobility into white-collar occupations was found for immigrants from all sources. Estimates also suggest that immigrants would generally achieve economic assimilation with the American-born in their working life.

#### *2.4 What to expect for Canada?*

It is not clear what to expect about the relative immigrant progress in Canada over the wheat boom period. The anecdotal evidence provided by Reynolds and Woodsworth may not be an optimal source on which to base expectations. These writers suggested that most immigrants from the U.K. were assimilating well, with a subset of the English possibly being an exception. Immigrants from Eastern and Southern Europe were portrayed as having the most difficult time assimilating. However, the evidence from Green and MacKinnon (2001) reveals that these early writings do not provide an entirely accurate picture. Most British immigrants were not assimilating quickly and the Europeans did not seem to have a severe disadvantage relative to their U.K. counterparts.

Is it possible to infer anything from the American experience in the first decade of the twentieth century? Evidence from Minns (2000) suggests that at this time immigrants to the U.S. fared relatively well. Given that American economic growth was not nearly as robust as Canada's at this time, it is possible to expect rapid assimilation in Canada. Over the period 1900-1910 Canada's compound annual growth rate of real GDP was 3.2 percent compared to 1.8 percent in the United States. However, the immigrant composition was quite different in the two countries. Also, these two countries had different attitudes towards assimilation; there was a greater emphasis in the United States on unity and building the nation compared with Canada.

It is reasonable to expect immigrants to fare better in Winnipeg and Vancouver than in eastern cities. These two cities were newly settled areas with an almost entirely new population. It was

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<sup>6</sup> Since the American census does not contain detailed earnings information (until 1940) worker's earnings are inferred from their occupation. Thus Minns' results do not account for variation in earnings within an occupation; however workers are classified into a large number (192) of occupations.



only less than twenty years before 1901 that there was an efficient means of transportation to these areas from the rest of the country. The Canadian Pacific Railway (CPR) linking Eastern and Western Canada made its way to Winnipeg in May 1883 and eventually to British Columbia in 1885. Shortly thereafter the population of these two cities grew substantially<sup>7</sup>. In 1901 almost half of the people in these two cities were immigrants from other countries. Among the Canadian-born only about one-third were born in their province of residence. In contrast to the eastern cities, the majority of the Canadian-born in the western cities may not have had extensive social networks or other institutional advantages relative to immigrants. The evidence provided below seems to corroborate this notion.

### **3. Data and Sample Selection**

#### *3.1 1901 and 1911 Census Data*

The 1901 dataset used in this study is a combination of two separately collected samples. The first source is from Alan Green and Mary MacKinnon who collected urban samples of Montréal, Toronto, Halifax, Winnipeg and Vancouver.<sup>8</sup> The second source is a five percent random sample of the 1901 census manuscript collected and digitized by the Canadian Families Project (CFP) at the University of Victoria. The five cities were selected from this source and merged together with the Green and MacKinnon sample. Duplicate observations between these separate sources were identified and removed.<sup>9</sup> The 1911 data I intend to use is a five percent sample of the 1911 census manuscript currently being digitized by the Canadian Century Research Infrastructure (CCRI). Appendix table 1 compares the CFP and Green and MacKinnon samples with the population in terms of their age distribution, religion, birthplace and years since migration. The samples well represent the population in all of these dimensions.

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<sup>7</sup> The population of Winnipeg in 1881 was only 7,985 but grew to 42,340 in 1901. In 1886 Granville was incorporated as the city of Vancouver and had a mere 1,000 inhabitants, but by 1901 had grown to 27,198. (Source: 1881 and 1901 Canadian census Volume I table I).

<sup>8</sup> The MacKinnon sample is clustered by sub-district and hence could artificially lower estimated standard errors as there may be positive correlation among the observations within a sub-district. In the subsequent regression analysis the 'cluster' command in Stata is used to appropriately adjust the standard errors.

<sup>9</sup> Duplicates were identified by a variety of variables including district, sub district, polling number, page and line number in the census. For all five cities the number of duplicates found was less than 2 percent of the sample.

The 1901 census is a rich source of information that allows the identification of the immigrant assimilation process. Unlike the American census at this time, detailed earnings are available for all workers, including any extra income earned outside of their main occupation. The number of months worked and whether or not the respondent was an employee or employer was also collected. Most importantly the number of years since migration is recorded for all immigrants.

### *3.2 Sample Selection*

I am concerned with modelling only male workers between the ages of 17 and 64 years of age<sup>10</sup>. Although children under the age of 17 at this time typically worked full-time there could be systematic differences in the age at which immigrant parents allow children to begin work (Green and MacKinnon, 2001). The sample becomes thin for workers over age 65 and there is no assurance their recorded earnings do not include annuities or other non-employment income. In addition, workers who have reported yearly earnings less than \$60 and greater than \$3,600 were dropped as well as the self employed. A small number of observations were excluded for immigrants who did not report years since migration since it would be impossible to measure their assimilation effect. Finally, workers who were living with their employers were not kept in the sample as their reported earnings likely do not reflect their total compensation. See appendix table 2 for information on the size of this restricted sample.

## **4. Descriptive Statistics**

### *4.1 Age-earnings Profiles*

Figures 1-5 below show separate age-earnings profiles of immigrant and Canadian-born groups for all five cities.<sup>11</sup> The estimated profiles have the typical concave shape indicating that

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<sup>10</sup> Workers with missing earnings were removed from the sample, however worker's with missing occupations were not.

<sup>11</sup> In figure 1, age-earnings profiles for bilingual French Canadians are also shown. I also considered differentiating between native-born English and French mother-tongue in Halifax, but only a small number of workers in this sample were French Canadians. The immigrant group excludes Newfoundlanders.

earnings growth is highest for workers less than 30 years of age<sup>12</sup>. In all cities except Vancouver, earnings differentials between immigrants and the Canadian-born are small until workers are in their mid-thirties and thereafter diverge with the latter group typically having an earnings advantage. This trend is also found for a subset of bilingual French Canadians in Montréal; except this group typically has lower earnings than English mother tongue and immigrant workers after about age 30. In Halifax, there is no difference in overall average earnings between immigrants and the Canadian-born when considering workers aged 35 to 60<sup>13</sup>. Conversely, over this age range Canadian-born earnings are greater than for immigrants by 22, 16 and 35 percent, respectively for Montréal, Toronto, and Winnipeg. In Vancouver, earnings differentials are smaller throughout the entire life-cycle and are only about 10 percent higher on average for the Canadian-born.

There are also significant regional differences in the level of average earnings between the eastern and western cities, with earnings being 29 and 23 percent lower in the east for the Canadian-born and immigrants respectively.<sup>14</sup> However, these higher nominal wages are not necessarily indicative of a higher standard of living. Emery and Levitt (2002) who construct price indices for fifteen cities at this time find that before World War I western cities had the highest cost of living. Their estimates of real wages for machinists in 1901 are similar between Toronto, Montréal, Halifax and Winnipeg at about 30 cents per hour. The exception is Vancouver where the real wage for machinists is about 40 cents per hour. Also, real wage estimates for common labouring occupations in 1913 are roughly the same in all five cities considered in this paper<sup>15</sup>. Thus, with the possible exception of high skilled workers in Vancouver, the higher nominal wages in the west were offset by higher prices for food, housing and other goods.

The age-earnings profiles suggest that younger immigrants and immigrants who live in Vancouver are not at a significant disadvantage to the Canadian-born. However, the majority of immigrants are at a later stage in their life-cycle and there are systematic differences in other characteristics between the Canadian-born and immigrants from the U.K. and Europe.

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<sup>12</sup> Other studies have estimated similar age-earning profiles: see Green and Mackinnon (2001), Hatton (1997) and Minns (2000).

<sup>13</sup> I chose not to include workers over age 60 because the sample is very thin at these ages, especially in Halifax.

<sup>14</sup> These differences are highly statistically significant. There are also significant differences between cities in the west and east but are small relative to the two geographic regions.

<sup>15</sup> Estimates are not available for 1901.

Figure 1: Montréal Age-Earnings Profiles

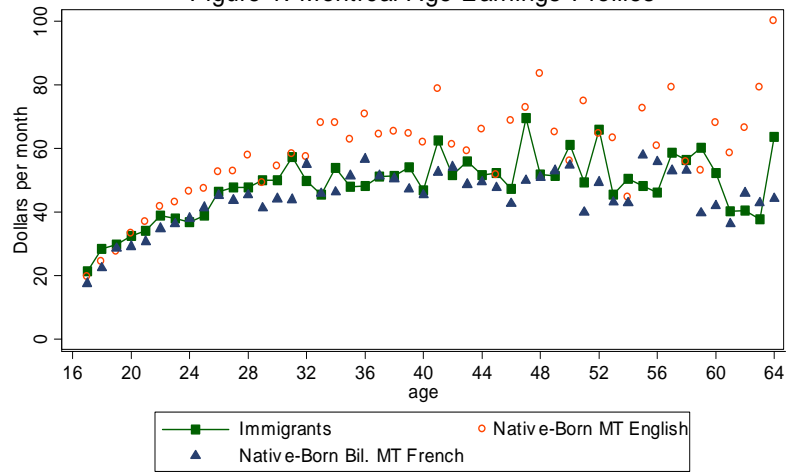


Figure 2: Toronto: Age-Earnings Profiles

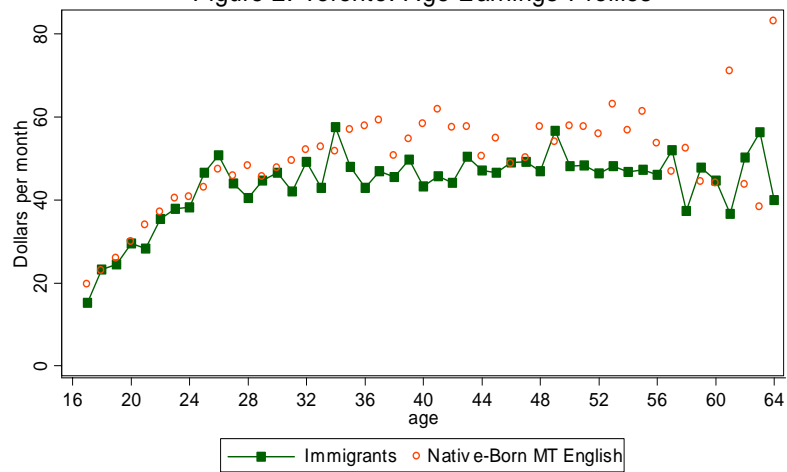


Figure 3: Halifax: Age-Earnings Profiles

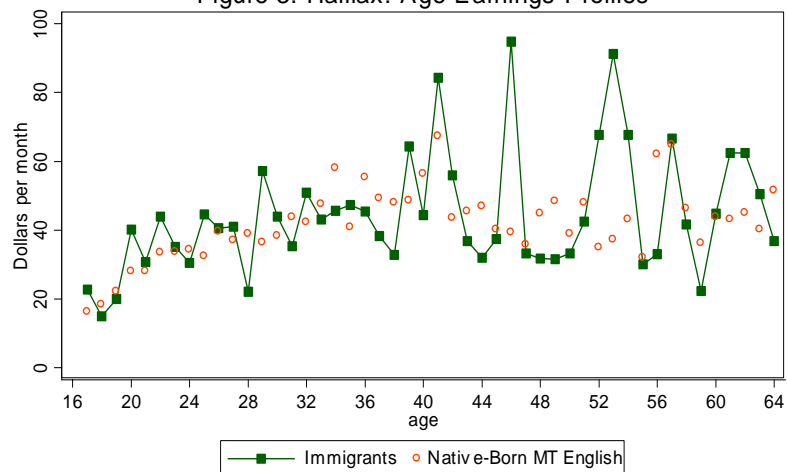


Figure 4: Winnipeg Age-Earnings Profiles

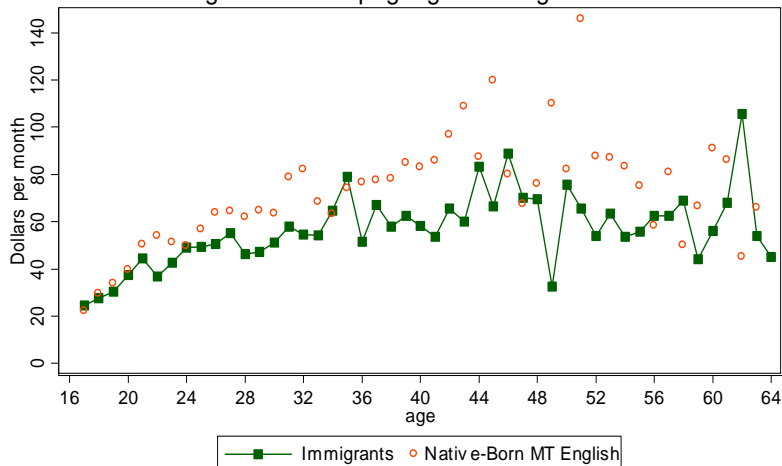
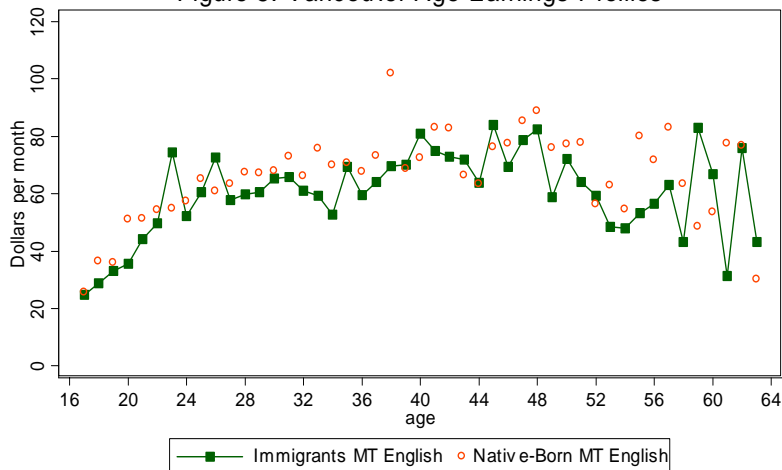


Figure 5: Vancouver Age-Earnings Profiles



#### 4.2 Summary Statistics

The average age of immigrants is higher than for the Canadian-born workers in all cities (tables 1 and 2). Around 70 percent of immigrants in all five cities are over 30 years of age compared to only about half of the Canadian-born. The percentage of workers aged 50-64 is also about twice that for immigrants than the Canadian born in all five cities. Thus, many immigrants have greater potential experience but it is at these higher ages that Canadian-born earnings typically exceed those of immigrants.

The distribution of immigrants by birthplace reveals that most immigrants are from the U.K., especially in Toronto and Vancouver. Within the subset of U.K. immigrants, English immigrants

account for well over half of the total<sup>16</sup>. Irish immigrants are more likely to be found relative to Scottish immigrants in the east with the opposite being true in the west. Montréal and Winnipeg have the highest proportion of European immigrants accounting for just over 20 percent. American immigrants make up a small fraction of the total with the exception of Winnipeg and Montréal where they account for almost 15 percent. The only city with a notable number of immigrants from Newfoundland is Halifax with 23 percent.

With the exception of Toronto, average monthly earnings differ between European and U.K. immigrants. Since the latter group was in Canada on average almost twice as long as the former group this is not surprising<sup>17</sup>. Also U.K. immigrants speak the same language as the English Canadian-born and are significantly more likely to be able to write than were European immigrants. Mean earnings also differ between the Canadian-born and immigrant groups. In the two western cities average earnings are typically higher for the Canadian-born relative to the immigrants,<sup>18</sup> while in the east this is only true for Canadian-born English mother tongue workers in Montréal. This differential could reflect the relatively lower estimated mean years in Canada for immigrants in these western cities. Immigrants in the east have had more time to assimilate relative to the west. However, the vast majority of the Canadian-born have also recently settled in these areas. The percentage of Canadian workers born in Manitoba and British Columbia is only 13 and 3 percent respectively for Winnipeg and Vancouver. The higher earnings for these native-born migrants might be due to the portability of their Canadian specific human capital.

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<sup>16</sup> This includes immigrants from Wales and the Channel Islands.

<sup>17</sup> The exception is Vancouver where the difference in mean years in Canada between the European and U.K. immigrants is only 4 years. However, this city has the second smallest difference in monthly earnings between these immigrant groups.

<sup>18</sup> These differences are statistically significant at 5 percent level except for in Vancouver where you cannot reject the hypothesis that the Canadian-born and U.K. immigrants have different earnings.

Table 1. Summary Statistics: Restricted Sample of Working Men (Ages 17-64), Montréal, Toronto and Halifax

	Montréal		Toronto		Halifax	
	Immigrant	Canadian -Born	Immigrant	Canadian -Born	Immigrant	Canadian -Born
Mean monthly earnings (of						
European/U.K. immigrants or	43.4	51.2	43.9	44.2	38.5	38.1
Canadian-born English/French	49.8	41.0	43.9	n/a	45.2	n/a
mother tongue)						
Mean Age	36.9	32.9	38.8	30.5	38.5	32.6
% Ages 17-29	31.8	47.4	25.0	55.0	24.6	49.7
% Ages 30-49	48.4	41.2	52.6	38.2	54.3	37.3
% Ages 50-64	19.8	11.5	22.4	6.8	21.2	13.0
% Born in England	30.0		54.5		45.1	
% Born in Scotland	10.9		11.6		5.5	
% Born in Ireland	14.5		18.2		12.0	
% Born in Europe	22.0		7.0		7.5	
% Born in U.S.	13.7		6.5		4.8	
% Born in NFLD	4.4		0.7		22.9	
% Born in Province of residence						
(of the Canadian-born)		93.5		94.8		94.9
Mean Years in Can. UK	19.0		21.6		19.0	
Mean Years in Can. U.S.	16.3		17.7		11.0	
Mean Years in Can. Europe	10.7		11.6		10.9	
Mean Years in Can. NFLD	15.0		9.8		10.4	
% Bilingual (of U.K.						
immigrants or Canadian English	25.1	52.0	n/a	n/a	n/a	n/a
mother tongue)						
% Speaking English (of						
European immigrants or	77.7	79.9	90.2	n/a	95.2	n/a
Canadian French mother						
tongue)						
% Ability to Write ( of						
European/U.K. immigrants or	64.7	98.4	77.9	89.7	90.9	95.5
Canadian English/French	94.6	86.7	98.5	n/a	96.7	n/a
mother tongue)						
Protestant	51.4	15.3	84.5	84.3	61.8	52.4
Roman Catholic	36.7	84.3	11.9	14.7	33.1	45.6
Jewish	10.5	0.1	3.0	0.2	2.7	0.1
Sample Size	1,779	6,262	1,898	3,581	293	1,307

Table2. Summary Statistics: Restricted Sample of Working Men (Ages 17-64), Winnipeg and Vancouver

	Winnipeg		Vancouver	
	Immigrant	Canadian-Born	Immigrant	Canadian-Born
Mean monthly earnings (of European/U.K. immigrants or Canadian-born English mother tongue)	41.9 59.6	63.5	56.6 62.7	65.1
Mean Age	34.8	32.0	36.1	33.1
% Ages 17-29	36.9	51.2	31.3	43.0
% Ages 30-49	50.0	39.0	54.2	47.9
% Ages 50-64	13.2	9.8	14.5	9.0
% Born in England	39.8		49.7	
% Born in Scotland	12.2		15.2	
% Born in Ireland	6.8		9.0	
% Born in Europe	26.0		8.0	
% Born in U.S.	9.0		12.0	
% Born in NFLD	0.4		0.7	
% Born in Province of residence (of Canadian-born)		13.0		2.7
Mean Years in Can. UK	15.8		14.0	
Mean Years in Can. U.S.	12.4		11.1	
Mean Years in Can. Europe	9.3		11.0	
Mean Years in Can. NFLD	3.4		7.8	
% Speaking English (of European immigrants)	84.0		80.6	
% Ability to Write ( of European/U.K. immigrants or Canadian English)	79.8 98.2	99.2	80.6 98.5	99.0
Protestant	83.9	80.9	85.8	87.5
Roman Catholic	12.4	17.9	10.4	10.3
Jewish	2.0	0.1	0.7	0.1
N	972	1,144	902	1,023

#### 4.3 Occupational Distribution of Immigrants and Canadian-born

The Canadian-born are more likely to be in clerical positions than immigrants<sup>19</sup> (table 3 and 4 below). The difference in the proportion tends to be slightly less among older workers suggesting a small amount of mobility of immigrants into higher paying positions<sup>20</sup>. The ability to speak English is critical in these positions and likely explains why European immigrants are less likely to be in clerical positions than their U.K. counterparts. Generally immigrants were as likely as the Canadian-born to be in craft and operative positions. This finding supports Reynolds' claim that many British immigrants should assimilate rapidly into urban labour markets as they have the skills required for various blue collar occupations. However,

<sup>19</sup> Occupations were classified into groups using the 1940 census classification (Edwards, 1940).

<sup>20</sup> Immigrant age is positively correlated with years since migration.



immigrants and French Canadians in Montréal are more likely to be in low paying and possibly dangerous labouring occupations.

Table 3. Occupational Distributions: Restricted Sample of Working Men (Ages 17-49), Montréal, Toronto and Halifax

	Montréal		Toronto		Halifax	
	Immigrant	Canadian-Born	Immigrant	Canadian-Born	Immigrant	Canadian-Born
<b>Age Group (17-29)</b>						
Apprentice	1.4	1.5	2.5	2.6	-	1.1
Clerical	20.5	27.8	17.3	29.8	20.8	26.2
Craft	22.6	22.9	25.1	22.4	20.8	26.8
Domestic service	0.7	0.4	0.4	0.3	-	-
Labourer	20.3	16.1	16.2	9.5	19.4	24.2
Operative	21.5	21.6	28.4	25.2	19.4	10.6
Other service	2.6	2.1	4.4	2.7	9.7	3.5
Professional	5.4	2.9	1.5	3.0	2.8	2.6
Manager	2.3	1.1	0.8	1.6	1.4	1.4
Protective Service	0.4	0.6	0.4	0.7	-	1.1
Other/Unknown	2.4	3.1	2.7	2.3	5.6	2.2
Sample Size	576	2,967	474	1,969	72	650
<b>Age Group (30-49)</b>						
Apprentice			-	0.1	-	-
Clerical	16.9	17.5	17.3	22.8	12.0	20.7
Craft	27.7	28.8	29.0	29.6	25.2	24.0
Domestic service	0.3	0.1	0.5	0.5	-	0.2
Labourer	23.5	22.0	20.9	12.1	25.2	24.6
Operative	17.7	18.6	20.1	19.2	13.8	13.5
Other service	2.6	2.0	3.5	2.6	7.6	4.5
Professional	4.3	3.9	2.6	3.5	6.9	4.3
Manager	3.3	3.0	2.3	4.9	5.7	3.9
Protective Service	1.7	1.6	0.9	2.5	1.9	1.2
Other/Unknown	0.8	2.7	2.8	2.3	1.9	2.9
Sample Size	878	2,578	998	1,367	159	488

Note: The self-employed are not included in this sample. There are very few workers in the domestic service occupations as these jobs have a higher incidence of workers living with their employer which are excluded in the restricted sample.

Table 4. Occupational Distribution: Restricted Sample of Working Men (Ages 17-49), Winnipeg and Vancouver

	Winnipeg		Vancouver	
	Immigrant	Canadian-Born	Immigrant	Canadian-Born
<b>Age Group (17-29)</b>				
Apprentice	0.6	0.2	1.4	0.9
Clerical	25.1	41.0	21.6	26.6
Craft	25.1	21.5	19.9	19.3
Domestic service	0.3	0.2	-	-
Labourer	33.2	14.7	21.2	17.5
Operative	8.6	1.9	15.6	18.0
Other service	3.3	8.9	5.0	3.6
Professional	2.0	6.7	4.3	2.7
Manager	1.1	1.9	2.1	4.1
Protective Service	0.3	0.3	1.4	0.2
Other/Unknown	0.6	1.5	8.5	7.0
Sample Size	359	586	282	440
<b>Age Group (30-49)</b>				
Apprentice	-	-	-	-
Clerical	20.6	26.9	14.3	17.8
Craft	30.5	29.2	22.3	29.1
Domestic service	0.2	-	-	-
Labourer	27.6	17.5	20.9	15.7
Operative	7.0	9.2	17.0	14.5
Other service	4.5	2.9	3.3	3.2
Professional	4.9	6.3	6.1	7.1
Manager	3.9	6.7	6.1	4.5
Protective Service	0.4	1.1	1.6	1.4
Other/Unknown	0.4	0.2	8.4	6.5
Sample Size	486	446	489	490

Note: The self-employed are not included in this sample. There are very few workers in the domestic service occupations as these jobs have a higher incidence of workers living with their employer which are excluded in the restricted sample.

## 5. Econometric Model

The multivariate analysis used here to assess the relative immigrant progress follows that of Chiswick (1978)<sup>21</sup>. Thus the regression model applied to the 1901 census data is an extension of the human capital earnings function that includes years since migration as a proxy for the returns to Canadian-born experience. The following pooled regression is estimated for all five cities under consideration:

<sup>21</sup> Green and MacKinnon (2001) and Bloom et al. (1994) also use this specification.

$$\ln y = X\beta + \sum_{j=1}^J \alpha_j I + \delta YSM(I) \quad (1)$$

The dependant variable is the natural logarithm of monthly earnings.  $X$  is a vector of variables believed to be important in explaining earnings. Included in this vector is age which acts as a proxy for work experience; there is no information on schooling and thus it is not possible to calculate potential experience<sup>22</sup>. In addition, a dummy variable for whether a worker can write is included as a proxy for education. An indicator variable for whether a worker is married is also considered. A variety of dummy variables aimed at capturing the diversity of mother tongues in Montréal is considered and a non-English mother tongue dummy variable is included for the other cities. The religion and occupation of workers is also included in the vector of explanatory variables. It is conceivable that not being part of the dominant religion group could affect a worker's labour market opportunities. Occupation dummy variables are included to access how estimates of demographic characteristics matter after controlling for systematic differences in occupation group. The second term included on the right hand side in (1) includes a dummy variable for each group of immigrants<sup>23</sup>. The third term contains the number of years since migration and is zero for the Canadian-born. Thus,  $\alpha_j$  is the entry effect for immigrant group  $j$  and  $\delta$  is assimilation effect<sup>24</sup>. The number of years it takes for immigrant group  $j$  to achieve earnings equality with the Canadian-born is  $-\frac{\alpha_j}{\delta}$ .

## 6. Estimation Results

### 6.1 Eastern Canada

Tables 5–6 show regression results for the eastern cities of Montréal and Toronto. Column 1 in each table contains estimates of the earnings equation (1) without occupational controls. For

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<sup>22</sup> I follow Green and Mackinnon and include age to 5<sup>th</sup> power in the regression analysis. I find this fits slightly better than the linear-spline used by Hatton (1997).

<sup>23</sup> The different immigrant groups considered are: English (including those from Wales and the Channel Islands), Scottish, Irish and European. The latter group includes all immigrants from Northern, Eastern and Southern Europe.

<sup>24</sup> I have tried allowing a separate assimilation effect for each immigrant group however I cannot reject the hypothesis that the assimilation effect is the same for immigrant groups.

Toronto and Montréal, all of the estimated entry effects for British immigrants are negative and statistically significant at the 5 percent level. The coefficient estimate on years since migration (the assimilation effect) suggests that relative earnings growth is slightly higher in Montréal than Toronto. Similar to what is found by Green and MacKinnon (2001), the estimated number of years it would take British immigrants to achieve earnings equality is quite high revealing that these immigrants cannot be expected to assimilate in a reasonable time frame (the last column in each table calculates estimated years to earnings equality). The addition of the CFP data to the Green and MacKinnon sample does not substantially change any of the estimated entry or assimilation effects for British immigrants.

In table 7 (column 1) regression results for the other eastern city of Halifax are shown. Similar to what is found in Toronto and Montréal the ability to write provides a worker with about a 20-25 percent earnings advantage; however, there appears to be no difference in earnings between married and non-married male workers. Interestingly, workers with a non-English mother tongue do not appear to have significantly lower earnings. On the other hand, Roman Catholic workers have significantly lower earnings than Protestants, Jews and members of other religions.

Patterns of entry and assimilation effects are quite different in Halifax compared with the other eastern cities. Canadian-born workers who have migrated from other provinces have a 30 percent earnings advantage which is significantly higher than in Toronto and Montréal. Since the census does not contain information on how long these internal migrants have resided in Halifax this estimate encompasses recent and previous cohorts. Immigrants from the United States are also doing better in Halifax than in the two other eastern cities with a 40 percent estimated earnings advantage. There are also differences in the estimated entry effects among the British-born residents. The English have negative entry effects while the Scottish and Irish enter with an outright earnings advantage. These findings support Woodsworth's claim that English immigrants are a negatively selected group. European immigrants, who would be expected to suffer the largest entry effects, are estimated to be on par with the Canadian-born. Thus, with the exception of immigrants from Newfoundland, the English seem to be having the hardest time assimilating in Halifax. Also the coefficient on years since migration is not significantly different from zero suggesting that any initial earnings disadvantage is expected to persist over time. It is true that many coefficient estimates are not significant. This is likely a consequence of the small sample size available. Halifax had a smaller proportion of immigrants with only about 9 percent

of its total population being foreign-born compared with 14 and 25 percent for Toronto and Montréal respectively (see appendix table 1). Although the number of immigrants in the sample is small, the pre-restriction sample contains over 16 percent of the total population of immigrants present in Halifax in 1901.

Table 5: Regression results Montréal 1901

Dependant Variable: Natural Logarithm of average monthly earnings

Variables	(1)		(2)		(3)		(4)		YEE(1)
	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	
Age	<b>1.363</b>	0.193	<b>1.342</b>	0.180	<b>1.274</b>	0.201	<b>1.426</b>	0.198	
Age <sup>2</sup> /100	<b>-6.306</b>	1.010	<b>-6.294</b>	1.020	<b>-6.028</b>	1.135	<b>-6.638</b>	1.134	
Age <sup>3</sup> /1,000	<b>1.440</b>	0.300	<b>1.456</b>	0.278	<b>1.399</b>	0.308	<b>1.524</b>	0.312	
Age <sup>4</sup> /10,000	<b>-0.162</b>	0.040	<b>-0.166</b>	0.037	<b>-0.159</b>	0.040	<b>-0.172</b>	0.041	
Age <sup>5</sup> /100,000	<b>0.007</b>	0.002	<b>0.007</b>	0.002	<b>0.007</b>	0.002	<b>0.008</b>	0.002	
Protestant	<b>0.160</b>	0.021	<b>0.090</b>	0.019	<b>0.084</b>	0.023	<b>0.167</b>	0.022	
Jewish	<b>0.319</b>	0.051	<b>0.181</b>	0.052	<b>0.307</b>	0.055	<b>0.299</b>	0.055	
Other unknown religion	<b>0.364</b>	0.089	<b>0.248</b>	0.075	0.041	0.073	<b>0.321</b>	0.100	
Ability to write	<b>0.221</b>	0.020	<b>0.125</b>	0.019	<b>0.155</b>	0.018	<b>0.213</b>	0.020	
English mother tongue	<b>0.096</b>	0.020	<b>0.054</b>	0.018	<b>0.071</b>	0.024	<b>0.099</b>	0.023	
Bilingual									
French mother tongue bilingual	-0.015	0.025	<b>-0.052</b>	0.022	-0.024	0.026	-0.006	0.026	
French mother tongue, unilingual	<b>-0.150</b>	0.029	<b>-0.120</b>	0.026	<b>-0.116</b>	0.032	<b>-0.144</b>	0.030	
Celtic mother tongue	-0.078	0.057	-0.082	0.054	-0.019	0.047	-0.057	0.059	
Other mother tongue	<b>-0.142</b>	0.044	<b>-0.104</b>	0.040	<b>-0.168</b>	0.046	<b>-0.112</b>	0.048	
Married	<b>0.063</b>	0.016	<b>0.075</b>	0.014	<b>0.061</b>	0.015	<b>0.065</b>	0.016	
Rest of Canada	<b>0.090</b>	0.026	<b>0.047*</b>	0.026	<b>0.080</b>	0.032	<b>0.093</b>	0.027	
England	<b>-0.176</b>	0.032	<b>-0.150</b>	0.030	<b>-0.114</b>	0.036	<b>-0.178</b>	0.036	41
Scotland	<b>-0.117</b>	0.043	<b>-0.073</b>	0.040	-0.038	0.053	<b>-0.130</b>	0.050	27
Ireland	<b>-0.190</b>	0.040	<b>-0.127</b>	0.037	<b>-0.118</b>	0.047	<b>-0.175</b>	0.046	45
Europe	<b>-0.091*</b>	0.050	-0.074	0.047	-0.067	0.052	<b>-0.135</b>	0.056	22
Newfoundland	<b>-0.198</b>	0.047	<b>-0.127</b>	0.038	<b>-0.173</b>	0.042	<b>-0.255</b>	0.056	50
United States	-0.010	0.037	-0.015	0.034	-0.011	0.037	0.022	0.050	
Other bpl	<b>-0.425</b>	0.159	<b>-0.384</b>	0.138	<b>-0.514</b>	0.119	<b>-0.516</b>	0.146	
Years since migration	<b>0.004</b>	0.001	<b>0.004</b>	0.001	<b>0.004</b>	0.001	<b>0.005</b>	0.002	
Apprentice			<b>-0.306</b>	0.084					
Clerical			<b>0.335</b>	0.022					
Craft			<b>0.276</b>	0.014					
Domestic service			<b>-0.212</b>	0.099					
Operative			<b>0.187</b>	0.015					
Other service			<b>0.090</b>	0.031					
Professional			<b>0.560</b>	0.062					
Manager			<b>0.747</b>	0.041					
Protective service			<b>0.167</b>	0.031					
Other/unknown occ.			<b>0.257</b>	0.032					
Constant	<b>-8.110</b>	1.310	<b>-7.907</b>	1.230	<b>-7.034</b>	1.375	<b>-8.563</b>	1.328	
N		8,157		8,157		5,326		7,638	
R <sup>2</sup>		0.2919		0.3911		0.2392		0.2903	

Notes: The reference group is Roman Catholic, labourer, illiterate, single, unilingual anglophone and born in Québec. The standard errors have been adjusted using the cluster command in Stata. Bolded entries are statistically significant at the 5% level while entries that are bolded with an asterisk are significant at the 10% significance level. The sample associated with all columns is the restricted sample outlined in subsection 3.2. Column (3) further restricts this sample by only including blue-collar workers. Column(4) excludes immigrants who arrived before age 15. The last column contains estimates of the years to earnings equality (YEE) for immigrant groups.

Table 6: Regression results Toronto 1901  
 Dependant Variable: Natural Logarithm of average monthly earnings

Variables	(1)		(2)		(3)		(4)		YEE(1)
	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	
Age	<b>1.472</b>	0.217	<b>1.458</b>	0.214	<b>1.591</b>	0.254	<b>1.426</b>	0.239	
Age <sup>2</sup> /100	<b>-6.901</b>	1.267	<b>-6.909</b>	1.245	<b>-7.647</b>	1.461	<b>-6.605</b>	1.394	
Age <sup>3</sup> /1,000	<b>1.599</b>	0.354	<b>1.616</b>	0.347	<b>1.805</b>	0.404	<b>1.509</b>	0.389	
Age <sup>4</sup> /10,000	<b>-0.182</b>	0.047	<b>-0.186</b>	0.046	<b>-0.209</b>	0.054	<b>-0.169</b>	0.052	
Age <sup>5</sup> /100,000	<b>0.008</b>	0.002	<b>0.008</b>	0.002	<b>0.009</b>	0.003	<b>0.007</b>	0.003	
Protestant	<b>0.068</b>	0.020	0.028	0.019	0.024	0.021	<b>0.071</b>	0.021	
Jewish	0.036	0.092	-0.064	0.093	0.122	0.112	0.025	0.106	
Other unknown religion	<b>0.153</b>	0.063	<b>0.097*</b>	0.058	0.039	0.064	<b>0.154</b>	0.071	
Ability to write	<b>0.215</b>	0.049	<b>0.140</b>	0.050	<b>0.120</b>	0.044	<b>0.193</b>	0.047	
Non-English mother tongue	<b>-0.058*</b>	0.035	<b>-0.082</b>	0.033	<b>-0.083</b>	0.042	<b>-0.080</b>	0.038	
Married	<b>0.087</b>	0.016	<b>0.105</b>	0.015	<b>0.079</b>	0.016	<b>0.088</b>	0.018	
Rest of Canada	<b>0.069</b>	0.029	0.031	0.027	0.035	0.033	<b>0.070</b>	0.030	
England	<b>-0.174</b>	0.027	<b>-0.120</b>	0.024	<b>-0.118</b>	0.027	<b>-0.159</b>	0.035	58
Scotland	<b>-0.114</b>	0.035	<b>-0.079</b>	0.033	<b>-0.096</b>	0.036	<b>-0.081*</b>	0.042	38
Ireland	<b>-0.177</b>	0.028	<b>-0.120</b>	0.025	<b>-0.144</b>	0.031	<b>-0.174</b>	0.037	59
Europe	-0.041	0.070	-0.018	0.064	0.006	0.090	-0.026	0.082	14
Newfoundland	<b>-0.147</b>	0.039	-0.110	0.035	<b>-0.091</b>	0.046	<b>-0.165</b>	0.038	49
United States	0.026	0.043	0.032	0.040	0.069	0.050	<b>0.198</b>	0.056	n/a
Other bpl	-0.011	0.106	-0.003	0.098	-0.007	0.123	-0.003	0.167	
Years since migration	<b>0.003</b>	0.001	<b>0.002</b>	0.001	<b>0.003</b>	0.001	0.000	0.002	
Apprentice			-0.117*	0.062					
Clerical			<b>0.308</b>	0.024					
Craft			<b>0.223</b>	0.020					
Domestic service			0.062	0.044					
Operative			<b>0.176</b>	0.021					
Other service			0.007	0.029					
Professional			<b>0.530</b>	0.062					
Manager			<b>0.509</b>	0.046					
Protective service			<b>0.233</b>	0.042					
Other/unknown occ.			<b>0.235</b>	0.033					
Constant	<b>-8.924</b>	1.406	<b>-8.791</b>	1.402	<b>-9.454</b>	1.682	<b>-8.636</b>	1.559	
N	5,528		5,528		3,420		4,794		
R <sup>2</sup>	0.3110		0.3799		0.2804		0.3082		

Notes: The reference group is Roman Catholic, labourer, illiterate, single, anglophone and born in Nova Scotia. The standard errors have been adjusted using the cluster command in Stata. Bolded entries are statistically significant at the 5% level while entries that are bolded with an asterisk are significant at the 10% significance level. The sample associated with all columns is the restricted sample outlined in subsection 3.2. Column (3) further restricts this sample by only including blue-collar workers. Column(4) excludes immigrants who arrived before age 15. The last column contains estimates of the years to earnings equality (YEE) for immigrant groups.

Table 7: Regression results Halifax 1901

Dependant Variable: Natural Logarithm of average monthly earnings

Variables	(1)		(2)		(3)		(4)		YEE(1)
	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	
Age	<b>1.541</b>	0.453	<b>1.499</b>	0.472	<b>1.793</b>	0.598	<b>1.413</b>	0.442	
Age <sup>2</sup> /100	<b>-7.416</b>	2.618	<b>-7.190</b>	2.680	<b>-8.903</b>	3.330	<b>-6.679</b>	2.560	
Age <sup>3</sup> /1,000	<b>1.793</b>	0.721	<b>1.723</b>	0.728	<b>2.181</b>	0.888	<b>1.591</b>	0.708	
Age <sup>4</sup> /10,000	<b>-0.216</b>	0.095	<b>-0.205</b>	0.095	<b>-0.263</b>	0.114	<b>-0.190</b>	0.094	
Age <sup>5</sup> /100,000	<b>0.010</b>	0.005	<b>0.010</b>	0.005	<b>0.012</b>	0.006	<b>0.009</b>	0.005	
Protestant	<b>0.101</b>	0.036	<b>0.055*</b>	0.032	0.049	0.031	<b>0.104</b>	0.035	
Jewish	<b>0.321</b>	0.160	0.262	0.169	<b>0.814</b>	0.182	0.274	0.177	
Other unknown religion	<b>0.244</b>	0.125	<b>0.204*</b>	0.113	-0.079	0.083	<b>0.246</b>	0.124	
Ability to write	<b>0.258</b>	0.044	<b>0.162</b>	0.045	<b>0.225</b>	0.046	<b>0.257</b>	0.044	
Non-English mother tongue	-0.036	0.052	-0.052	0.051	-0.033	0.056	-0.030	0.056	
Married	-0.031	0.044	0.014	0.034	-0.009	0.041	-0.030	0.046	
Rest of Canada	<b>0.291</b>	0.069	<b>0.215</b>	0.055	<b>0.243</b>	0.081	<b>0.290</b>	0.069	
England	-0.115	0.076	-0.084	0.072	-0.010	0.085	<b>-0.145</b>	0.081	n/a
Scotland	<b>0.294*</b>	0.173	<b>0.262</b>	0.132	<b>0.314</b>	0.119	0.237	0.175	n/a
Ireland	0.143	0.137	0.097	0.106	0.147	0.127	0.209	0.172	n/a
Europe	-0.001	0.159	-0.036	0.130	0.055	0.167	0.046	0.192	n/a
Newfoundland	<b>-0.205</b>	0.088	<b>-0.169</b>	0.081	-0.111	0.071	<b>-0.222</b>	0.092	n/a
United States	<b>0.413</b>	0.124	<b>0.274</b>	0.113	<b>0.481</b>	0.212	<b>0.382</b>	0.141	n/a
Other bpl	-0.261	0.281	-0.184	0.216	<b>-0.339</b>	0.061	<b>-0.548</b>	0.078	
Years since migration	0.000	0.004	0.000	0.003	-0.002	0.004	0.001	0.005	
Apprentice			-0.115	0.089					
Clerical			<b>0.368</b>	0.033					
Craft			<b>0.256</b>	0.022					
Domestic service			<b>-0.084</b>	0.044					
Operative			<b>0.090</b>	0.037					
Other service			0.112	0.077					
Professional			<b>0.871</b>	0.072					
Manager			<b>0.601</b>	0.065					
Protective service			<b>0.202</b>	0.056					
Other/unknown occ.			<b>0.128*</b>	0.071					
Constant	<b>-9.527</b>	2.985	<b>-9.287</b>	3.175	<b>-10.992</b>	4.130	<b>-8.690</b>	2.900	
N	1,628		1,628		1,009		1,577		
R <sup>2</sup>	0.3046		0.4379		0.2706		0.3091		

Notes: The reference group is Roman Catholic, labourer, illiterate, single, anglophone and born in Nova Scotia. The standard errors have been adjusted using the cluster command in Stata. Bolded entries are statistically significant at the 5% level while entries that are bolded with an asterisk are significant at the 10% significance level. The sample associated with all columns is the restricted sample outlined in subsection 3.2. Column (3) further restricts this sample by only including blue-collar workers. Column(4) excludes immigrants who arrived before age 15. The last column contains estimates of the years to earnings equality (YEE) for immigrant groups.

## 6.2 Western Canada

Workers in Winnipeg or Vancouver who are illiterate, Roman Catholic and not married also have significantly lower earnings (tables 8 and 9). The returns to literacy are higher than in the eastern provinces at 33 and 28 percent respectively for Winnipeg and Vancouver. Similar to Montréal and Halifax, Jewish workers earn about 30 percent more than other religion groups.

Jewish immigrants typically adapted more easily to urban living and industrial work as a large portion had experience working in trades in Europe (Burnet and Palmer, 1988, p62). The earnings advantage of being Protestant is 13 percent in Winnipeg but only 6 percent in Vancouver. Having a non-English mother tongue is found to lower earnings by 14 percent in Winnipeg but is not relevant in Vancouver<sup>25</sup>.

The assimilation progress of immigrants appears to be more rapid in the newly settled cities of Winnipeg and Vancouver. The assimilation effect in Winnipeg is almost twice that of Toronto and about 25 percent higher than Vancouver. Unlike the eastern cities the magnitude of the entry effects, when negative, for U.K. immigrants are quite small in both cities and many are not statistically significant. English immigrants tend to have the highest disadvantage among the U.K. immigrants. This is especially so in Winnipeg where their estimated entry effect is 11 percent and is statistically significant. Nevertheless, the estimated time it would take these English immigrants to achieve earnings equality is only 22 years which is significantly less than in Toronto, Montréal or Halifax. European immigrants in Winnipeg enter the labour market with a 17 percent disadvantage but can be expected to achieve earnings equality in 33 years<sup>26</sup>. In Vancouver, Europeans only have a 9 percent initial earnings disadvantage in Vancouver and this effect is not statistically significant. Notable differences also exist between these two cities. Workers from other provinces and the United States have a significantly higher earnings advantage in Winnipeg compared to Vancouver.

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<sup>25</sup> The city of St. Boniface (near Winnipeg) is also included in the sample as it began to be urbanized as early as 1883 (Artibise, 1975). Since this area was the cultural center of French Canadians I estimated specifications that included a French mother tongue and other mother tongue (non-English and non-French) dummy variable. However, a test of equality between these two variables cannot be rejected.

<sup>26</sup> When ysm is interacted with a U.K. and European dummy variable, Europeans have an estimated assimilation effect almost three times higher (0.013 compared to 0.005) than U.K. immigrants. However, one can only reject that these effects are equal at the 13 percent significance level. Thus, there is some weak evidence that Europeans maybe assimilating at a fast enough rate to achieve earnings equality in a more reasonable time period.



Table 8: Regression results Winnipeg 1901

Dependant Variable: Natural Logarithm of average monthly earnings

Variables	(1)		(2)		(3)		(4)		YEE(1)
	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	
Age	<b>1.620</b>	0.406	<b>1.735</b>	0.357	<b>1.719</b>	0.536	<b>1.901</b>	0.455	
Age <sup>2</sup> /100	<b>-8.090</b>	2.318	<b>-8.690</b>	2.018	<b>-8.788</b>	3.051	<b>-9.569</b>	2.577	
Age <sup>3</sup> /1,000	<b>1.991</b>	0.638	<b>2.141</b>	0.550	<b>2.192</b>	0.834	<b>2.366</b>	0.705	
Age <sup>4</sup> /10,000	<b>-0.239</b>	0.085	<b>-0.257</b>	0.072	<b>-0.265</b>	0.110	<b>-0.285</b>	0.093	
Age <sup>5</sup> /100,000	<b>0.011</b>	0.004	<b>0.012</b>	0.004	<b>0.012</b>	0.006	<b>0.013</b>	0.005	
Protestant	<b>0.135</b>	0.042	<b>0.083</b>	0.034	<b>0.196</b>	0.059	<b>0.126</b>	0.044	
Jewish	<b>0.241*</b>	0.138	0.044	0.139	0.380	0.272	0.225	0.175	
Other unknown religion	0.154	0.099	0.052	0.080	<b>0.227*</b>	0.126	<b>0.162</b>	0.091	
Ability to write Non-English mother tongue	<b>0.331</b>	0.045	<b>0.243</b>	0.043	<b>0.262</b>	0.048	<b>0.330</b>	0.044	
Married	<b>0.118</b>	0.034	<b>0.086</b>	0.026	<b>0.102</b>	0.035	<b>0.134</b>	0.035	
Rest of Canada	<b>0.191</b>	0.044	<b>0.146</b>	0.043	<b>0.186</b>	0.054	<b>0.167</b>	0.048	
England	<b>-0.114</b>	0.055	-0.071	0.050	<b>-0.128</b>	0.064	<b>-0.169</b>	0.065	23
Scotland	0.005	0.057	0.013	0.051	-0.041	0.072	-0.024	0.069	n/a
Ireland	-0.065	0.071	0.016	0.059	-0.049	0.089	-0.093	0.069	13
Europe	<b>-0.174</b>	<b>0.064</b>	-0.096	0.059	<b>-0.170</b>	0.083	<b>-0.246</b>	0.069	35
Newfoundland	<b>-0.342*</b>	0.204	-0.199	0.269	-0.237	0.210	<b>-0.380</b>	0.209	68
United States	<b>0.194</b>	<b>0.056</b>	0.148	0.056	<b>0.178</b>	0.084	<b>0.207</b>	0.066	n/a
Other bpl	0.003	0.252	-0.018	0.215	-0.140	0.260	-0.037	0.257	
Years since migration	<b>0.005</b>	<b>0.002</b>	0.004	0.002	<b>0.008</b>	0.002	<b>0.006</b>	0.003	
Apprentice			-0.100	0.263					
Clerical			<b>0.436</b>	0.036					
Craft			<b>0.375</b>	0.033					
Domestic service			-0.107	0.233					
Operative			<b>0.253</b>	0.041					
Other service			<b>0.243</b>	0.057					
Professional			<b>0.609</b>	0.059					
Manager			<b>0.803</b>	0.062					
Protective service			<b>0.335</b>	0.128					
Other/unknown occ.			<b>0.344</b>	0.144					
Constant	<b>-9.421</b>	2.724	<b>-10.451</b>	2.434	<b>-9.829</b>	3.610	<b>-11.444</b>	3.068	
N	2,130		2,130		1,201		1,877		
R <sup>2</sup>	0.3315		0.4537		0.3037		0.3259		

Notes: The reference group is Roman Catholic, labourer, illiterate, single, anglophone and born in Manitoba. The standard errors have been adjusted using the cluster command in Stata. Bolded entries are statistically significant at the 5% level while entries that are bolded with an asterisk are significant at the 10% significance level. The sample associated with all columns is the restricted sample outlined in subsection 3.2. Column (3) further restricts this sample by only including blue-collar workers. Column(4) excludes immigrants who arrived before age 15. The last column contains estimates of the years to earnings equality (YEE) for immigrant groups.

Table 9: Regression results Vancouver 1901

Dependant Variable: Natural Logarithm of average monthly earnings

Variables	(1)		(2)		(3)		(4)		YEE(1)
	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	
Age	<b>2.319</b>	0.569	<b>2.352</b>	0.512	<b>1.669</b>	0.624	<b>1.896</b>	0.608	
Age <sup>2</sup> /100	<b>-11.886</b>	3.184	<b>-12.089</b>	2.853	<b>-8.309</b>	3.426	<b>-9.542</b>	3.387	
Age <sup>3</sup> /1,000	<b>2.984</b>	0.856	<b>3.039</b>	0.763	<b>2.022</b>	0.910	<b>2.360</b>	0.907	
Age <sup>4</sup> /10,000	<b>-0.366</b>	0.111	<b>-0.372</b>	0.098	<b>-0.240</b>	0.117	<b>-0.286</b>	0.117	
Age <sup>5</sup> /100,000	<b>0.017</b>	0.006	<b>0.018</b>	0.005	<b>0.011</b>	0.006	<b>0.013</b>	0.006	
Protestant	<b>0.061*</b>	0.037	0.029	0.036	0.001	0.040	<b>0.073</b>	0.037	
Jewish	<b>0.393</b>	0.153	0.200	0.160	<b>0.512</b>	0.206	<b>0.371</b>	0.177	
Other unknown religion	0.061	0.064	0.041	0.055	0.002	0.056	0.071	0.074	
Ability to write	<b>0.284</b>	0.068	<b>0.205</b>	0.048	<b>0.338</b>	0.072	<b>0.335</b>	0.072	
Non-English mother tongue	-0.033	0.040	-0.016	0.037	0.014	0.043	-0.022	0.042	
Married	<b>0.145</b>	0.032	<b>0.111</b>	0.030	<b>0.124</b>	0.031	<b>0.146</b>	0.033	
Rest of Canada	0.106	0.095	0.093	0.079	<b>0.251*</b>	0.153	0.112	0.095	
England	-0.064	0.105	-0.087	0.092	0.124	0.169	-0.076	0.106	16
Scotland	0.014	0.119	-0.032	0.104	0.152	0.184	0.030	0.119	n/a
Ireland	-0.021	0.140	-0.004	0.131	0.157	0.183	-0.050	0.156	5
Europe	-0.095	0.122	-0.069	0.112	0.109	0.173	-0.072	0.122	23
Newfoundland	0.030	0.114	0.106	0.095	<b>0.359</b>	0.170	0.018	0.114	n/a
United States	0.076	0.122	0.065	0.099	0.253	0.174	0.080	0.125	n/a
Other bpl	-0.072	0.139	-0.098	0.116	-0.008	0.191	-0.078	0.147	
Years since migration	<b>0.004</b>	0.002	<b>0.005</b>	0.002	<b>0.004</b>	0.002	<b>0.005</b>	0.002	
Apprentice			<b>-0.479</b>	0.208					
Clerical			<b>0.316</b>	0.051					
Craft			<b>0.237</b>	0.035					
Domestic service			-						
Operative			<b>0.177</b>	0.043					
Other service			<b>0.144</b>	0.060					
Professional			<b>0.586</b>	0.061					
Manager			<b>0.515</b>	0.070					
Protective service			0.034	0.054					
Other/unknown occ.			<b>0.255</b>	0.056					
Constant	<b>-14.143</b>	3.897	<b>-14.413</b>	3.532	<b>-9.707</b>	4.409	<b>-11.277</b>	4.175	
N		1,940		1,940		1,127		1,748	
R <sup>2</sup>		0.1972		0.2908		0.1579		0.1796	

Notes: The reference group is Roman Catholic, labourer, illiterate, single, anglophone and born in British Columbia. The standard errors have been adjusted using the cluster command in Stata. Bolded entries are statistically significant at the 5% level while entries that are bolded with an asterisk are significant at the 10% significance level. The sample associated with all columns is the restricted sample outlined in subsection 3.2. Column (3) further restricts this sample by only including blue-collar workers. Column(4) excludes immigrants who arrived before age 15. The last column contains estimates of the years to earnings equality (YEE) for immigrant groups.

### 6.3 Additional Considerations

In tables 5-9, column (2) contains regression results that include controls for occupation groups. The coefficients on the occupational group dummies are roughly similar across the eastern and western cities. With the exception of apprentices and domestic servants, labourers earn less than any other occupation. In subsection 4.3 we have seen that there are systematic differences in the occupational distributions of immigrants and the Canadian-born. Immigrants tend to be clustered into low paying labouring jobs while the Canadian-born are more likely to be in clerical positions. Similar to what Green and MacKinnon (2001) found for Toronto and Montréal, the impact of literacy and religion on monthly earnings decreases in all five cities after controlling for occupation. Illiterates and Roman Catholics tend to be concentrated in low paying labouring positions.

Estimated entry effects are also found to be correlated with occupations; however the direction of correlation is different among the two western cities. In Winnipeg the inclusion of occupation controls improves the estimated entry effects for all immigrant groups suggesting that some of the earnings differential is due to immigrants clustering into lower paying occupations. In Vancouver the opposite is found (i.e. entry effects worsen) among the U.K. immigrants. This is partly a consequence of the fact that U.K. immigrants are more likely to be in managerial and professional jobs and are equally likely to be in lower paying labouring positions as the Canadian-born. Overall, it appears that U.K. immigrants are not being excluded from higher paying occupations in Vancouver<sup>27</sup>.

Writings by Reynolds suggest that immigrants from Britain may have had transferable skills that enabled them to readily fit into the Canadian labour market. To assess this, I estimated equation (1) on a subset of blue collar workers (workers classified as labourer, craft, and operative). The results for Toronto and Montréal are consistent to those found by Green and MacKinnon (2001); entry effects are significantly more modest when considering blue collar workers (Column (3) in tables 5-6). I also include European immigrants in my sample and find a slight improvement in the entry effect for this group as well. However, the coefficients are not

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<sup>27</sup> There are still differences in the proportion of Canadian-born and U.K. immigrants in clerical positions. Only about 18 percent of the U.K-born are in these positions compared with about 27 percent of the Canadian-born.

statistically significant. In Halifax entry effects for blue-collar immigrants only improve slightly when the effect of white-collar workers is removed.

An interesting pattern emerges when considering only blue-collar workers in the western cities. In Winnipeg entry effects are quite similar to column (1) but the assimilation effect is 60 percent higher. In Vancouver, the assimilation effect does not change but the estimated entry effects improve substantially although none are statistically significant. Differences in the variation of earnings within the white-collar occupation can partially explain this finding. In Winnipeg, average earnings between immigrants and the Canadian-born in white-collar are essentially the same and even immigrants who have been in Canada less than 5 years have earnings that are only about 12 percent less than the Canadian-born. Thus, for immigrants in Winnipeg that stepped up into white-collar occupations their earnings are already close to the Canadian-born and have little room for growth. Therefore, pooling both the white-collar and blue-collar workers, results in an overall lower assimilation effect because of the slow earnings growth of white-collar workers. In Vancouver, mean earnings within white-collar occupations are slightly higher for the Canadian-born overall and when considering recent immigrants (less than 5 years) they are 30 percent lower and grow faster as years since migration accumulates. Therefore, in Winnipeg once an immigrant worker penetrates into a white-collar occupation assimilation is almost complete. Conversely, in Vancouver the immigrant worker has to gain more Canadian experience to attain the average earnings of the Canadian-born in white-collar occupations.

Roughly one-quarter of immigrants in each city had arrived in Canada before age 15. Immigrants who arrive as children have been shown to experience similar earning profiles as the native-born<sup>28</sup>. It is possible that immigrants who gained Canadian specific skills and characteristics at a young age will assimilate more swiftly than immigrants who arrived as adults. If this is true then combining these two groups could be driving the positive results found for Winnipeg and Vancouver. I present estimates of the assimilation model that exclude immigrants who arrived before age of 15 (column (4) in tables 5-9). Comparing column (1) and (4) for these two cities reveals that entry effects worsen slightly but are offset by a higher assimilation effects.

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<sup>28</sup> Hatton (1997) shows this for U.S. immigrants that arrived prior to 1890. Friedberg (1992) also stresses the importance of accounting for immigrants who arrive at younger ages.

## 7. Conclusion

This paper provides evidence that economic assimilation is swifter in newly settled urban centers. Unlike what is revealed for Toronto and Montréal in 1901, immigrants from the U.K. are not found to have significantly large entry effects in the western cities of Winnipeg and Vancouver. Only European and English immigrants in Winnipeg are found to have statistically significant negative entry effects. However the return to Canadian specific skills, proxied by the coefficient on years since migration, is found to be higher in Winnipeg than all other cities. As a consequence, the English and Europeans are expected to achieve earnings equality over the course of their life-cycle unlike what is expected in Toronto and Montréal.

The evidence provided here on the assimilation experience for immigrants in Halifax, an older city with a small proportion of immigrants, is mixed. The Scottish and Irish are estimated to have an initial earnings advantage and the English and Europeans are not, but of these groups only the estimate for Scottish immigrants is statistically significant and large in magnitude. However, unlike the other cities considered in this paper, the estimated coefficient on years since migration is not significantly different from zero. The estimates suggest that immigrants in Halifax did not experience large disadvantages upon arrival but their wages fail to grow with subsequent experience in Canada. Thus, unless all of the immigrants arrived with perfectly transferable skills (which is unlikely), immigrants tended to have stagnant earnings growth in Halifax.

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**Appendix Table 1**

	Montréal			Toronto			Halifax		
	MacKinnon	CFP	Population	MacKinnon	CFP	Population	MacKinnon	CFP	Population
<b>All inhabitants</b>									
Sample Size	28,354	11,050	325,175	15,164	11,823	250,244	6,712	2,131	74,662
% Male	49.0	47.9	47.8	47.4	47.0	47.4	46.8	47.2	49.5
<i>Age distribution (male + female):</i>									
% 0-14	33.3	38.9	32.2	28.7	27.8	28.4	29.6	30.4	33.7
% 15-19	9.5	9.5	9.6	10.3	10.2	10.1	10.9	11.3	10.7
% 20-29	19.8	20.4	20.2	21.3	21.5	20.7	21.4	19.4	18.5
% 30-39	14.7	12.4	14.5	15.2	16.0	15.6	13.2	13.4	12.3
% 40-49	10.6	8.4	10.5	11.5	11.0	11.2	10.0	10.2	9.7
% 50-59	6.8	5.8	6.9	7.2	7.1	7.2	7.6	7.4	7.0
% 60-64	2.1	1.8	2.2	2.3	2.5	2.6	2.8	2.7	2.9
% 65+	3.3	2.8	3.8	3.5	4.0	4.1	4.5	5.1	5.0
<i>Religion</i>									
% Roman Catholic	76.3	68.6	75.6	14.2	13.5	12.8	38.7	40.0	33.1
% Anglican	8.2	11.2	8.8	29.5	30.1	29.0	25.9	26.0	30.6
% Protestant	0.4	0.7			0.3		0.0	0.0	0.1
% Baptist	0.8	1.2	0.8	6.6	6.1	5.5	7.2	7.5	9.3
% Methodist	2.8	4.0	3.2	23.8	22.0	25.3	12.0	11.9	9.5
% Presbyterian	6.8	9.1	7.1	19.6	22.3	20.2	13.3	9.7	15.8
% Jewish	3.1	3.3	2.1	1.3	1.5	1.2	0.4	1.0	0.2
<i>Birthplace</i>									
% All Canada ( plus NFLD)	85.5	82.0	86.5	73.8	72.8	74.2	90.0	89.7	93.1
% Own province	80.7	77.5	82.0	70.6	68.9	71.7	80.7	84.0	88.0
% U.S.	2.7	3.4	2.7	3.1	2.9	2.8	1.2	1.6	0.9
% U.K.	7.6	10.4	7.6	20.9	21.6	20.7	8.2	6.4	5.1
% England + Wales	3.8	5.2	3.8	12.4	13.0	12.2	5.1	3.8	2.9
% Scotland	1.4	2.0	1.3	2.8	3.1	3.0	1.1	0.8	0.8
% Ireland	2.4	3.2	2.6	5.6	5.5	5.4	1.9	1.8	1.3
% Europe	3.1	3.4	2.5	1.5	1.8	1.4	0.7	1.0	0.4
<b>Immigrants</b>									
Sample Size	4,078	2,012	45,174	3,624	2,871	64,134	877	255	7,014
% Male	52.8	50.8	51.6	48.7	48.6	49.8	48.4	50.6	53.3
% Ages < 10 (male + female)	5.5	5.2	5.3	2.9	2.7	3.2	5.1	9.0	4.8
% Age 10-19	13.0	12.6	12.8	9.1	9.3	8.4	10.4	15.3	11.8
% Ages 20+	81.5	82.2	82.0	88.0	88.0	88.4	84.5	75.7	83.5
% Arrived <1851	3.7	4.8	4.5	5.3	5.9	7.0	5.7	5.5	5.2
% 1851-1870	11.5	15.5	13.0	18.6	19.5	19.2	14.4	11.4	12.7
% 1871-1890	42.9	45.0	42.7	49.9	56.3	48.4	36.8	35.3	30.8
% 1891-1901	38.9	34.7	38.0	16.5	18.4	15.9	43.1	47.8	34.6

Notes:

Columns (1) and (2) for each cities refer to the pre-restriction sample.

Sources: Age and population: 1901 Census, Vol. IV, Table 1; Religion: Vol. I, Table 10; Sex: Vol. I, Table 3; Birthplace: Vol. I, Table 14; Immigration Vol. I, Table 17.

England and Wales include the Channel Islands.



**Appendix Table 1 continued**

	Winnipeg*			Vancouver**		
	MacKinnon	CFP	Population	MacKinnon	CFP	Population
<b>All inhabitants</b>						
Sample Size	7,853	2,382	42,340	6,749	1,253	27,010
% Male	53.0	52.5	51.6	56.7	59.2	
<i>Age distribution (male + female):</i>						
% 0-14	31.5	31.7	33.1	28.3	28.0	20.7
% 15-19	9.8	10.8	9.7	8.6	7.7	6.2
% 20-29	22.7	21.7	21.7	21.3	21.7	18.2
% 30-39	15.6	15.9	15.7	20.3	19.6	17.7
% 40-49	10.7	10.3	10.9	11.9	12.7	10.6
% 50-59	5.9	5.7	5.2	5.9	5.4	5.0
% 60-64	1.6	1.6	1.2	1.8	1.7	1.4
% 65+	2.2	2.3	2.1	1.8	3.0	1.6
<b>Religion</b>						
% Roman Catholic	20.1	15.3	12.1	9.4	6.5	11.3
% Anglican	21.5	21.8	24.0	27.0	26.7	26.1
% Protestant	0.0	0.0	0.3	0.6	2.8	1.2
% Baptist	4.4	4.8	4.9	7.4	6.2	5.7
% Methodist	15.2	16.1	15.9	14.6	14.9	14.0
% Presbyterian	22.7	28.0	24.0	27.8	26.0	24.1
% Jewish	2.2	1.7	2.7	0.6	0.6	0.7
<b>Birthplace</b>						
% All Canada ( plus NFLD)	65.8	65.5	62.3	57.3	54.6	62.1
% Own province	30.8	33.7	31.5	18.7	19.7	36.7
% U.S.	4.0	2.9	3.3	8.2	7.0	6.8
% U.K.	16.9	18.1	19.4	23.5	23.1	15.9
% England + Wales	11.2	12.7	12.5	15.7	14.0	10.6
% Scotland	3.2	3.8	3.9	4.9	5.8	3.4
% Ireland	2.5	1.6	2.9	2.9	3.3	1.9
% Europe	11.9	6.4	13.8	3.1	1.3	2.9
<b>Immigrants</b>						
Sample Size	2,578	804	15,900	2,605	547	16,011
% Male	54.0	51.9	53.1	62.0	65.6	71.3
% Ages < 10 (male + female)	6.5	4.4	6.6	3.6	4.2	3.8
% Age 10-19	15.8	15.2	15.1	13.0	12.0	11.7
% Ages 20+	77.7	80.5	78.3	83.3	83.7	84.6
% Arrived <1851	2.0	1.8	1.5	1.1	1.6	0.8
% 1851-1870	5.4	3.4	4.6	5.8	4.0	4.3
% 1871-1890	44.3	47.9	43.4	41.6	38.8	34.5
% 1891-1901	48.3	46.9	47.7	51.5	55.6	55.1

**Notes:**

Columns 1 and 2 for each cities refer to the pre-restriction sample.

Sources: Age and population: 1901 Census, Vol. IV, Table 1; Religion: Vol. I, Table 10; Sex: Vol. I, Table 3; Birthplace: Vol. I, Table 14; Immigration Vol. I, Table 17.

England and Wales include the Channel Islands.

\* The population figures for Winnipeg do not include St. Boniface as the census does not provide separate figures for this area.

\*\* In the 1901 census Vancouver city is part of the census district Burrard which also includes the sub-districts of Bennet -Atlin, Cassiar(Stikine) and Cassiar(Skeora). Vancouver city's population in 1901 is 27,101 which comprises 64 percent of the total population of Burrard which is 42,060. The census does not provide statistics for the sub-districts of Burrard relating to the age, birthplace and immigrant distributions. Thus, the first, third and fourth panels of the table above are for the entire district of Burrard. The second panel on religion is for Vancouver city only.

Appendix Table 2: Sample sizes of immigrants and Canadian-born – restricted sample.

	Immigrant	Canadian-born	Total	Immigrants as a % of total residents (sample)	Immigrants as a % of total residents (population) <sup>a</sup>
Montréal	1,779	6,262	8,041	28%	14%
Toronto	1,898	3,581	5,479	35%	26%
Halifax	293	1,307	1,600	18%	9%
Winnipeg	972	1,144	2,116	46%	38%
Vancouver	902	1,023	1,925	47%	46%

(a) This refers to the population figures in appendix table 1.