Canada and High Skill Immigration in the U.S.: Way Station or Farm System?

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Abstract

In this paper we look at the characteristics of immigrants in the United States who report that they were living in Canada five years before (in the Census) or one year before (in the American Community Survey) and compare their labor market outcomes to those of immigrants from the same source countries who migrated directly to the U.S.. Although the criteria used in Canada's point system might lead one to think that immigrants in Canada would be more skilled than those in the U.S., there is little evidence of this, as would be predicted from a simple migration model. However, those who then move to the U.S. *are*, in fact, more highly educated than their counterparts in the U.S. and, as a consequence, have much better outcomes and those better outcomes are not driven by composition effects related to different distributions of source countries. Instead we find that the differences are driven largely, but not exclusively, by composition effects related to educational attainment, full-time work status, and occupations. We also find evidence that labor market experience acquired outside the U.S. is better rewarded in the case of immigrants entering from Canada.

1 Introduction

The United States and even more so Canada are high immigration countries. In 2013 13% of the U.S. population and 20% of the Canadian population was born abroad. In terms of inflows, 259 thousand entered Canada in that year, representing 0.7% of the population. For the U.S. the analog figures were 990 thousand entrants or 0.3% of the population.

Although immigrants count for a significant proportion of the labor force, the policies governing admission into both countries are quite different. Canadian immigration policy specifically targets high-skilled immigrants. The main immigration program, the Federal Skilled Worker Program, values the immigrants' skills through a point system and offers permanent residency without the need to be sponsored by a canadian employer. Canadian provinces also offer a set of services to help immigrants integrate in Canada. Most often these services include free language courses and help in finding a job. Contrary to Canada, the U.S. does not explicitly target high-skilled immigrants as a matter of policy. Nevertheless it has always managed to attract top-end talent. More than 7 000 visas are awarded each year to outstanding researchers and highly skilled individuals while 57% of world migrant inventors and 33% of all PhDs in OECD countries, including 650 000 immigrants, live in the U.S. Part of this success likely stems from the wage structure in the U.S. and its closer connection between skills and rewards which attracts the individuals at the top end of the skill and ability distribution.

In this paper we look at the characteristics of immigrants in the United States who report that they were living in Canada five years before (in the Census) or one year before (in the American Community Survey) and compare their labor market outcomes to those of immigrants from the same source countries who migrated directly to the U.S.. Although the criteria used in Canada's point system might lead one to think that immigrants in Canada would be more skilled than those in the U.S. simply because of the truncation from below of the skill distribution, there is little evidence that this is true when comparing the overall population of immigrants in Canada to that in the U.S.. However, those who then move to the U.S. *are*, in fact, more highly educated than their counterparts in the U.S. and as a consequence have better earnings outcomes and those better outcomes are not driven by composition effects related to different distributions of source countries. Rather, they are largely–but not exclusively–driven by differences in educational attainment, full-time work status and, especially, occupations.

While taking educational attainment as an exogenous characteristic determined prior to migration may be a reasonable assumption, occupations and full-time work status are clearly outcomes and those outcomes may be related to the relative employability of immigrants entering from Canada

relative to those entering directly. In a related vein, we find that the returns to experience is higher for those entering the U.S. from Canada. Also, we find that the part of the difference in earnings that is not accounted for by observable characteristics is relatively more important using the sample of all immigrants than when restricting the sample of immigrants who entered the U.S. directly to those who migrated before they were twenty years old. Such a restriction would make it very likely they their post-secondary schooling and their labor market experience were acquired in the U.S. In that case, almost all of the difference in weekly earnings can be attributed to composition effects and little is left for wage structure effects such as differential returns to education and/or to experience.

Interestingly, the outcomes in the U.S. of the Canadian born and of those who were immigrants in Canada before moving to the U.S. are very similar, as are their characteristics such as education. This is suggestive that the selection process leading to the migration decision works in a similar fashion for both groups, although we do find that immigrants in Canada are at least twice as likely as the Canadian-born to subsequently migrate to the United States (1.7% among all immigrants in Canada aged 25 to 54 compared to 0.6% for native-born Canadians). While the overall emigration rates are quite low, they are considerably higher for the more educated. For example, among males aged 30 to 39 with a post graduate degree we find that about 12% of the immigrants who were in Canada five years before moved to the U.S. while approximately 5% of native Canadians did so. The analog figures for females are 5.9% and 2.0%, respectively for immigrants and native Canadians.

To explore whether immigrants may be more sensitive to economic opportunities in the United States, we then estimate the relationship between migrating and relative wages in both countries computed at the 1-digit occupation level. While we find that both native Canadians and immigrants are more likely to have migrated when relative wages in the U.S. increase, there is no evidence that immigrants are more responsive than the Canadian-born. In that sense then, the evidence is muted that Canada is "used" as a springboard to reach the United States more so for immigrants than is the case for Canadian-born emigrants to the U.S.. Rather, as one might expect from a population with lower mobility costs than is the case for the native born, due possibly to not having accumulated the same amount of "social capital" in the country, immigrants in Canada display a baseline tendency to be more mobile geographically that is fairly stable across age groups and educational attainment categories relative to the Canadian born.

That said, we have to keep in mind that data limitations force us to consider only migration movements occuring within a five year window preceding the 2000 Census. In addition, there is no information in the U.S. census on the number of years spent in Canada. To get a glimpse of the longer-term migration process of highly educated immigrants in Canada we show, using the 1991 and 2001 Censuses, that the fraction of immigrants living in Canada is a declining function of the

number of years since arriving in the country, at least over the first 10-15 years, with what appears to be a significant drop after only five years. Given the absence of information on whether and when immigrants become canadian citizens, we can only speculate that some of them may wait until they become citizens before leaving Canada to go the U.S.

Finally, using the Current Population Survey we also look briefly at second generation immigrants who came either from Canada or directly and we find patterns similar to those of the first generation immigrants.

2 Immigration Policies in Canada and in the United States

The path for independent high-skilled immigration is relatively straightforward in Canada. In 1967, Canada was the first country to introduce a point-based immigration system through which high-skilled independent immigrants, that is immigrants with no family ties in Canada, could apply for permanent residency based on their skills. [1] Although the points attributed to the different criteria have changed over the years, the Canadian economic immigration system has remained mainly a supply driven system in which the individual's skills are the key criteria. Immigrants do not need to be sponsored by either a family member or an employer.

Individuals who immigrate through the point system are granted permanent residency upon arrival in Canada. This applies not only to the principal applicant but also to his/her spouse and dependents. As permanent residents, they have the same access to jobs (except some jobs in the federal governement) and benefits than Canadian citizens. Furthermore, they are eligible for settlement services, such as language classes, offered by the federal government or by the governement of their province of destination.

The share of economic immigrants in Canada is among the highest in the OECD countries. In 1991, the inflow of permanent immigrants was approximately 231,000, representing 0.8% of the population. The share of new permanent residents in the family stream was 37% and the share of economic immigrants was 39% (Antecol, Cobb-Clark and Trejo (2002)). Economic immigration has remained the largest share of total immigration accounting for approximately two thirds of the new permanent residents in recent years, whereas the share of family immigration has accounted for only one quarter of total immigration.

[1] For instance in the early 1990s, there were up to twelve points attributed to education, eight to experience, ten to age (the younger the better), and 15 to knowledge of French or English, etc.. Ten points were also attributed to candidates working in an occupation for which the demand was deemed high and ten points for arranged employment in Canada. Of a total of one-hundred points, seventy were required for a successful application (Green and Green (1995)).

Immigrating to the U.S. as an independent high-skilled immigrant is not as straightforward. While Canada established the point sytem in the mid-1960s, the U.S. immigration policy redefined itself as based on family ties through the Immigration and Nationality Act in 1965. The mid-1960s mark the start of the divergence in the U.S. and Canadian immigration policies that persists until today. Most of the US immigration framework has remained unchanged since the 1990 Immigration Act. Since 2000, over 1 million individuals per year became lawful permanent residents (LPR), which represents a yearly inflow of 0.3% of the U.S. population.

Most new LPR are family sponsored immigrants. Over the past twenty-five years, the share of family sponsored LPRs has been stable at approximately two thirds of new residents. Sixty-eight percent of new LPRs were family sponsored in 1990 and 64% in 2014.

Employment based immigration represents a much smaller share than in Canada, accounting for only 15% of all new LPRs in 2014 and 9% in 1990. There are different categories based on skills which are in order of numerical importance: priority workers (eg professors, researchers); professionals with exceptional ability; skilled workers, professionals without advanced degree; needed unskilled workers.

For the vast majority of workers, to become a LPR in an employment based category, the immigrant must hold a job offer and the employer must obtain a labor certification and file an immigrant petition for alien worker. Contrarely to the Canadian system, the U.S. labor immigration system is demand driven. An individual cannot apply for residence based only on his/her skills (with some rare exceptions).

Half of the new LPRs already live in the U.S.. In those cases the green card performs the role of a status adjustment, which represents the two step migration pattern for the majority of immigrants: high-skilled immigrants often work first temporarily in the U.S. thanks to a H1B visa and are then sponsored to LPR by the employer.

In 2015, around 173000 H1B visas were issued for principal applicants, that is excluding spouses and dependents.

In order to obtain a H1B visa, the employer must file a petition. H1B visas are for a maximum of three years and are renewable once. There is a numerical limit for H1B visas of 65000, plus 20000 for advanced degrees from US universities. Educational and research institutions are exempt from the cap, and renewals do not count towards the cap. There is very high competition for these visas: in 2016, there were 233000 petitions filed in one week. Only 25% of them could be accepted given the limit. A lottery has been used for several years to select among the petitions.

In summary, and at the risk of over-simplifying, economic immigration to the U.S. is largely driven by explicit, institutionally driven, demand considerations while in Canada it is more a supply

driven system.[2]

3 Immigration Decisions

This section outlines a simple model of the selectivity induced by migration decisions. One objective is to characterize what one could expect in terms of (1) the skill distributions of immigrants entering both countries, and (2) the distribution of skills in the U.S. for immigrants coming from Canada (including native canadians) vs immigrants moving directly to the U.S. without, in a first step, migrating to Canada.

Although the standard Roy-type selection model underlying the decision to migrate to either Canada or the U.S. generates straightforward and well-known predictions related to the skill-income gradient in each country, in this version we incorporate the key institutional features distinguishing the admission policies in both countries. Namely, we first assume that there is a minimum skill requirement in Canada generated by the point system. On the U.S. side, we assume that individuals can enter the country under the family reunification category or, if they are what we call "skilled singles", that they can only enter if they are sponsored by an employer.

We abstract from the fact that Canada also has a family reunification program to focus on the fact that the economic class is more important in terms of the share of immigrants admitted under that category, whereas in the U.S. it is the family reunification program that is overwhelmingly dominant. For simplicity we also ignore the possibility that under certain conditions related to income support and returns to skills, individuals may prefer to stay in their source country. Finally, we initially ignore the issue of whether time spent in Canada acquiring skills allows immigrants to enjoy higher returns once they move to the U.S. We will discuss how this consideration affects the main prediction at the end of this section and also, given that it is verifiable, in the empirical section.

The analysis proceeds in two stages. We first analyze the initial decision of whether to migrate to Canada or to the U.S. In the second stage, we look at the decision by current immigrants in Canada to either stay or to move to the U.S., exploiting the fact that (1) all initial moving costs are sunk and the only costs that matter are the ones associated to a migration decision, and (2) some skilled individuals who could not initially enter the U.S. because they were not sponsored, now can entertain that notion.

Suppose the (log) wage of an individual is given by a linear function of her skills S and that we have the following log wage functions, one each for skilled individuals in Canada and the U.S., and

[2]Considerations related to the capacity of the labor market to absorb immigrant workers are also used, such as when, for example, the number of immigrants allowed to enter the country is decreased when the economy is weaker.

one for individuals entering the U.S. under the family reunification program:

$$lw^{US} = a_{US} - C + b_{US}S$$

$$lw^{CAN} = a_{CAN} - C + b_{CAN}S$$

$$lw^{US-F} = a_{US} + a_{US-F} - C + b_{US-F}S$$

where C represents the cost of migrating to the United States or to Canada from the source country, b_{US}, b_{CAN}, b_{US-F} represent the return to skills parameters in the U.S. and in Canada, respectively, for the skilled individuals, and in the U.S. for the individuals contemplating migrating to the U.S. under the family reunification program. We assume higher returns to skills in the U.S. with $b_{US} > b_{CAN}$, and also that $b_{US} > b_{US-F}$. The latter captures the notion that absent the sponsorship of a U.S. employer, individuals entering under the family reunification program will not be able to translate their skills into wages as easily as is the case for the sponsored individuals. We also assume that individuals attach some value a_{US-F} to being reunited with their family and that $a_{CAN} > a_{US}$ (Canada has a more generous social safety net than in the U.S.). For simplicity we assume that a_{US-F} is sufficiently large relative to a_{CAN} and that $b_{US-F} = b_{CAN}$ essentially to make sure that no one being reunited with his family wants to subsequently migrate to Canada in the second stage. Finally, the cost of the initial move to either country is assumed to be the same and Canada imposes a minimum skill requirement of S_{MIN}.

3.1 Initial Migration Decision

For $S < S_{MIN}$, the decision rule is simple and all individuals migrate to the United States, whether they are economic migrants or whether they migrate for family reunification purposes.

For $S_{MIN} \leq S < S^*$, all skilled individuals move to Canada. The critical skill level $S^*$is defined by the point where

$$a_{CAN} - C + b_{CAN}S^* = a_{US} - C + b_{US}S^*$$

or

$$S^* = \frac{a_{CAN} - a_{US}}{b_{US} - b_{CAN}}$$

Hence, the greater is the difference in returns to skills between the U.S. and Canada, the closer to S_{MIN} the upper bound S^* will be.[3] Conversely, the threshold is higher the greater is the minimum

[3]Naturally the choice of the minimum skill requirement is sufficiently low i.e. below S^* such that there is a range of skill levels over which Canada is the preferred destination, otherwise the decision rule would be trivial with no one

income protection in Canada.

Finally, for $S \geq S^*$, all sponsored skilled individuals and all those reuniting with their family migrate to the United States. This is where the constraint or entry barrier imposed on potential skilled individual immigrants to the U.S. enters the picture. Unless those individuals are sponsored they cannot go the U.S. while they can go to Canada.[4] Consequently, Canada will have its share of highly skilled individuals who would otherwise have chosen to migrate to the U.S. If every skilled individual could enter the U.S. freely, Canada would only get those whose skill level would be between S_{MIN} and S^*.

That process is illustrated in Figure 1. Although the figure is suggestive that family reunification immigrants whose skill level is between S_{MIN} and S^* would choose to move to Canada, in fact they would lose the value of being reunited with their family a_{US-F} if they did, and thus they strictly prefer to migrate to the U.S.

Figure 1 makes clear the fact that the distribution of immigrant skills in both countries can be more or less different and that the existence of a minimum skill requirement in Canada does not imply that Canada attracts more highly skilled immigrants than in the U.S.[5] While it is true that it truncates the distribution from below, ultimately it depends on the degree to which Canada can attract those highly skilled non family reunification individuals who would have entered the United States had they been sponsored by an employer.

3.2 Second Stage Decision

The key consideration, in this stylized world, affecting the migration decision of those who initially immigrated to Canada, is the fact that the initial moving costs are now sunk and thus the returns to skills function now only needs to include the additional cost of migrating from Canada to the U.S. To simplify we assume that those who could not originally be sponsored by an employer in the U.S. can be in this second stage if they look for a job there, although making that assumption or not does not make a substantial difference to the main result. Also, we ignore the immigrants belonging to the family reunification class in the U.S. as we want to focus on the movement by the

coming to Canada. In a somewhat contrived way this shows that the existence of a point system does not in itself guarantee that the skill pool will be of greater quality than in the U.S.

[4]Naturally, we abstract from the fact that the canadian admission process involves what can be substantial delays. The idea is that one can always get in the queue to enter Canada as long as $S \geq S_{MIN}$.

[5]The point is raised in Antecol, Cobb-Clark and Trejo (2002) where they show, using the 1990 Census, that once Latin American countries are left out, immigrants in the U.S. show higher levels of educational attainment than those in Canada. Using the 2000 census we also find that the fraction of immigrants with at least a B.A. degree is greater in the U.S. than in Canada across all major source regions or countries.

purely economic migrants.

Individuals will choose to stay in Canada as long as

$$a_{CAN} + b_{CAN}S > a_{US} - C_{CAN} + b_{US}S$$

where C_{CAN} represents the cost of migrating from Canada to the U.S., and they will be indifferent at the skill level S^{**} defined by:

$$S^{**} = \frac{a_{CAN} - a_{US} + C_{CAN}}{b_{US} - b_{CAN}}$$

Thus $S^{**} > S^{*}$ (the initial threshold) and some of the non-sponsored skilled individuals who initially came to Canada will choose to stay due to moving costs, while those whose skill level is above S^{**} will move to the U.S. This is shown in Figure 2 where we can see that highly skilled immigrants will elect to leave Canada.

Of course, not all those who initially came with a skill level above S^{**} will actually leave, but the general implication is the same: within a cohort of immigrants entering Canada, we should see a decrease in the fraction of the more highly skilled among them as time goes on. Mitigating factors would be increasing mobility costs over time as those individuals develop family and other social ties.

As for the Canadian-born, if they face the same moving costs as the immigrants and have similar returns to skills in the U.S., the distribution of skills in the U.S. will be similar for both groups and they should have similar outcomes. Two factors affecting this conclusion–at least for the skills distribution–would work in opposite directions. On the one hand greater social ties in Canada would increase the cost of moving and raise the cutoff point relative to immigrants, generating a more positive selection into the U.S. and higher mean skills and earnings for the Canadian-born. On the other hand if the skills of the Canadian-born are better recognized in the U.S. than those of immigrants, some of whom would have acquired their schooling and at least part of their experience in their source country, then the earnings-skills gradient would be steeper for the Canadian-born and this would shift the cutoff point to the left of S^{**}.

While it is not possible to assess the relative moving costs of the immigrants vs. those of the native born Canadians, in the empirical section we will check whether the latter benefit from higher returns to skills in the U.S. Note that while higher returns to skills for the Canadian-born would in itself translate into lower mean skills among those who migrated to the U.S. relative to immigrants,

mean earnings would nevertheless likely be higher.[6]

4 Data

Ideally we would like to use data that would allow to follow immigrants across countries. Unfortunately, this is a limitation in many immigation studies as such data sets are very rare. Instead, most of our analysis is based on the 2000 U.S. Census in which we can identify the population of interest, that is foreign-born individuals who were living in Canada in 1995. We redo most of the analysis using also the American Community Survey (ACS) from 2001-2013 in which we can similarly identify individuals who were living in Canada in the previous year. We focus mainly on the results obtained using the Census data because of sample size considerations. Summary statistics are reported in Appendix Table 1. Previewing some of the key dimensions that are highlighted later, we can see that recent immigrants entering from Canada, whether as Canadian-born or not, are more educated, are more likely to be working full-time, and they earn more than immigrants entering directly. What is also mechanically induced by the point system used in Canada, non Canadian-born immigrants in the U.S. are also considerably more likely to be fluent in English, which can affect the other labor market outcomes.

To complement our analysis, our main datasets on the canadian side are the 1996 and 2001 Canadian Censuses. We compare groups of individuals based on age, gender, educational attainment, and country of birth in the U.S. Census in 2000 with individuals 5 years younger with the same characteristics in Canada in the Canadian Census in 1996. This allows us to document the migration rates from Canada to the U.S. for each subgroup, as well as obtaining information on the population of interest, at least in aggregate terms, that is not available in the U.S. Census. In particular, we calculate for each group the share of non-Canadian immigrants in the U.S. who arrived in Canada before age 20 as a proxy for having Canadian secondary education. In a similar fashion we use the ACS data matched to the 2001 Canadian Census. Matched data from the Canadian and U.S. Censuses is also used to compare occupational wages in both countries in order to determine the economic incentives to migrate to the U.S. for different groups. To do so, we use the IPUMS-International files of the 2000 and 2001 U.S. and Canadian censuses.

Finally, to complete our analysis we use CPS data to study the migration patterns to the U.S. of the Canadian second generation. The CPS contains information on the country of birth of the

[6]The effect on earnings depends on the extent to which having acquired labor market experience in Canada affects the slope of the skills-earnings relationship at different points. For example, convexification of the skills-earnings profile with canadian experience would increase mean earnings among immigrants.

father and mother of the individual from 1994 onwards. Hence, we can identify individuals born in Canada with foreign-born parents who migrate to the U.S..

In Table 1 we first show the fraction of the male population aged 25-64 with at least a B.A. degree in both the U.S. and in Canada and by region. We can see that, except for latin american countries, a larger proportion of immigrants in the U.S. hold at least a B.A. degree than immigrants from the same region living in Canada. This may seem surprising given that Canada has had a point system since 1967 and that the importance given to educational attainment has increased over time. However, as shown in the simple migration decision model sketched in Section 3, there is no reason to expect that immigrant educational attainment in Canada will a priori be greater than in the United States. Differences in the returns to skills as well as in income security are ultimately the key factors determining the distribution of immigrant skills in both the U.S. and Canada. Of course this applies more directly to economically motivated migrants as opposed to individuals migrating to the U.S. or to Canada primarily for family reunification purposes and who, presumably, are less likely to come disproportionately from the top of the educational attainment distribution. Given the greater proportion of immigrants in that category in the United States than in Canada, at least in recent decades, it is somewhat surprising to see such a significant gap between the two countries in the fraction of university educated immigrants.

In the second panel of Table 1 where we focus on immigrants who arrived in the United States in the previous five years, the situation is reversed and immigrants entering from Canada are more likely to hold at least a B.A. degree than those having entered the U.S. directly.

This pattern may not be surprising given the increased emphasis put on educational attainment in the admission process into Canada over the last couple of decades. However, even in the absence of an increased reliance on educational attainment, the migration process leading to individuals coming to Canada first and then migrating to the U.S. would predict such a pattern.

4.1 Fields of Study

To get an idea of how different in terms of educational background direct immigrants might be from those who enter from Canada, either as native-born Canadians or as foreign-born immigrants themselves, in figure 3 we show by gender the fields of study for those with university education. For males we can see that for both direct immigrants and the non-canadian-born immigrant from Canada scientific fields of study, particularly applied sciences, dominate along with business whereas in the case of Canadian-born immigrants business represents to modal field followed by engineering and social sciences, similar to U.S. natives, although business is clearly dominant in their case.

While the distribution of fields of study is very different for females, it is interesting to note that it is quite similar for the direct immigrants and those entering from Canada: in both cases business is clearly dominant although a fairly large proportion of females have training in engineering. As is the case for males, Canadian-born and the U.S. native females share a similar distribution of fields with education representing the modal choice. What makes those two groups different from the other two though is that engineering is far less prevalent. In all four groups, medical and health sciences are more important than is the case for males.

4.2 Immigrant Wages in Canada and the U.S.

As outlined in section 3, immigrants entering the United States from Canada are expected to be positively selected given that (1) they were already selected positively when they emigrated to Canada, and (2) the U.S. labor market is characterized by a steeper skills-earnings gradient which acts as a pull factor for high skill individuals contemplating a move to the U.S. In this subsection we assess the second point by showing the way in which both the canadian and the U.S. economies translate observed skills into wages. To do so we compare the labor market earnings in Canada for individuals belonging to a given skill group to the earnings same skilled individuals get in the U.S.. Using the 2000 U.S. census and the 2001 Canadian census, we create skill cells based on four age groups (21-30, 31-40, 41-50, and 51-60) and four educational attainment categories (less then high school, high school, some post secondary, and at least a B.A. degree), and compute means weekly earnings in each cell for the Canadian-born, as well as the immigrants living in Canada those who migrated from Canada to the U.S..

The results are plotted in Figure 4. If it were the case that the U.S. and the Canadian labor markets translated skills into earnings the same way, then all the dots should be on the 45 degree line.[7] From both Figure 4B for females and especially Figure 4A for males it is quite apparent that individuals earn more in the U.S. with the same combination of age–proxying for experience–and education than they do in Canada. This is true either for the Canadian-born immigrants in the U.S. as it is for the foreign-born who work either in Canada or in the U.S.. Note also that the set of dots have an overall slope that is greater than 45 degrees. This is particularly visible in the case of men and it suggests that the discrepancy between the rate of return to skills in Canada and in the U.S. is larger for more skilled individuals thus exercising a greater pull on those individuals in Canada.

The same general conclusion emerges if we use instead the 2006 Canadian census along with the

[7]See Card (2003) for a similar analysis using all Canadians irrespective of whether they are natives or immigrants in Canada

2004-07 American Community Surveys. Therefore, while the U.S. labor market's power of attraction is apparent throughout the skill distribution, it particularly applies as one moves toward the top.

5 Analysis

5.1 Weekly Earnings in the U.S.

We first show how immigrants in the United States who were living in Canada five years before fare in terms of earnings relative to the Canadian-born who migrated to the U.S. and to the immigrants who came directly to the U.S. without an intervening period living in Canada. As part of the exercise we correct for possible composition effects arising from the fact that the distribution of immigrants with regard to source countries may differ between the group coming from Canada vs the group entering the U.S. directly. We also subsequently correct for composition effects arising from educational attainment differences as well as differences in occupations between the two groups. The skills/education dimension may have become especially important in the years since the changes made to the point grid system in Canada in 2002 increased the emphasis on educational attainment for individuals applying to immigrate into Canada.

In Figures 5A and 5B we show kernel density estimates of the weekly wage distribution in the U.S. using the 2000 U.S. census and the merged 2003-2013 American Community Surveys. Due to their modest sample sizes we merge all the ACS samples to get as large a sample of immigrants from Canada as possible. We exclude observations with weekly earnings above $4000 (in $2015).

In both figures we can see that the distributions for both the Canadian born and the immigrants who lived in Canada before entering the U.S. are very similar and strictly dominate the distribution for the direct immigrants. To assess whether the difference in the distributions for those two groups of immigrants stems from differences in observables such as source country we next use the decomposition methodology proposed in DiNardo, Fortin and Lemieux (1996) to correct for composition effects by first creating the counterfactual distribution of weekly earnings for immigrants who did not enter through Canada imposing that the distribution of source countries was the same as for the non canadian born immigrants who transited through Canada. As we can see in Figure 6 in the case of the 2000 census, source country composition is clearly not a major driver of the discrepancy between the two groups in Figure 5.

As mentioned earlier, starting in the early 90s Canada made changes to its admission policy that put greater emphasis on general human capital characteristics such as educational attainment and language skills as opposed to selecting immigrants based on so-called occupational imbalances. The

importance of the economic class, as opposed to the family reunification class, was also increased.[8]

As shown in Table 1, recent immigrants entering the United States from Canada were more educated than recent immigrants entering directly from their source country. Thus it could be that endowing the latter with the same educational attainment distribution as that of immigrants entering from Canada could account for the difference in the respective earnings distribution. However, as we can see in Figure 6b, adjusting for educational attainment and age makes a somewhat modest difference relative to the raw wage distribution.

Finally, as shown in Figure 6c, adding occupations and labor market activity status does make a substantial contribution and the counterfactual distribution of log weekly wages for immigrants that entered the U.S. directly is now a lot more similar to the one for immigrants having entered the U.S. from Canada, although there still exists a non-trivial difference.

The upshot from the counterfactual analysis indicates that the better wage outcomes of the immigrants entering the U.S. from Canada are to a considerable degree due to the latter being employed in better paying occupations and being less likely to be unemployed at the time of the interview as well as being more likely to work full time. This suggests that having had some experience in Canada prior to having entered the U.S. may help along potentially multiple dimensions, namely that for some of those immigrants entering from Canada their education is quite likely to have been acquired there–although there is no direct way to tell–and that whatever labor market experience they may have gained there may be better rewarded than the same experience in the source country for immigrants entering directly. We will return later to investigate this point.

Although illustrating the role of certain characteristics by successively adding them to the counterfactual distributions in Figure 6 is helpful in identifying which ones seem to make more of a difference, the graphical illustration is lacking in that it does not inform us precisely about the relative contribution of the covariates to the composition effects. We turn to that issue next.

5.2 Assessing the Relative Importance of the Observables

Correcting for composition we saw in Figure 6 that the distributions of weekly earnings were fairly similar for immigrants entering the U.S., whether they transited through Canada or not, although some differences remain. In this section we use the recentered influence function regression method-

[8]Other changes were implemented starting in 2002 that placed further emphasis on education and on overall "adaptability". At the same time additional programs were introduced in the Immigration and Refugee Protection Act that tried to serve the complementary goal of addressing perceived labor shortages, notably in the commodity sector. See Ferrer, Picot and Riddell (2014) for a summary of the evolution of the immigration policy environment in Canada.

ology developed by Firpo et al. (2009) (FFL) to assess which observables are the main contributors to both the composition effects and the earnings structure effects (the difference in distributions not accounted for by observables).

By analogy with the Oaxaca-Blinder decomposition, which the FFL methodology generalizes to allow the computation of summary statistics at any quantile instead of just at the mean, we want to evaluate the importance of the "X's" vs that of the "betas". Consider for example the observed median weekly wage gap between immigrants entering the U.S. either through Canada (C) or directly (D):

$$\Delta_{.5} \equiv q_C(.5) - q_D(.5)$$

By using the DFL decomposition technique, one can construct a counterfactual earnings distribution, in this case the distribution of weekly wages for immigrants entering directly if they had the same distribution of characteristics as those entering from Canada. This provides us with a counterfactual median weekly wage $q_{cf}(.5)$:

$$\Delta_{.5} = (q_C(.5) - q_{cf}(.5)) + (q_{cf}(.5) - q_D(.5)) \tag{1}$$

The first pair of terms gives the wage structure effect (the distribution of the X's is held constant but not the returns to skill functions) while the second pair yields the composition effects (the return to skill function of the immigrants entering the U.S. directly is held constant but not the distribution of the X's). Labelling the part due to wage structure effects Δ^{β} and the part due to composition Δ^{X} we thus have:

$$\Delta_{.5} = \Delta^{\beta}_{.5} + \Delta^{X}_{.5}$$

and the FFL methodology allows the evaluation of the relative importance of each individual regressor to both the wage structure and the composition effects. To assess whether and by how much those effects vary at different points of the distribution, we report the results at the 20th, 50th, and 80th percentiles. We also show two sets of results, one for the overall sample of immigrants entering the U.S. either directly or by first transiting through Canada, and the other for all immigrants entering through Canada with those who entered the U.S. directly before they were twenty years old. The idea is to see if the wage structure effects change when using a sample of immigrants whose post-secondary education was almost certainly acquired in the United States and thus issues of school quality affecting the returns to education should be less of a concern for them relative to immigrants having entered the U.S. from Canada.[9]

[9]It is still true, though, that we do not know if immigrants from Canada received their schooling there, in their

Looking first at the median weekly wage gap in Table 2, we can see that composition effects account for over 55 percent of the differential, thus leaving more than 40 percent due to wage structure effects. This is not surprising given what we saw in Figure 6 where controlling for observable characteristics was not sufficient to account for all of the difference between the wage distribution of the non Canadian-born immigrants and that of the immigrants entering the U.S. directly.

Turning to the individual contributions of the covariates, it seems clear that occupational segregation is a main factor driving the spread between the two groups, with a contribution of over 45 percent to the composition effects, followed by educational attainment and the combined contributions of weeks worked and full-time status.

It is more difficult to assess the relative importance of the returns to observable characteristics to the median weekly wage gap, given the lack of precision in the estimates. In the next section we will use a different approach and estimate separate log wage models for each group to see if different returns to education and labor market experience play a role as well in generating different wage outcomes.

If we look at the weekly wage gap at the 20th percentile, we can see that the role of composition effects is relatively less important than it is at the median, with about 45 percent of the total gap being accounted for by differences in observable characteristics. Again, differences in occupations are a major contributor, followed by educational attainment and full-time status. In fact, the role of full time work is substantially more important than it is at the median, suggesting that relatively lower skill immigrants entering from Canada are better able to integrate the labor market on a full-time basis than is the case for those not transiting through Canada.

At the other end of the skill distribution, we first can see that the gap at the 80th percentile is smaller than at the lower end with differences in observables accounting for a little over half the gap. Also, it seems that both groups of immigrants are much more likely to work in similar occupations that is the case either at the median or at the 20th percentile. In addition, working full time or not and weeks worked play a more minor role in contributing to the composition effects. This is perhaps not particularly surprising given the part of the distribution under consideration.

In Table 3 we report the results from decomposing the weekly wage gap when the sample of direct immigrants is limited to those who entered the U.S. before they were twenty. As mentioned, the recognition of foreign credentials in terms of educational attainment–at least at the post-secondary level–should not be an issue, and one would expect that composition effects should be the main driver of the differences in weekly wages.

country of birth, or elsewhere.

In fact, wage structure effects are quite a lot smaller than for the sample in which all direct immigrants are included. Composition effects are clearly driving most of the differences in weekly wages, and we can see that educational attainment and experience account for a relatively larger share than in Table 2. Occupational segregation seems to matter only at the median and at the 20th percentile and labor market indicators (full-time status and weeks worked) are largely irrelevant.

One important aspect of this decomposition exercise is the fact that a large portion of the measured composition effects for the overall sample, namely those associated with occupations, full-time work status, and weeks worked, are associated with characteristics that are clearly outcome variables. As such while they are not strictly "wage structure effects" in the narrow sense implied by the decomposition methodology, in fact they play a similar role by representing, at least in the case of full-time work status, the employability of direct immigrants relative to those entering from Canada. Whether the occupational segregation that we observe between the two groups is also a manifestation of "under-employment" is less clear.

The upshot from Tables 2 & 3 is that while composition effects are very important, there is still a part of the difference in wage outcomes for immigrants entering from Canada vs those entering directly that remains unexplained when looking at the overall sample. We say "unexplained" because while the total wage structure effects can be measured quite precisely, the distribution of those total effects across characteristics is not very informative, or at least not as informative as one may wish. Consequently, we turn next to an alternative way of investigating how skills are rewarded for the different groups, with a focus on assessing whether there is evidence that education and experience acquired in Canada may be rewarded differently for immigrants entering the U.S. from there relative to those having entered directly.

5.3 Returns to Education and Experience

In this section we present evidence on returns to skills for our three groups of immigrants in the U.S., the Canadian born, the immigrants entering from Canada who are not Canadian born, and the immigrants who enter directly from their source country. The results are first presented relative to the returns for the native born in the U.S. and then using relevant immigrant samples to make direct comparisons.

As we saw above, part of the discrepancy in earnings for the direct immigrants born in the same country as those who transited through Canada stems from differences in educational attainment, the immigrants coming from Canada having a clear advantage. Here we focus on another potential driver of those differences, namely that the returns to education and experience may be higher when

someone enters the U.S. from Canada.

One channel through which education could potentially generate a greater return for immigrants coming in from Canada is that some or all of their education may have been acquired in Canada, whose educational institutions are fairly similar to those in the U.S.. Analogously for experience, the combination of having worked in an English-speaking environment in addition to gaining experience in a similar labor market would make the skills of immigrants coming from Canada more portable to the U.S..

One difficulty we face is that there is no information on the source of the immigrants' education in the U.S. Census. For all we know, all or none of it could have been acquired in Canada. To a degree this applies as well to immigrants entering directly into the U.S.. However, in their case one uses the usual procedure of using age at entry to help identify, albeit imperfectly, where the immigrants acquired their education. A similar issue arises when trying to identify the source of the experience acquired in the canadian labor market. Because of those identification issues, we would expect that the returns to education and to experience should be higher for canadian-born immigrants, for whom those issues are largely irrelevant.

In Table 4 we present the results by gender using years of completed schooling while in Table 5 we report the results using educational attainment categories. One practical issue which arises when defining those categories is that there are very few immigrants–Canadian-born or not–with less than a high school diploma. In fact, in relative terms there are not that many either with just a high school diploma. This is not surprising given the distribution of educational attainment for immigrants entering the U.S. from Canada. Thus, to have large enough sample sizes we create four categories: completed high School or less , some post-secondary, B.A. degree, and more than a B.A.

Looking first at the results using years of education, we can see that the returns are lower for any of the three immigrant groups in the case of males and that the difference in the penalty for having foreign-acquired education is small, going from -0.041 for non-Canadian-born immigrants from Canada to -0.047 for those not having transited through Canada. It is perhaps surprising that even in the case of the Canadian-born, for whom there should be relatively little ambiguity about the source of their educational attainment, their returns are smaller than it is for the native born U.S. citizens. When looking at females, however, there is a considerably larger difference between the immigrants having entered the U.S. from Canada and those having entered directly. In fact, one cannot reject the hypothesis that the immigrants from Canada who are not Canadia-born have different returns to education than the native-born U.S. citizens.

Turning to the experience, the male-female differences in the results are somewhat reversed relative to those for education. In the case of males, the return to foreign experience are discounted

most for the immigrants not coming from Canada, followed by those who entered the U.S. after transiting through Canada, with the Canadian-born immigrants actually enjoying a premium for their years of experience relative to U.S. born citizens. For females, the differences in the returns to education described above are not mirrored by similar patterns when it comes to labor market experience. While the "direct" immigrants have the largest discount for their years of foreign experience, the difference is not very large relative to the immigrants from Canada except in the case of the Canadian-born immigrants, whose experience is roughly rewarded the same as it is for U.S. citizens.

While the results using years of education are indicative of differences in the returns, at least for females, imposing the restriction that education enters linearly may mask important differences in how certain levels of educational attainment are rewarded for immigrants. Using the educational attainment categories defined above, we can see in Table 5 that in the case of males, having at least a B.A. degree appears to be rewarded more for direct immigrants than for those who transit through Canada, although the lack of precision due to the small size of the subsample of individuals who entered the U.S. from Canada over the previous five years is such that the difference in the returns for the two goups is not statistically significant. What is perhaps more surprising is the fact that there is evidence that the return to a post-graduate degree is negative for the Canadian-born, although the lack of precision precludes reaching a stronger conclusion.

For women, the large difference in the return to years of schooling between non-Canadian-born immigrants entering from Canada and those entering directly is mirrored in the large difference in the coefficients associated with having the educational attainment categories, especially in the case of having at least a B.A. degree.

One problem we face is that it is not possible to know where the non-Canadian-born immigrants entering the U.S. received their schooling. All we know is that they were living in Canada five years before. Some may have been schooled entirely in their country of birth, while others went to school in Canada only. Still others may have received part or all of their schooling in a country other than either their birthplace or Canada.

This issue makes more difficult the interpretation of the returns to schooling coefficients, although as we saw above the evidence is not compelling that canadian-born immigrants have greater returns to schooling that immigrants transiting through Canada, which one would have expected if the issue of skill recognition was more relevant for non-canadian-born immigrants.

To get an idea of whether having been educated in Canada rather than in their source country matters, we compute by source country as well as by gender and age group the fraction of immigrants by source country who arrived when aged 19 or less–and thus would almost certainly have acquired

their post-secondary education in Canada–using the 2001 Canadian census. We then merge with the U.S. census and use the interaction of that variable with either years of schooling or levels of educational attainment as additional covariates in our wage regressions. If getting post-secondary education in Canada matters relative to being educated in the source country, we would expect a positive coefficient, although this may apply mainly in the case of immigrants coming from less developed countries or non-english-speaking countries.

The results are reported in Table 6. There is some evidence of higher returns to education, at least when using years of schooling, for those belonging to immigrant groups that have a higher proportion of individuals arriving before 20, consistent with the notion that getting post secondary education in Canada is valuable. The evidence is weaker when using educational attainment categories due to lack of precision in the estimates.

5.4 Relative Migration Flows to the U.S.

Having shown that the outcomes in the U.S. for recently arrived immigrants from Canada are similar for the Canadian born and those born outside Canada, with somewhat larger returns to experience and educational attainment for the Canadian born, we now investigate the relative "pull" that the U.S. exercises on potential migrants from both those groups of canadian residents by specifically looking at migration flows.

One approach to characterize migration patterns would be to use the Canadian census, say in 1996, and trace the age distributions for both the Canadian-born and the immigrants. Then, using the 2001 census, we could trace the age distributions using only the individuals who were in Canada five years before in the 1996 census. If certain specific age groups are more likely to emigrate to the U.S., this should be apparent when comparing the 1996 and 2001 distributions. If out migration is uniformly distributed across all ages, then of course there would be no change in the age distributions between the two census years.

One difficulty with this approach is that, in the case of immigrants, some of them may have left Canada between 1996 and 2001 without going to the United States by e.g. returning to their home country. While migrating to destinations other than the U.S. also applies to the Canadian born, return migration does not except for those with dual citizenship.

An alternative way to investigate this is to look at the total number of non-canadian immigrants who entered the U.S. from Canada in the previous five years and compare that number to the number of immigrants in Canada five years before. To operationalize this we first use the 2000 U.S. census to extract a sample including all those who entered from Canada over the previous five year,

along with their individual characteristics including whether they are canadian-born or not, as well as their age, educational attainment and gender. Similarly, we use the 2001 Canadian census to extract a sample of residents with their socio-demographics, including nativity status. We exclude from the sample all the immigrants who entered Canada over the previous six years so as to have roughly the same base population as the one to which belonged those who emigrated to the U.S. between 1995 and 2000.[10] We then append both samples and we can then compute the fraction of migrants to the U.S. by age group, educational attainment, and gender. Sample weights are used throughout to reflect the underlying populations in the U.S. and in Canada.

The overall migration rates for individuals aged between 25 and 54 are roughly two to three times larger for immigrants compared to native Canadians, with 0.6% of native Canadian males having migrated to the U.S. compared to 1.7% for immigrant males. The analogous figures for females are 0.4% and 0.9%, respectively. We should emphasize that the rates for immigrants may represent an upper bound as we exclude from the sample those who left Canada but did not go to the U.S.. To check whether this makes a noticeable difference, we used the 1996 census instead of the 2001 census to merge with the 2000 U.S. census, building a sample of Canadian-born individuals along with immigrants who arrived in Canada up to 1995 to match with the question in the U.S. census asking where people were five years before.[11] As it turns out, it makes very little quantitative difference and no qualitative difference compared with the rates measured using the combined 2000 and 2001 canadian and U.S. censuses.

At first blush, then, the overall incidence of out migration does not seem to be all that important, either for immigrants or native Canadians. The picture changes dramatically, though, when we break down those rates by age and educational attainment.

Looking at Table 7, which reports the incidence of migration by age and education separately for males and females, it is clear that for both the Canadian-born and the immigrants, migrants have more education than stayers, and this is especially true for those with post-graduate degrees aged less than 45. However, the evidence is rather weak that the propensity of immigrants to emigrate to the United States increases with educational attainment relative to native born Canadians. It would thus seem that the higher relative likelihood of leaving Canada to enter the U.S. is fairly constant across age and educational attainment groups.

[10] Leaving aside mortality, we say "roughly" because immigrants who were in Canada in 1995 may have left for countries other than the United States by, for example, returning to their country of birth.

[11] We adjust the age in the sample of immigrants in the 2000 U.S. census such that it corresponds to the age range of the individuals in the 1996 canadian census.

5.5 Sensitivity to U.S.-Canada Relative Earnings by Occupation

Having shown that high skill immigrants and native-born Canadians are twice as likely to emigrate to the United States and that the relative propensity to emigrate is rather stable across educational attainment categories, our next step is to investigate the sensitivity of immigrants to economic incentives relative to natives. In section 4.2 we saw that the U.S.-Canada differences in the wage structures were more substantial as one moves up the observed skill distribution, and thus the attractiveness of the U.S. labor market should be stronger for the more skilled workers. However, that does not directly address the issue of whether immigrants living in Canada may be responding more to those incentives relative to the native born. Evidence that they do would provide a rationale for why the incidence of emigration to the United States is larger for immigrants compared to natives.

The produce a measure of those economic incentives that can be directly linked to our census samples, we use the IPUMS-International files of the 2000 and 2001 U.S. and Canadian censuses, respectively, to compute the ratio of U.S. to Canadian monthly earnings by gender, age group, and occupation for full year/full time workers, including the self-employed. We use the one-digit International Standard Classification of Occupations included in the IPUMS-I. A more refined classification, for example at 2 digits, may have been preferable but the occupation codings in the U.S. and Canadian censuses are quite different, making the construction of a reliable crosswalk fairly difficult.[12]

Analogously to what we did in the previous section, we keep the individuals who were in Canada five years before and who now live either in the U.S. or still live in Canada, in addition to deleting those who entered Canada between 1996 and 2001 so that the sample reflects the population "at risk" of leaving in 1996.

In Table 8 we report probit estimates in elasticity form of the relationship between living in the U.S. in 2000 and U.S.-Canada wage ratio, by immigration status and by gender, controlling for age. Note that the results are very similar if instead we first compute the migration rates at the same level of aggregation as the wage ratio and regress the log of the migration rate on the log wage ratio, controlling as well for age. In both cases, we cluster the standard errors at the one-digit occupation level.

We can see that the elasticity of the propensity to move to the U.S. with respect to relative earnings is very large for immigrant males, irrespective of the age range considered and of whether they are Canadian-born or not. For females, there is some evidence of an elasticity larger than

[12]Whether we include self-employed workers or not makes very little difference. The same is true in the case of part-time individuals.

one for both immigrants native-born canadians, but the estimates lack precision which precludes reaching a more definitive conclusion.

In summary, there is little evidence that the larger "baseline" propensity of immigrants in Canada to move to the United States can be accounted for by a steeper gradient linking educational attainment and the incidence of migrating or by a greater sensitivity to economic opportunities, as measured by relative occupational wages in the U.S. and in Canada. It could be that some dimensions of economic opportunity such as e.g. a potentially larger pool of career enhancing job-to-job transitions in the U.S. may play a role and that those are difficult to measure, especially as they depend at least in part on expectations. Also, that individuals–immigrants–who have already revealed their willingness to move by migrating to Canada appear to also be more willing to make an additional move to the United States than is the case for native-born individuals, who in most cases never had to make such decisions, is perhaps hardly surprising.

5.6 Second Generation Immigrants

6 Discussion of the Results

Perhaps the strongest evidence found in this paper that some high skill immigrants transit in Canada on their way to the U.S. is for individuals in their 30s, especially males. Roughly 12% of that population of immigrants in Canada in the mid-90s with a post-graduate degree left for the U.S. over the next five years, compared to 5% for native-born Canadians. And although fewer of the 40 to 49 year-old immigrants left for the U.S., their rate of 6.8% is substantially above the 1.6% observed for the native-born. For the other education-age cells the proportion of immigrants leaving Canada relative to that of native-born Canadians is quite smaller and relatively constant. The fact that the vast majority of immigrants seem to stay–at least in the short to medium run–suggests that the system works largely as intended with Canada attracting and choosing high-skill individuals and retaining them.

However, given the data limitation which allows the identification of the country of residence only for the immigrants who entered the U.S. over the previous five years, it is more difficult to assess the role of the canadian labor market as a training ground for a future move perhaps some years after arrival in Canada. In our analysis of the returns to experience and education, we find some evidence that immigrants entering the U.S. from Canada enjoy greater returns for their skills relative to immigrants who came directly to the U.S. even though it is not possible to know how much

canadian labor market experience the immigrants had prior to entering the United States.[13] One crucial skill is knowledge of English and given that economic immigrants entering Canada basically have to be functional in one of the two official languages, the combination of language skills with some canadian experience may prove valuable in the U.S. Indeed, while we classify full-time work status, weeks worked, and occupations as observables characteristics that can account for a substantial part of the weekly wage differences between immigrants entering from Canada and those entering directly, the fact that those observables are not exogenous makes them look somewhat less like "true" exogenous traits and more like structural factors that reflect their experience in Canada prior to migrating.

An alternative and indirect way to ascertain whether immigrants in Canada gain some experience there before moving to the U.S. is to exploit the fact that we know their year of arrival to see how the distribution of years since they arrived change from one census to the next by imposing restrictions on the year of arrival. The idea is to see whether there is evidence of changes in the distribution of years of experience in Canada for a given population of immigrants.

More concretely, we first look at the years in Canada distribution in 1991 and again in 2001, excluding immigrants who arrived between 1991 and 2001. In principle, absent any or at least proportional attrition, the two distributions should be very similar.[14]

As we can see in Figure 7A, where we focus on individuals with at least a B.A. degree, there is little evidence that the distribution changes between the two censuses. If it were the case that recent immigrants in Canada in 1991 left sometime between 1991 and 2001, we should observe a discrepancy between the two distributions. Note that it makes little difference when we include all individuals regardless of educational attainment. A similar comparison using the 1996 and 2006 censuses leads to the same conclusion (Figure 7B), although the fact that years of arrival in Canada are partially coded in intervals in 2006 forces us to restrict to fifteen years or less the number of years since arrival.

One limitation with those figures is that they pre-select the stayers in 1991 and 1996. Therefore, one can only conclude that the stayers in 1991 or 1996 were largely still there ten years laters. Perhaps the more interesting pattern in those figures is the observed dip between approximately 5

[13] It is worth reiterating that because we cannot identify the class of immigrants in our data, it is impossible to know if this difference in returns to skills holds for (direct) economic migrants who entered the U.S. through an employer sponsorship. Given the proportion of immigrants coming under the family reunification category, it is quite possible that the lower average returns to skills are driven by those individuals who belong to that category.

[14] We include individuals aged 25-64 in 1991 and 35-74 in 2001 and, for ease of comparison, we subtract ten years from the number of years in Canada in 2001.

and 15 years in the base years 1991 and 1996.[15] Such a dip combined with the fact that conditional on being in Canada in either 1991 or 1996 and still being there ten years later, is suggestive that immigrants who first come to Canada with the notion of moving to the U.S. in a second stage do so rather quickly. If they waited longer we should have seen a difference in the 1991 (1996) and 2001 (2006 distributions).

Ultimately, of course, it is not possible with the data that we have to determine if they move to the U.S. after gaining some experience in the canadian labor market or if they gain experience while waiting to get a job there. The evidence presented in this paper is certainly consistent with a two-stage selection process that in itself would generate the more favorable outcomes for those non-Canadian immigrants entering the U.S. from Canada. Finding clues that the "canadian experience" also contributes is more daunting.

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[15]Note that this apparent attrition is consistent with the simple two-stage migration model outlined in Section 3.

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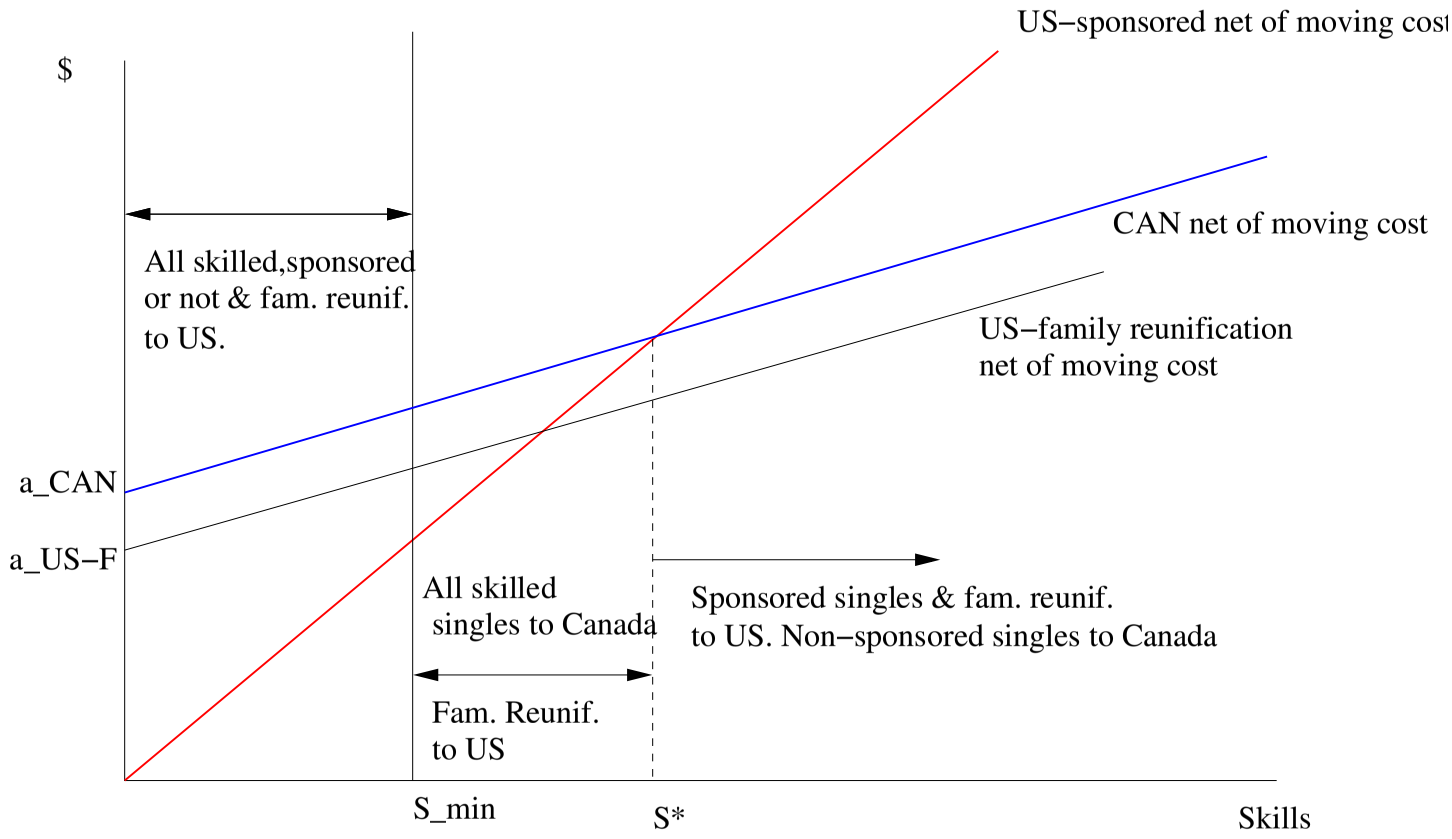


Figure 1.Initial Migration Decision with Minimum Skill Requirement in Canada
Two categories in US: Sponsored and Family Reunification

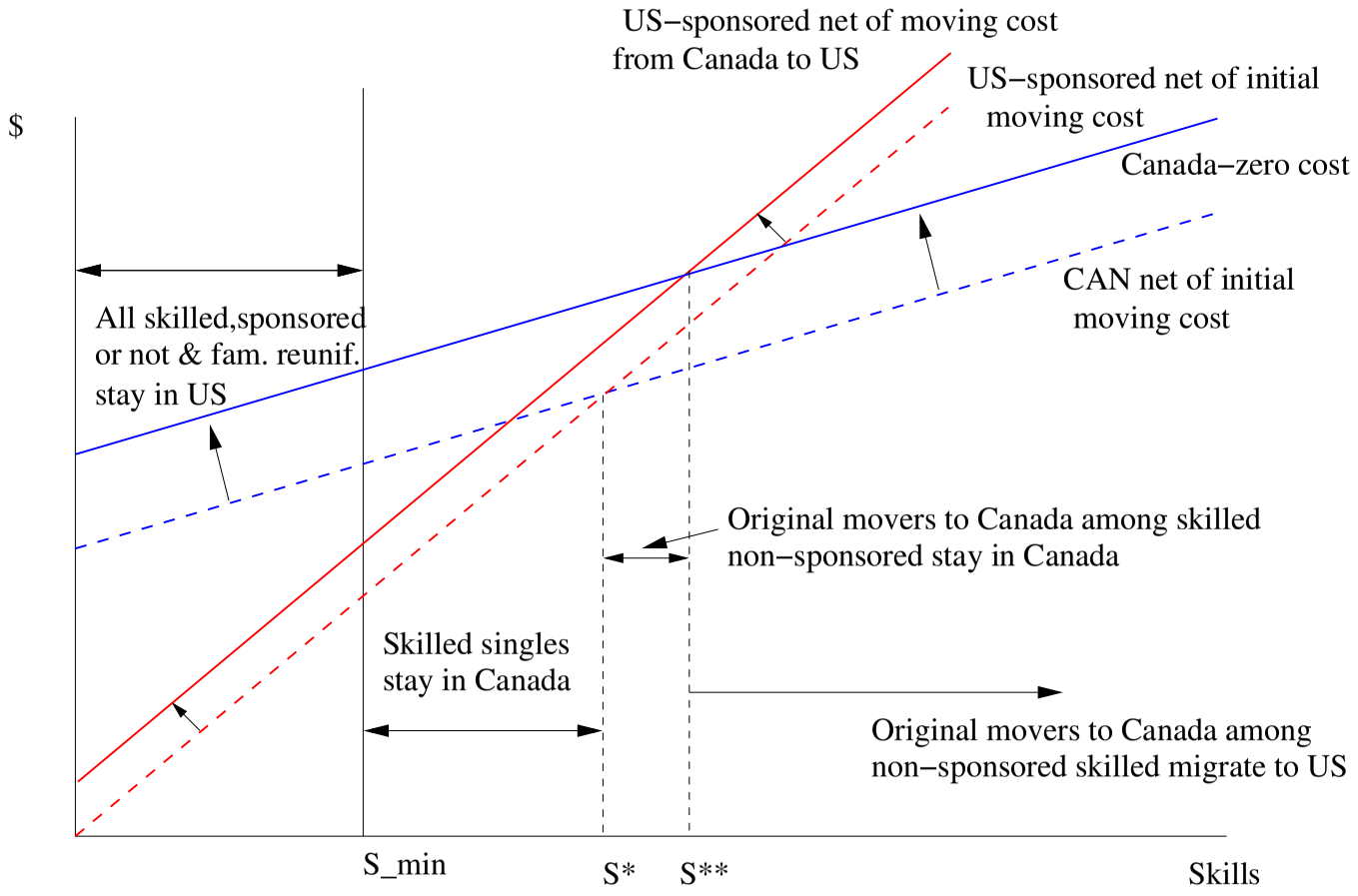
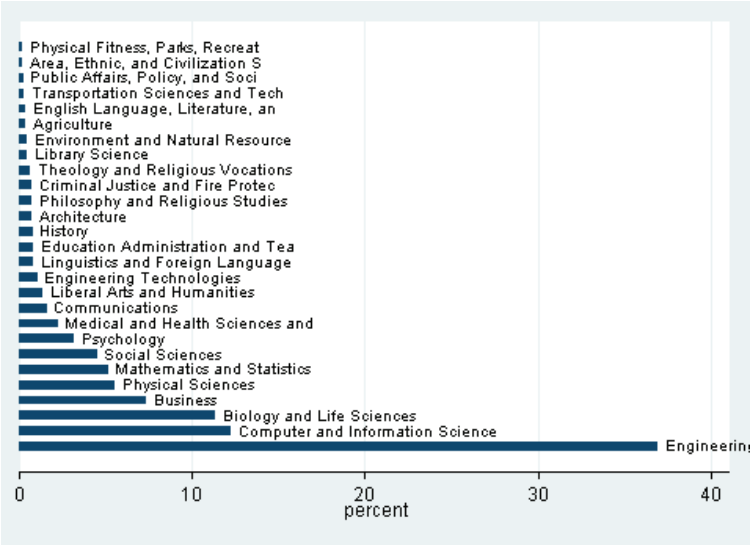


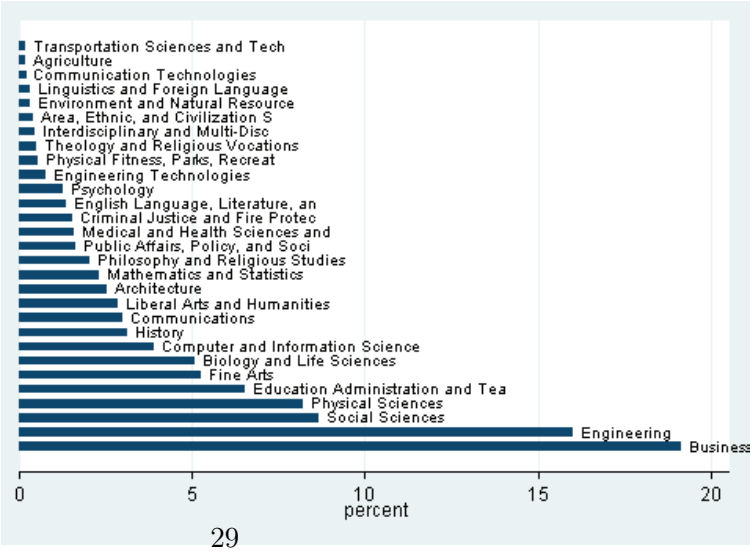
Figure 2. Second Stage Migration Decision for Skilled Singles

Figure 3A: Field of study of B.A. degree - Males

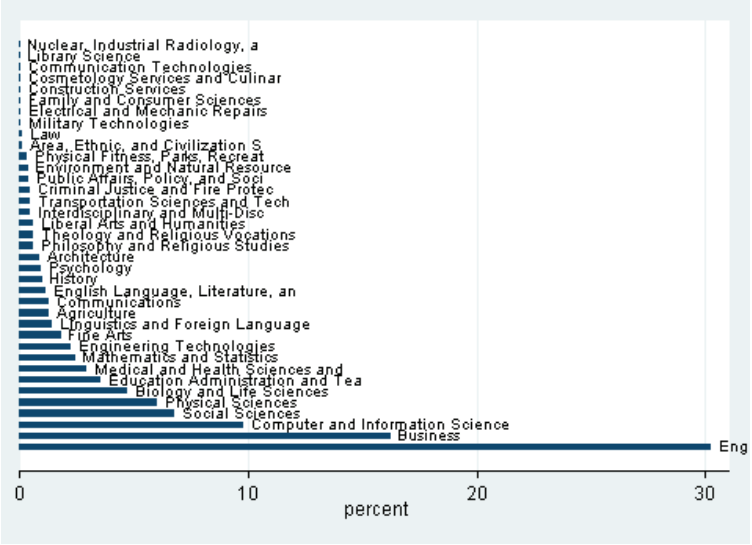
Non-Canadian Immigrants



Canadian Immigrants



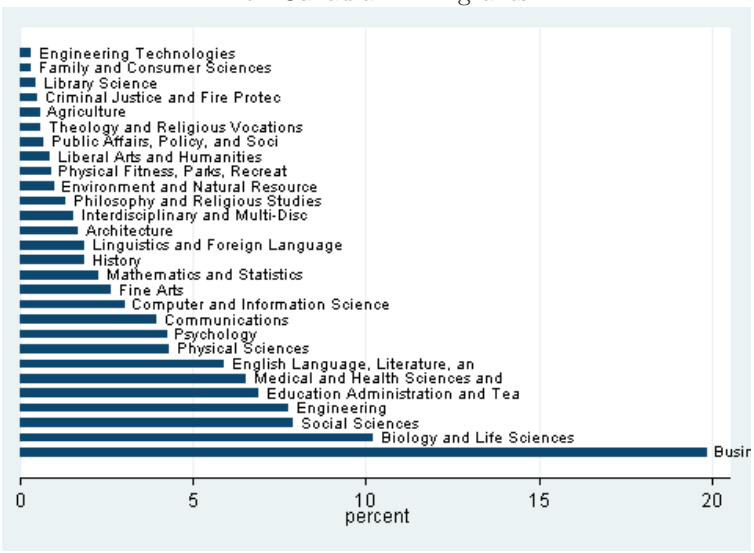
Direct Immigrants



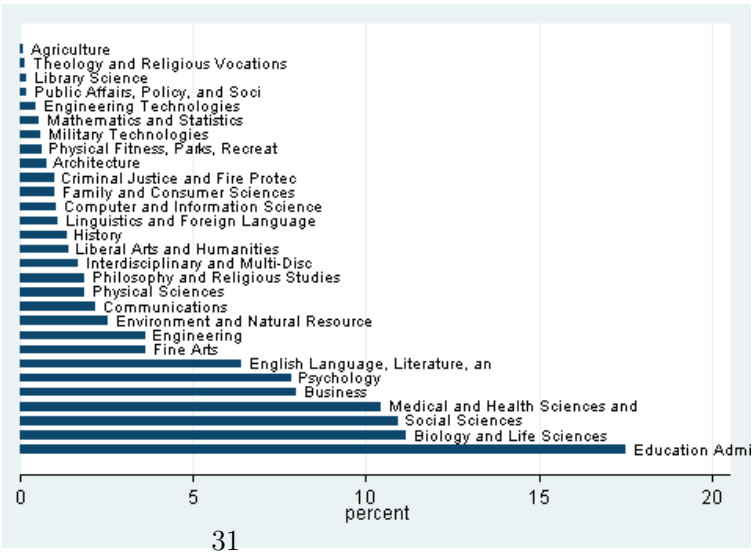
Source: ACS: 2009-2013

Figure 3B: Field of study of B.A. degree - Females

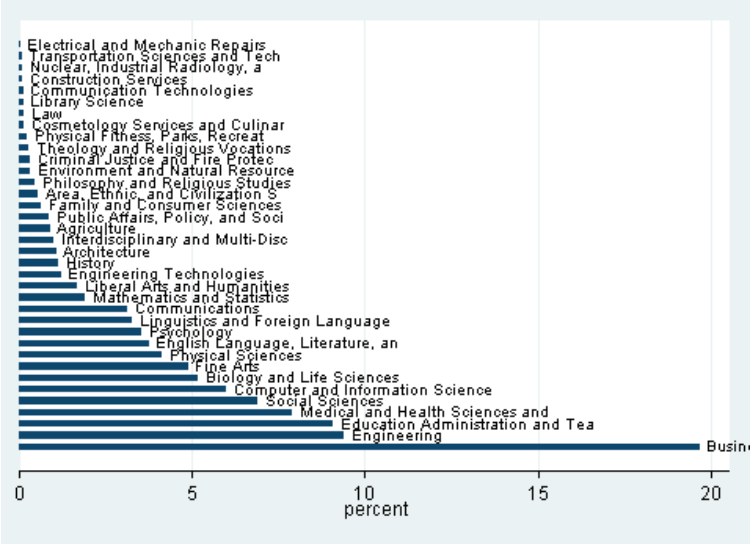
Non-Canadian Immigrants



Canadian Immigrants

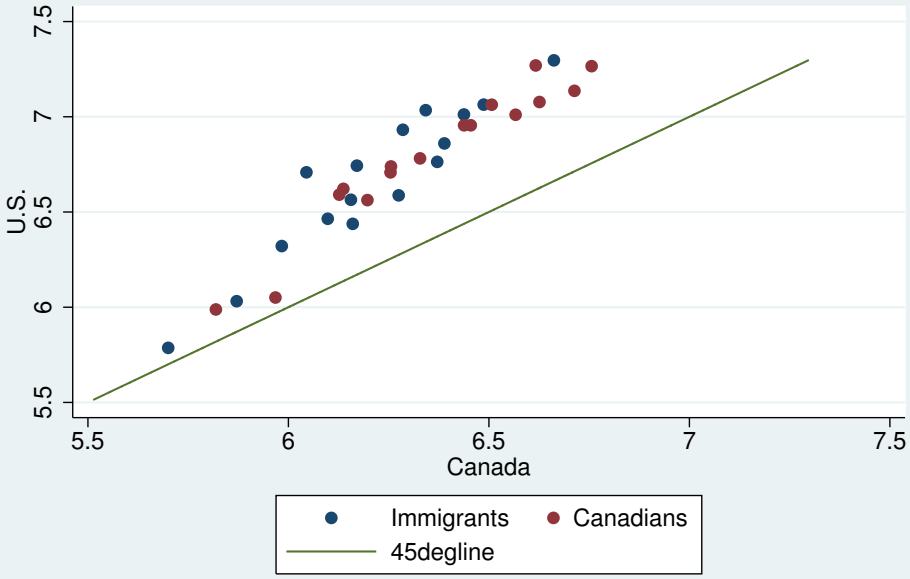


Direct Immigrant Women



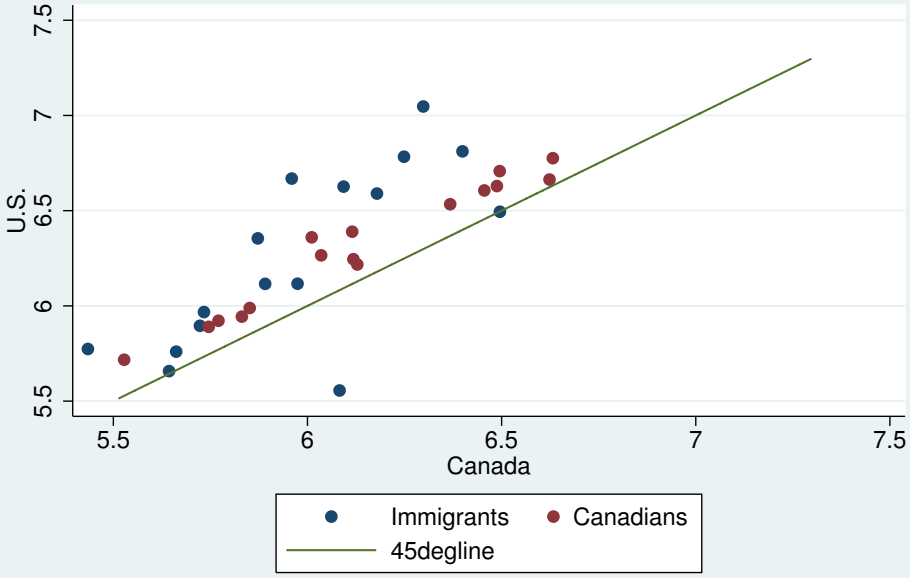
Source: ACS: 2009-2013

Figure 4A Male log weekly wages in the U.S. and Canada



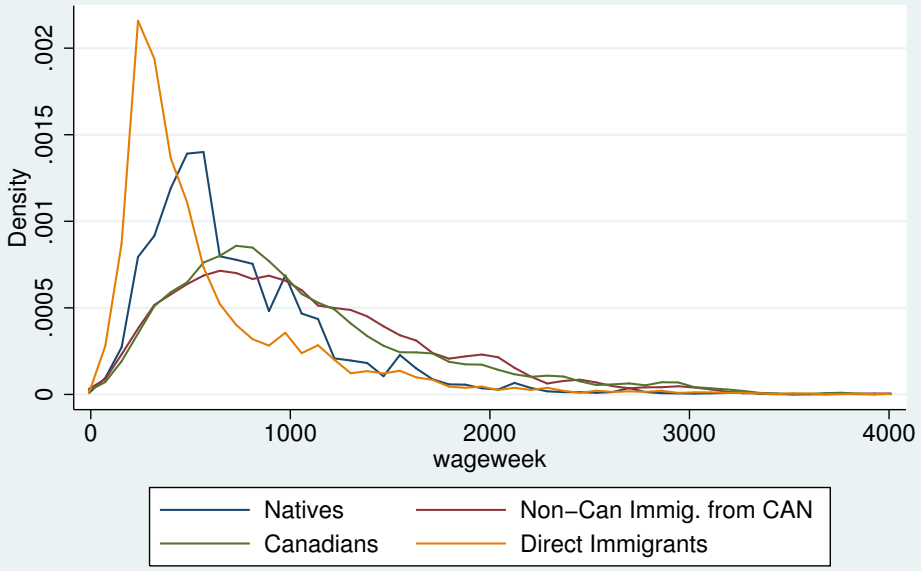
Source: 2000 U.S. Census & 2001 Canadian Census

Figure 4B Female log weekly wages in the U.S. and Canada



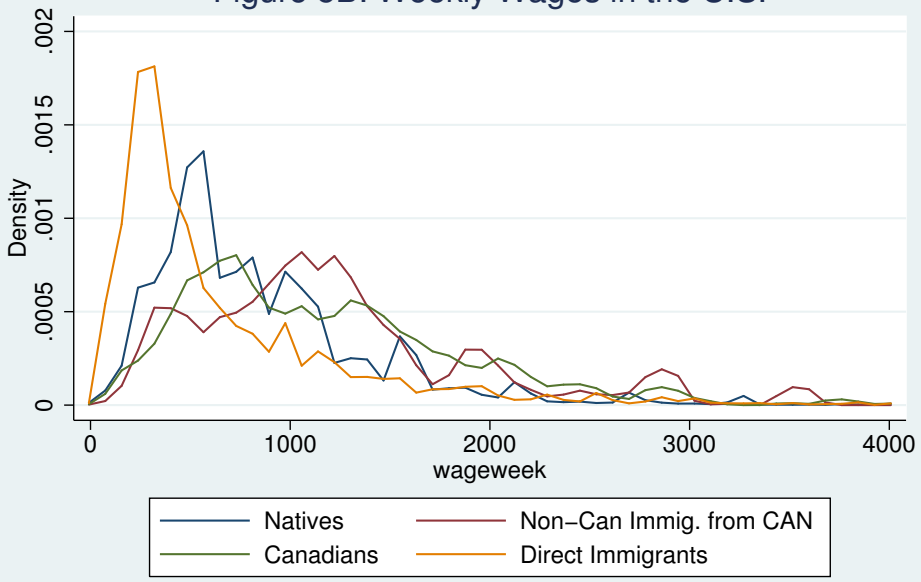
Source: 2000 U.S. Census & 2001 Canadian Census

Figure 5A: Weekly Wages in the U.S.

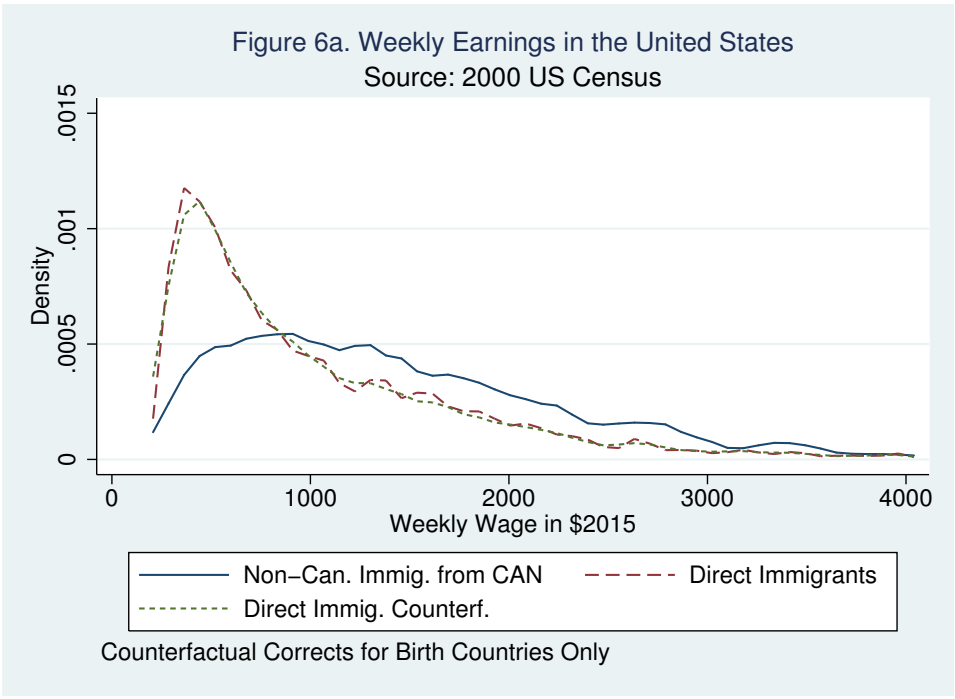


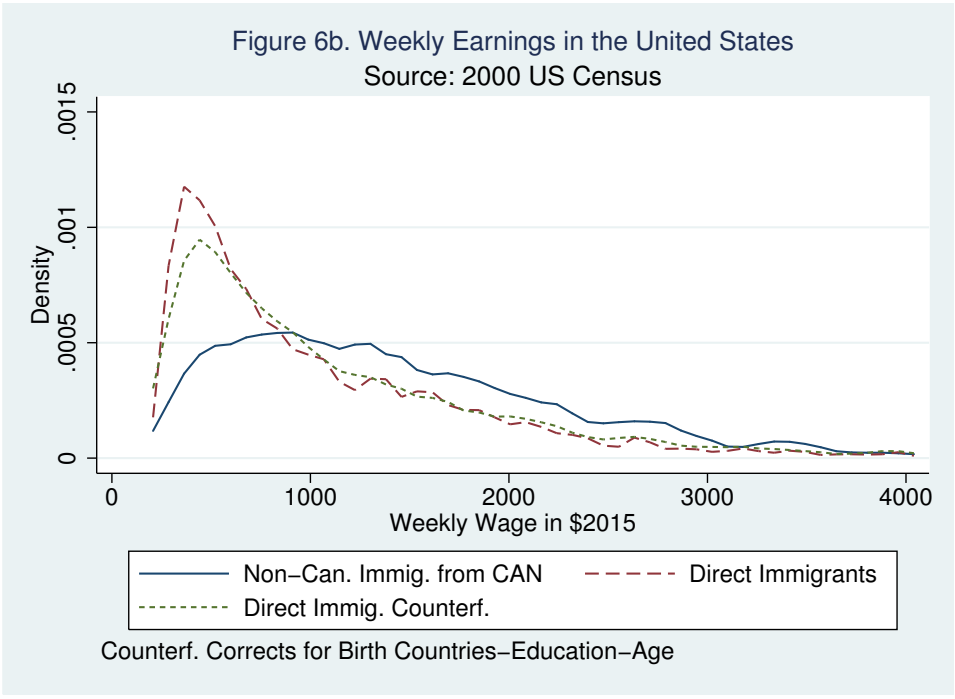
Source: U.S. Census 2001

Figure 5B: Weekly Wages in the U.S.



Source: ACS 2003–2013


Figure 6a. Weekly Earnings in the United States
Source: 2000 US Census
Density
0
.0005
.001
.0015
0
1000
2000
3000
4000
Weekly Wage in $2015
Non−Can. Immig. from CAN
Direct Immigrants
Direct Immig. Counterf.
Counterfactual Corrects for Birth Countries Only


Figure 6b. Weekly Earnings in the United States
Source: 2000 US Census
Density
0
.0005
.001
.0015
0
1000
2000
3000
4000
Weekly Wage in $2015
Non−Can. Immig. from CAN
Direct Immigrants
Direct Immig. Counterf.
Counterf. Corrects for Birth Countries−Education−Age

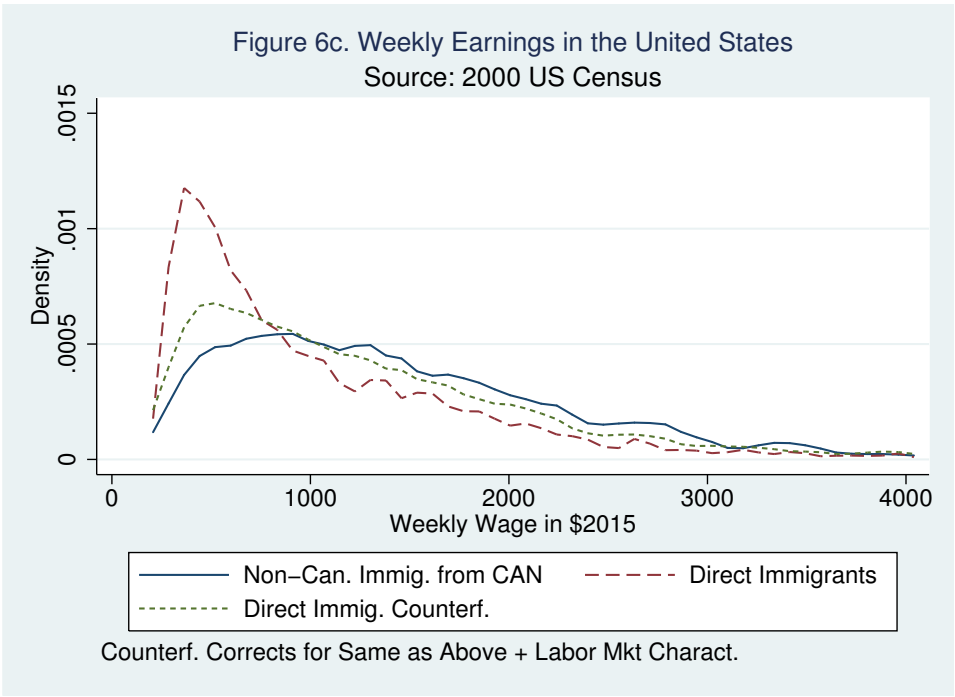
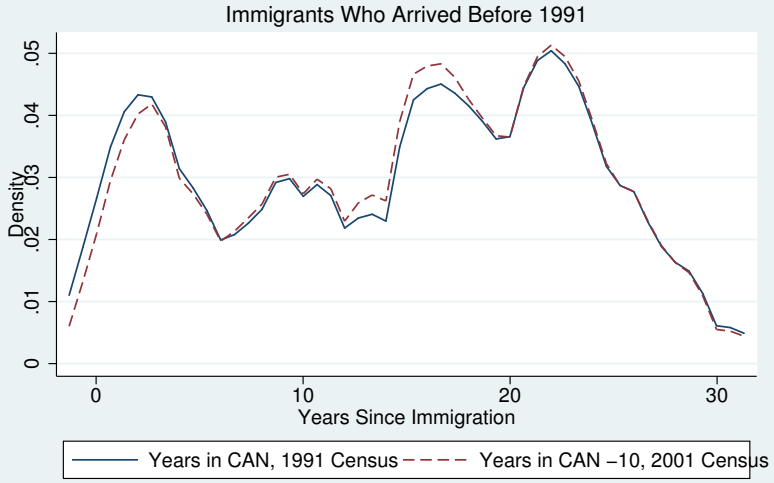
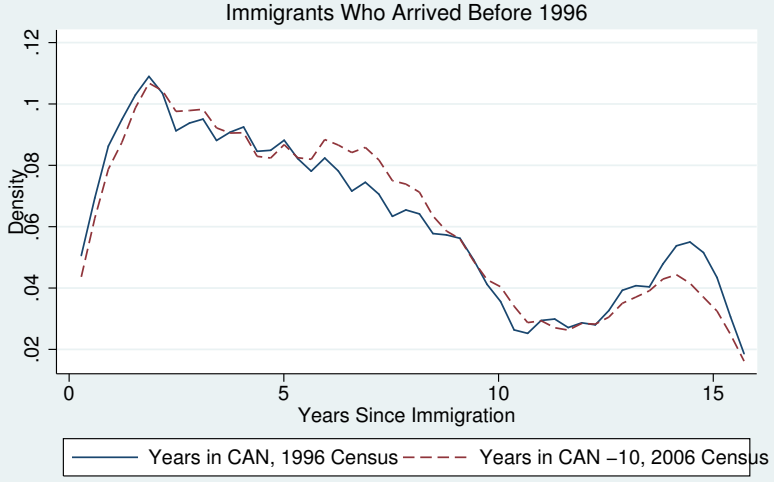

Figure 6c. Weekly Earnings in the United States
Source: 2000 US Census
Density
0
.0005
.001
.0015
0
1000
2000
3000
4000
Weekly Wage in $2015
Non−Can. Immig. from CAN
Direct Immigrants
Direct Immig. Counterf.
Counterf. Corrects for Same as Above + Labor Mkt Charact.

Figure 7a. Distribution of Years in Canada–B.A. Degree or More



Sources: 1991 and 2001 Canadian Censuses

Figure 7b. Distribution of Years in Canada–B.A. Degree or More



Sources: 1996 and 2006 Canadian Censuses

Table 1: Share of males aged 25-64 with at least a B.A. degree in the U.S. and Canada by region of origin

	In the U.S.	In Canada
Natives	0.27	0.18
Canadians	0.46	0.17
Africa	0.51	0.43
Americas	0.10	0.17
China	0.57	0.46
Europe	0.37	0.21
India	0.70	0.38
OthAsiaME	0.40	0.35
Philippines	0.44	0.36
UK	0.50	0.25

Recent Immigrants in the U.S.

	Directly to the U.S.	from Canada to the U.S.
Canadians		0.63
Africa	0.43	0.70
Americas	0.12	0.38
China	0.66	0.92
Europe	0.50	0.68
India	0.79	0.85
OthAsiaME	0.54	0.70
Philippines	0.53	0.68
UK	0.64	0.68

Notes: In the top panel, the shares are calculated for all male immigrants aged 25-64 in the U.S. in 2000 and in Canada in 2001. In the bottom panel, the shares are calculated only for male immigrants aged 25-64 who immigrated to the U.S. from 1995-2000, either from Canada or directly from the country of origin. Source: US Census 2000, Canada Census 2001.

Table 2. Effect of Variables on Weekly Wage Gap between Immigrants Entering the US Either Through Canada or Directly
2000 US Census: All Aged 25-64

	Quantile					
	20		50		80	
	Compos. Effects	Wage Str. Effects	Compos. Effects	Wage Str. Effects	Compos. Effects	Wage Str. Effects
Total	0.2465	0.2975	0.2819	0.2284	0.1460	0.1354
(s.e.)	(0.0128)	(0.0393)	(0.0130)	(0.0265)	(0.0125)	(0.0131)
Accounted for by:						
Education	0.0859	-1.5642	0.0554	-0.5579	0.0389	-1.6279
	(0.0090)	(0.6655)	(0.0064)	(0.4326)	(0.0061)	(0.4865)
Potential Experience	0.0090	-0.0301	0.0170	-0.1993	0.0288	-0.1951
	(0.0030)	(0.1487)	(0.0029)	(0.1057)	(0.0029)	(0.1110)
Occupation	0.1607	-0.0091	0.1288	-0.0377	0.0584	-0.0383
	(0.0108)	(0.0766)	(0.0082)	(0.0619)	(0.0063)	(0.0795)
Full Time Status	0.0548	0.4273	0.0270	0.0214	0.0099	0.0057
	(0.0039)	(0.1938)	(0.0022)	(0.0813)	(0.0014)	(0.0669)
Weeks Worked	0.0257	-2.1186	0.0210	-0.9993	-0.0041	0.4429
	(0.0072)	(0.7381)	(0.0050)	(0.3495)	(0.0045)	(0.2333)
Birthplace	0.0319	-0.2071	0.0328	-0.5210	0.0282	0.3026
	(0.0099)	(0.5672)	(0.0091)	(0.4228)	(0.0090)	(0.1825)
Constant	-	3.6039	-	2.4108	-	1.2169
		(1.2350)		(0.7349)		(0.5960)
Total Accounted for*:	0.3636	0.2749	0.4207	0.2014	0.1645	0.1145
	(0.0191)	(0.0320)	(0.0172)	(0.0246)	(0.0125)	(0.0266)
Approximation Error	-0.1172	0.0226	-0.0010	0.0270	-0.0185	0.0210
	(0.0163)	(0.0162)	(0.0132)	(0.0164)	(0.0121)	(0.0131)

Note.— The contributions of the covariates to the composition and wage structure effects are computed using the coefficients estimated with the methodology of Firpo et al., 2009. See text for details. *Other covariates contributing to both effects but not shown here are marital and region of residence dummy indicators. The contributions of education, experience, occupation, and birth countries represent the sum the contributions of each component (occupation and birthplace dummies, four educational attainment categories, and a quadratic in potential experience. Males and females are pooled together to save space as results are very similar for both.

Table 3. Effect of Variables on Weekly Wage Gap between Immigrants Entering the US Either Through Canada or Directly
2000 US Census: All Entering From Canada and Those Aged Less than 20 When Entering the US Directly

	Quantile					
	20		50		80	
	Compos. Effects	Wage Str. Effects	Compos. Effects	Wage Str. Effects	Compos. Effects	Wage Str. Effects
Total	0.3598	0.0748	0.4091	0.0765	0.2950	0.0954
(s.e.)	(0.0741)	(0.0746)	(0.0449)	(0.0425)	(0.0499)	(0.0418)
Accounted for by:						
Education	0.2331	-1.0755	0.1498	-0.7703	0.0705	-1.6446
	(0.0676)	(1.3979)	(0.0322)	(0.7453)	(0.0295)	(0.7240)
Potential Experience	0.0820	-0.5820	0.0667	-0.4291	0.0359	-0.0067
	(0.0284)	(0.3099)	(0.0167)	(0.1628)	(0.0161)	(0.2007)
Occupation	0.1206	-0.1152	0.0964	-0.1438	0.0126	-0.0766
	(0.0571)	(0.1513)	(0.0304)	(0.1122)	(0.0258)	(0.1313)
Full Time Status	0.0197	0.7563	0.0063	0.2905	0.0004	0.1720
	(0.0142)	(0.3563)	(0.0046)	(0.1197)	(0.0023)	(0.0926)
Weeks Worked	-0.0009	-3.3473	-0.0413	-1.0463	0.0165	0.2982
	(0.0590)	(0.7117)	(0.0232)	(0.3548)	(0.0182)	(0.2609)
Birthplace	0.1928	1.5739	0.1172	0.4411	0.0276	0.2807
	(0.0579)	(0.7134)	(0.0339)	(0.5042)	(0.0306)	(0.3753)
Constant	-	3.1106	-	1.5105	-	1.1168
		(1.9159)		(1.0623)		(0.8906)
Total Accounted for*:	0.6597	0.0598	0.3879	0.0103	0.1605	0.0864
	(0.0915)	(0.0754)	(0.0504)	(0.0418)	(0.0483)	(0.0489)
Approximation Error	-0.2999	0.0150	0.0212	0.0679	0.1345	0.0090
	(0.0853)	(0.0620)	(0.0483)	(0.0289)	(0.0486)	(0.0252)

Note.— The contributions of the covariates to the composition and wage structure effects are computed using the coefficients estimated with the methodology of Firpo et al., 2009. See text for details. *Other covariates contributing to both effects but not shown here are marital and region of residence dummy indicators. The contributions of education, experience, occupation, and birth countries represent the sum the contributions of each component (occupation and birthplace dummies, four educational attainment categories, and a quadratic in potential experience. Males and females are pooled together to save space as results are very similar for both.

Table 4: Returns to years of education and experience

	Males			Females		
	Non-Can. Immig. from CAN	Canadians	Direct Immig.	Non-Can. Immig. from CAN	Canadians	Direct Immig.
years edu.	0.103***	0.103***	0.103***	0.134***	0.134***	0.134***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
experience	0.024***	0.024***	0.024***	0.018***	0.018***	0.018***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
exp.sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
fb*years edu	-0.040***	-0.035***	-0.062***	-0.030	-0.037***	-0.094***
	(0.010)	(0.009)	(0.001)	(0.018)	(0.014)	(0.002)
fb*exp.	-0.027***	0.024**	-0.028***	0.004	0.015	-0.036***
	(0.010)	(0.011)	(0.002)	(0.027)	(0.012)	(0.002)
fb*exp.sq.	0.000*	-0.001*	0.000***	-0.000	-0.000	0.001***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Constant	4.752***	4.752***	5.574***	4.882***	4.301***	5.758***
	(0.009)	(0.009)	(0.031)	(0.292)	(0.010)	(0.041)
Observations	2,292,254	2,292,733	2,332,348	1,863,569	1,863,939	1,884,004
R-squared	0.173	0.173	0.179	0.194	0.193	0.196

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: The estimations control for immigrant status and region of origin for immigrants, region, married status and English fluency.
All groups are compared with native men or native women.
Source: US Census 2000.

Table 5: Returns to years of education and experience

	Males			Females		
	Non-Can. Immig. from CAN	Canadians	Direct Immig.	Non-Can. Immig. from CAN	Canadians	Direct Immig.
hline						
scollege	0.210***	0.210***	0.210***	0.210***	0.210***	0.210***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
BA	0.503***	0.503***	0.503***	0.503***	0.503***	0.503***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Post-grad.	0.641***	0.641***	0.641***	0.641***	0.641***	0.641***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
exp	0.031***	0.031***	0.031***	0.031***	0.031***	0.031***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
exp.sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
fb*scollege	-0.046	0.072	-0.070***	-0.046	0.072	-0.070***
	(0.110)	(0.065)	(0.013)	(0.110)	(0.065)	(0.013)
fb*BA	0.033	0.041	-0.037***	0.033	0.041	-0.037***
	(0.101)	(0.065)	(0.014)	(0.101)	(0.065)	(0.014)
fb*Post-grad.	-0.001	-0.065	-0.099***	-0.001	-0.065	-0.099***
	(0.100)	(0.068)	(0.015)	(0.100)	(0.068)	(0.015)
fb*exp	-0.028***	0.019*	-0.028***	-0.028***	0.019*	-0.028***
	(0.010)	(0.011)	(0.002)	(0.010)	(0.011)	(0.002)
fb*exp.sq.	0.000**	-0.000	0.000***	0.000**	-0.000	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	6.171***	5.729***	5.709***	6.171***	5.729***	5.709***
	(0.158)	(0.008)	(0.007)	(0.158)	(0.008)	(0.007)
Observations	2,292,254	2,292,733	2,326,759	2,292,254	2,292,733	2,326,759
R-squared	0.181	0.181	0.188	0.181	0.181	0.188

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: The estimations control for immigrant status and region of origin for immigrants, region, married status and English fluency.
All groups are compared with native men or native women.
Source: US Census 2000

Table 6A: Returns to Canadian years of education

	males	females
years edu.	0.103***	0.134***
	(0.000)	(0.000)
exp.	0.024***	0.018***
	(0.000)	(0.000)
exp.sq.	-0.000***	-0.000***
	(0.000)	(0.000)
fb*years edu.	-0.040***	-0.031
	(0.010)	(0.019)
CAN years edu.	0.005	0.013
	(0.016)	(0.025)
fb*exp.	-0.024*	0.012
	(0.013)	(0.032)
fb*exp.sq.	0.000	-0.001
	(0.000)	(0.001)
Constant	4.752***	4.721***
	(0.009)	(0.420)
Observations	2,292,254	1,863,569
R-squared	0.173	0.194

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: The estimations control for region of origin, region, married status.
The Canadian education variables are the interaction between the education variables and the share of a age-gender-origin immigrant group who arrived in Canada before age 20 as measured in the 1996 Census.
See text for more details.
Source: US Census 2000. Canadian 1996 Census.

Table 6B: Returns to Canadian educational degreess

scollege	0.210***	0.251***
	(0.001)	(0.001)
BA	0.503***	0.603***
	(0.001)	(0.001)
Post-grad.	0.641***	0.802***
	(0.002)	(0.002)
experience	0.031***	0.025***
	(0.000)	(0.000)
exp.sq.	-0.000***	-0.000***
	(0.000)	(0.000)
fb*scollege	-0.047	0.010
	(0.111)	(0.135)
fb*BA	0.049	0.034
	(0.135)	(0.312)
fb*Post-grad.	0.016	-0.049
	(0.123)	(0.230)
CAN*BA	-0.043	0.250
	(0.268)	(0.534)
CAN*Post-grad.	-0.053	0.390
	(0.226)	(0.502)
fb*exp.	-0.029***	0.018
	(0.011)	(0.042)
fb*exp.sq.	0.000**	-0.001
	(0.000)	(0.001)
Constant	5.730***	5.576***
	(0.008)	(0.326)
Observations	2,292,254	1,863,569
R-squared	0.181	0.206

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: The estimations control for region of origin, region, married status.
The Canadian education variables are the interaction between the education variables and the share of a age-gender-origin immigrant group who arrived in Canada before age 20 as measured in the 1996 Census.
See text for more details.
Source: US Census 2000. Canadian 1996 Census.

Table 7. Migration Rates from Canada to the United States
Sources: 2000 U.S. Census and 2001 Canadian Census

Panel A: Males

	B.A. Degree		Post-Graduate Degree	
Age Group	Immigrants in Canada	Native-Born Canadians	Immigrants in Canada	Native-Born Canadians
25-29	0.063	0.034	0.088	0.061
30-39	0.045	0.027	0.119	0.05
40-49	0.023	0.009	0.068	0.016
50-64	0.013	0.005	0.013	0.005

Panel B: Females

	B.A. Degree		Post-Graduate Degree	
Age Group	Immigrants in Canada	Native-Born Canadians	Immigrants in Canada	Native-Born Canadians
25-29	0.038	0.023	0.09	0.038
30-39	0.028	0.015	0.059	0.021
40-49	0.019	0.004	0.02	0.007
50-64	0.004	0.002	0.006	0.002

Notes. Rates are computed by using the number of immigrants in the U.S. who entered from Canada over the previous five years and dividing by the relevant population in Canada five years before.

Table 8
Migrating and US-Canada Occupation Wage Differentials: Elasticity Estimates
2000 US Census and 2001 Canadian Census

Panel A: Individuals Aged 25-64	Males		Females	
	Immigrants	Native-Born Canadians	Immigrants	Native-Born Canadians
	[1]	[2]	[3]	[4]
US-Canada Wage Ratio	6.44	6.91	1.95	1.34
in 1-digit Occupations	(2.27)	(2.21)	(1.83)	(2.03)
N	34823	136983	29904	121665
Panel B: Individuals Aged 25-44				
	[1]	[2]	[3]	[4]
US-Canada Wage Ratio	6.59	6.90	2.16	1.59
in 1-digit Occupations	(2.40)	(2.20)	(2.15)	(2.30)
N	22166	113260	20420	95459

Notes. Samples are drawn from the IPUMS-International and include employed individuals who lived in Canada in 1995 and who either stayed or left for the US. The occupation wage ratio represents the monthly earnings by one-digit occupation in the US relative to Canada, and it is computed using full-time/full-year workers in both countries. Standard errors are clustered at the one-digit occupation level.

Table A1 : Selected Means Recent Immigrants and Natives in the US

	Immig from Canada		Immig from	Native-born
	CDN born	Non-CDN born	other countries	
% Males	59.2	64.7	63.0	52.7
Age	35.6	38.8	35.4	43.4
Years of Edu	14.8	15.4	12.1	13.2
H.S. or less	11.1	10.5	49.4	38.6
SomeCollege	25.2	16.5	12.9	32.3
B.A.	39.1	34.1	19.3	18.8
Post-grad	24.6	38.9	18.4	10.4
% Speaking English well	99.3	96.9	54.5	99.5
% Working full-time	88.8	91.2	85.7	85.3
Weekly earnings	1255.5	1270.9	684.9	836.1
Observations	5,573	2,517	198,647	12,539,741
	123,684	57,774	4,360,269	248,366,444

Source: US Census 2000.

Table A2: Selected Means Recent Immigrants and Natives in the US

	Immig from Canada		Immig from	Native-born
	CDN born	Non-CDN born	other countries	
% Males	60.0	63.6	65.2	51.4
Age	36.2	37.7	35.0	44.1
Years of Edu	15.3	15.9	14.1	14.0
H.S. or less	6.5	3.5	22.9	19.5
SomeCollege	17.1	11.6	12.6	35.1
B.A.	45.4	41.7	34.7	29.1
Post-grad	30.9	43.1	29.9	16.3
% Speaking English well	99.7	97.1	64.7	99.6
% Working full-time	86.5	90.0	84.2	84.5
Weekly earnings	1525.2	1657.7	875.4	1074.5
Observations	2,649	1,132	61,867	26,233,145
	304,283	134,421	9,072,882	2,876,490,297

Source: ACS 2003-2013.