The Effects of a Change in the Point System on Immigration: Evidence from the 2001 Quebec Reform*

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Abstract

In 2001, Quebec changed its point system, a system that selects immigrants based on some observable characteristics. The explicit objective was to increase the number of French-speaking immigrants, with no deterioration in overall labor market performance. To achieve this, points for French and education (specifically bachelor's degrees) were increased. In parallel, points for a subjective assessment of "adaptability" were decreased. In line with the initial objective, we find more French-speaking immigrants with bachelor's degrees, and no worsening in labor market outcomes after the reform. These results hold in a difference-in-differences and triple differences analysis. This paper shows how point systems can be used to shape the immigrant workforce according to policy goals.

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Most developed countries have chosen, or are actively considering, a point system that selects immigrants based on some characteristics (education, language skills, age, experience, occupation, or motivation). This system has been implemented in Canada, Australia (already accounting for 67 and 63 percent of immigrants to Canada and Australia[1]), New Zealand and the UK. Other countries choose some immigrants based on their skills (the US with the H1B visa, and the EU with the Blue Card program), and are actively considering adopting a more formal point system.[2] A major advantage of a point system over other immigration policies, such as family reunification or refugees, is that the points can be changed by governments to shape immigration depending on their economic, political, or cultural needs. A point system thus provides a useful policy lever to shape immigration.

Skeptics argue that tweaking the point system will not affect the composition of immigration: more fundamental forces, such as returns to skills and geographic proximity, dominate the nuances of selection systems (Jasso and Rosenzweig, 2008). For example, if Canada and Australia had the same point system, it is unlikely that they will have the same immigration, considering the different neighboring countries. Skeptics further argue that changes in points for observables will not affect unobservables, such as motivation or ability, and the integration or economic performance of immigrants (Borjas, 1991).

Considering the wide use of the point system despite these criticisms, it is vital to know whether changing the points can affect the immigrant's composition and performance. Yet, empirically, it is very difficult to answer this question. Comparing countries with different point systems is unlikely to deliver the causal impact of selection systems since countries differ on so many levels, such as the returns to skills and geographic proximity of host and source countries. Immigrants to different countries might be systematically different for reason other than a difference in the point system (Borjas, 1991; Antecol, Cobb-Clark and Trejo 2003). Within-country analyses hold more promise since factors such as geography and history are held constant (Green and Green 1995). However, when the points change, they often do so at a national level (Beach, Worswick and Green, 2011). The comparison of immigrants selected before and after changes may be confounded by business cycle or cohort effects: more recent immigrants may perform worse simply because of deteriorating macroeconomic conditions and fewer years to integrate, not because of a different point system. A "before/after" comparison is unlikely to deliver the causal impact of a change in the point system.

This paper is the first to answer these important questions using a large change in the point system that occurred in only one of the ten provinces of Canada, which allows us to use a difference-in-differences and triple difference analysis. In 2001, a new immigration policy was implemented in Quebec (subsequently QC): points for education (specifically to

[1] Citizenship and Immigration Canada (CIC) 2013; Australian Bureau of Statistics 2013.

[2] In June 2013, the US Senate voted for a bill proposing a merit-based point system: "The Border Security, Economic Opportunity, and Immigration Modernization Act", S. 744. The bill still has to be considered by the House of Representatives.

bachelor's degree) and the French language increased, while points for a subjective assessment of the immigrants' "adaptability", i.e., personal qualities and motivation to integrate in society, decreased.

Relative to the Rest of Canada (subsequently ROC), in which there was no change in the point system over the same period, we find that immigrants selected in QC after the reform are 6 percentage points more likely to hold a bachelor's degree than immigrants selected before, and 4 percentage points more likely to speak French only (as opposed to speaking both French and English). This indicates that immigrants' characteristics respond to changes in the point system. The point system thus represents an effective policy lever to shape immigration.

Despite being more educated and speaking more the local language, immigrants did not perform better on the labor market after the reform (in terms of employment and earnings). This is unsurprising considering the very low returns to foreign bachelor's degrees, and to speaking French only on the QC job market. Additionally, the sharp drop in points for "adaptability" did not cause a worse economic performance of immigrants. In any case, labor market performance was not the primary goal of the reform. The stated objective of the reform was to increase the number of French-speaking immigrants (for cultural and political reasons) with no deterioration in labor market outcomes. Relative to this goal, the reform was a success. These results show that the points can be changed to affect the immigration composition.

A common concern when comparing QC to ROC is that QC has very different cultural, political and economic conditions from ROC. In other words, QC may be on different trends from ROC. To address this criticism, we employ a triple differences methodology. To find additional control groups within QC, we use other immigrants who would fall short of the passing grade based on their observable characteristics but who immigrated through other programs such as family-reunification or refugees. These additional control groups reside in QC, and are therefore influenced by the same cultural, political and economic conditions as our treatment group. But they did not go through the point system, and should thus be unaffected by the 2001 QC reform. Using these additional control groups, we find no support for differing trends between QC and ROC over the period, and our triple differences confirm our findings.

This paper is the first to use a change in points in a sub-unit of a country to analyze its impacts on immigrants in a difference-and-differences analysis. The existing literature on the point system has compared immigrants coming through this system, to immigrants entering through other systems, such as family-reunification immigrants and refugees, in Canada and Australia (Borjas 1993; Miller 1999; Cobb-Clark 2000, 2003; Abott and Beach 2011; Aydemir 2011) or to immigrants coming before the creation of the points system (Green and Green 1995). Despite the importance of this literature, it does not provide an answer to the question we ask, i.e., will a change in the point system affect the immigrants' composition.

To answer this particular question, other papers more directly related to ours have looked at national changes in points (Beach et al., 2011), or cross country differences between Canada, Australia and the US (Borjas, 1991; Antecol et al., 2003). Our paper is the first to use a within country difference-in-differences and triple differences methodology, which controls for cohort, business cycle, cultural, political, and economic effects.

The results of our paper are important for countries already implementing the point system, such as Canada, Australia, the UK and New Zealand, who have very different point systems, which frequently change based on limited evidence. This paper provides evidence on how the point system can be used to fulfill policy goals and shape the immigration workforce. In this case, more points on French attracted more French speaking immigrants. More points on bachelor's degrees attracted more bachelor's degrees' holders. In this particular case, this was not accompanied with better labor market outcomes since the return to bachelors' degrees are low on the QC job market. Assigning more points to characteristics that fetch a higher return (such as bilingualism, Master and Ph.D. in the case of QC) may improve labor market outcomes. Another important lesson is that assigning less points on adaptability was not accompanied with worse labor market outcomes. This casts doubt on the ability of qualitative interviews to screen for unobservables.

This paper is also important for countries considering the point system, such as the US and the EU, who primarily use family reunification and refugee status instead, and are faced with large illegal immigration flows. Our paper shows how a point system can be used to pick immigrants with the desired characteristics (in QC, more points for bachelors' degrees meant more bachelor's degree holders; more points for French meant more French-speaking immigrants). A point system could be used in the US to pick immigrants with the desired characteristics. Hanson (2006) shows that many illegal immigrants from Mexico to the US are in the middle, not the bottom, of the skill distribution. For example, 30 percent of illegal immigrants from Mexico have more than 12 years of education. Thus, a point system selecting these individuals will allow these immigrants to work legally and pay taxes, and by the same token, reduce the pressure on the border.

The paper proceeds as follows: Section 1 provides background on the point system and on the related impact evaluation literature. Section 2 presents our identification strategy. Section 3 describes the data, and Section 4 the methodology used. Section 5 presents the results. Section 6 provides a discussion of these results, and Section 7 concludes.

1 The point system

1.1 Description

In 1967, Canada became the first country in the world to initiate a point system. Immigrants to Canada are classified into three categories: family class, humanitarian or refugee class,

and the economic class. Only the last class is assessed through the point system. Figure 1 shows the number of Canadian immigrants by category from 1999 till 2003. Since 1999, more than 55 percent of immigrants are admitted under the economic class each year[3] (CIC 2007).

The point system is a color-blind system that allocates a number of points to some observable skills of immigrants. The main categories are education, training, experience, occupational sector in demand, arranged employment, regional and labor markets needs, age, language abilities, adaptability, and characteristics of the spouse and children if applicable (McWhinney 1998).[4] If the applicant garners more points than a specified threshold[5], he/she is admitted into the country.

1.2 Existing literature

To evaluate how a change in points affect the immigrant's composition, the existing literature has followed three strategies. First, some studies have used time variation in the point system (Beach et al., 2011). There is considerable time variation in the points system. The Canadian government alternated between "labor market specific" models, "human capital" models and a combination of both (see O'Shea (2009) for a description of the changes that occurred in the Federal Skilled Workers grids from 1967 until 2008). The "labor market specific" models assign points based on current market needs, and are short-term in nature. The "human capital" models are more long-term, and assign points on characteristics thought to help immigrants integrate in Canada, such as education, age, language and experience. These large and frequent changes all serve to illustrate that there is no consensus on how the points should be set, and how they affect the immigrants' composition. On an econometric level, one issue with comparing individuals who immigrated before and after changes is that their performance on the labor market may be affected not only by changes in the points system, but also by cohort effects or coincidental macroeconomic shocks.

[3]Note that the economic class comprises different subcategories such as skilled worker class, business class and investor class. In this paper, we study the skilled worker point system. 89 percent of the economic class' principle applicants apply under the skilled workers program (CIC 2007).

[4]For example, immigrants who applied between 1998 and 2002 were given up to 16 points for their education (16 points for a second- or third-level university degree), up to 18 points depending on the amount of training required for the occupation (18 points for an occupation requiring a degree beyond the bachelor's level), up to 8 points for experience (8 points for 4 years experience in an occupation requiring at least 4 years of training), up to 10 points for occupational demand (such occupations being determined by taking into account labor market demand on both an area and national basis), up to 10 points for arranged employment (or if the person is qualified for and is prepared to engage in employment in a designated occupation), up to 10 points for "regional demographic needs, labor market considerations and the ability of the national infrastructure to accommodate population growth", up to 10 points for age (21 to 44 years old granting 10 points, 16 and younger, or 49 and older granting zero), up to 15 points for language (ability to speak, read and write either English or French), and up to 10 points for adaptability ("on the basis of an interview with the person to reflect the personal suitability of the person and his dependants to become successfully established in Canada based on the person's adaptability, motivation, initiative, resourcefulness and other similar qualities", Federal Skilled Workers Grids 1998-2002).

[5]The passing grade was 70 out of 100 between 1998 and 2002.

A second strand of the literature has used cross-country comparisons. There are wide differences between point systems implemented in different countries. For example, Australia assigns 46 percent of the passing grade for applicants aged between 25 and 32 years old, whereas Canada assigns only 15 percent for 21-44 years old. Australia assigns 31 percent of the passing grade for Ph.D. and 23 percent for master and bachelor, whereas Canada assigns 37 percent for Ph.D. and 34 percent for master and bachelor's degrees. In the US, there is no formal point system, but 16 percent of total immigration goes through an employment-based program for skilled workers. This program selects holders of advanced degrees, people with exceptional skills, or immigrants with employers who demonstrate that no American could fill the job. There are no points for language skills, age, experience, or motivation. Understanding the impact of these wide differences is critical. Borjas (1993) finds that American immigrants to Canada (who went through the point system) perform worse than Canadian immigrants to the US (who did not go through the point system). When comparing Canada, Australia and the US, Borjas (1991) and Antecol et al. (2003) find that immigrants to Australia perform better than immigrants to Canada or the US. However, it is difficult to attribute these findings to the point system, since geographic, economic and political conditions differ greatly across countries.

Finally, a third strand of the literature has compared immigrants who went through the point system to immigrants coming before the introduction of the points system (Green and Green, 1995), or to immigrants who immigrated through other systems, e.g., family reunification and refugees, in Canada and Australia (Borjas 1993; DeSilva 1997; Barett 1998; Miller 1999; Cobb-Clark 2000, 2003; Wanner 2003; Sweetman and Warman 2012). Overall, a consensus emerged from this literature that immigrants selected through the point system are more educated than others. The effects on labor market outcomes are more ambiguous. One set of papers argues that the returns to education of the selected immigrants are positive (Beach et al 2011), and that the difference in earnings with other immigrants persist over time (Abott and Beach 2011; Sweetman and Warman 2012). Other papers find that the returns to education are very small (Aydemir 2011) and that the earnings between the different classes of immigrants converge rapidly (De Silva 1997; Wanner 2003). These negative findings may not be evidence that the point system is inappropriate, rather that the points are set on the inappropriate categories. In any case, this important literature does not answer the particular question we ask, i.e., does a change in points affect the immigration composition.

To answer our question of interest, the ideal experiment would assign different point systems to randomized group of immigrants, and follow their labor market success. In the absence of such an experiment (which is probably unethical), we use the following identification strategy.

2 Identification Strategy

2.1 The 2001 QC reform

In this paper, we exploit the fact that QC is the only province in Canada which can set its own point system.[6] In 2001, QC dramatically changed its point system, while ROC did not. Our identification strategy is to compare the characteristics and labor market performance of immigrants who immigrated to QC before and after 2001, relative to those immigrating to ROC before and after 2001. The reform, which we describe in greater detail below, changed points for three categories: education, language, and "adaptability".

Figure 2 shows that the points for education increased from 25 to 32 percent (as a proportion of the passing grade[7]) in QC in 2001. The reform specifically focused on bachelor's degrees. Out of the 6 modifications to the points on education, 5 concerned bachelor's degrees (or other degrees at the bachelor level, e.g., postsecondary 3 years, a second university specialty of 1 or 2 years, which can be a second bachelor). Only one modification awarded one more point (out of 60) to Master students. No changes were made to Ph.D. or Medical degree. Moreover, a new section on spouse's education was added in the auxiliary Grille d'employabilite et de Mobilite Professionnelle that granted extra points only to a bachelor education. No extra points were granted to spouses with a Master, Ph.D., or MD. If the point system is effective, immigrants should be more educated, in particular have more bachelor's degrees after the implementation of this reform.

Figure 3 shows that points for the French language increased in 2001 in QC by 5 percentage points, and did not change in ROC, as either a first or second language (ROC does not make a distinction between the two official languages, French and English).

Finally, Figure 4 shows that the points for "adaptability" decreased in QC in 2001 by 17 percentage points, but stayed constant in ROC. The "adaptability" category consists in a subjective assessment of the ability of an immigrant to successfully integrate into the QC society. Adaptability points are given based on personal qualities, motivation, knowledge of QC, visits to QC, and a connection with a resident in QC. In 2001, there was a decrease in the first two sub-categories only: personal qualities (23 to 10 percent), and motivation (8 to 3 percent). Appendix 1 details all the criteria used to evaluate the immigrants' personal qualities and motivation.

In summary, the 2001 QC reform made three changes: more points for education and French knowledge, and fewer for adaptability. There were no significant changes in other

[6] In 1991, the Canada-Quebec agreement granted QC the exclusive right to select its immigrants and design its own point system based essentially on the same major characteristics as the ones used in ROC (Kostov 2008).

[7] We report the changes in the point system as a proportion of the passing grade to account for the changes in the passing grade. For single applicants in Quebec, the passing grade changed from 65 (out of 115 total points available) in 1996 to 60 (out of 106) in 2001. For married applicants, it changed from 70 (out of 132) to 68 (out of 123).

categories, as shown in Table 1.

As explained above, there were no significant changes to the point system in ROC in 2001. In 2002, ROC implemented a reform, called the Immigration and Refugee Act (IRPA). For the purpose of this paper, we will ignore this change since only 8 percent of the federal skilled workers immigrants who arrived to Canada in 2003 were evaluated under the IRPA (CIC 2010).

If the point system works, this reform may attract more educated, French-speaking, less "adaptable" immigrants. It is unclear how these changes will translate in labor market outcomes. More educated immigrants may find more work, or not, depending on the actual and perceived value of their foreign degrees. Speaking French may help integrate, or not, depending on employers' demand for French, English, and bilingual language skills. Being less "adaptable" may hurt integration, or not, depending on the quality of the subjective assessment. Our empirical analysis below will look at the impact of the reform on immigrants' education and language skills, as well as their labor market outcomes.

2.2 Exogeneity of the reform

A concern for our analysis is that the reform may have been endogenous to labor market conditions of the time. For example, it could be that QC's labor market was on a worse trend than in ROC, and that this prompted the QC government to enact this reform. If immigrants entering QC after 2001 are found to do worse than earlier immigrants, it might be due to these changing labor market conditions, not to the point system. In this case, one would be tempted to conclude that changing points in this manner was detrimental to immigrants, when in fact, the reform may have been beneficial.

In this particular case, the 2001 QC reform was not designed to counter a worsening economic trend. This reform was designed to achieve the primary objective of the new immigration policy decided in 2001: "increase the French-speaking immigration, while maintaining the socioeconomic requirements (which favor a rapid integration to the job market)"[8]. This new immigration policy was decided by the governing party, the Parti Québécois, whose two first priorities are independence from Canada and protection of the French language (programme du Parti Québécois, 2001). The control of immigration was seen as a key issue to realize these goals. Statistical analysis of the results from the 1995 QC independence referendum (50.6 percent said no to independence) revealed that 60 percent of French speakers voted for independence, while only 5 percent of non Francophones did (Drouilly 1996). In 1995, Jacques Parizeau, the Premier of Quebec, stated that the next referendum would be successful with only a few percentage more of French speakers (Cardinal 2005). The underlying motivations for the 2001 reform were thus more political and cultural than economic.

[8] In French: "hausser l'immigration francophone, tout en maintenant les exigences socio-économiques (qui favorisent l'intégration rapide au marché du travail)", Plan Stratégique 2001-2004, Ministère des Relations avec les Citoyens et de l'Immigration.

In this sense, we consider this reform as exogenous from labor market conditions of the time.

3 Data

We use the confidential microdata files of the 2006 Canadian Census to identify individuals who immigrated to Canada between 1999 and 2003. The reform was implemented in September 2001. Immigrants who landed in QC after 2001 went through the new point system, and form our treatment group. Immigrants who landed in QC in 2000 (or in ROC) did not go through this new point system.[9]

The Census does not provide information on whether the immigrant went through the point system, or immigrated through the family reunion or refugee programs. As noted above, most of the immigrants to Canada are selected through the point system (more than 55 percent each year, CIC 2007). To further ensure that the majority of our sample immigrated through the point system, we restrict the sample in three ways. First, we restrict our sample to those with at least a high school degree, since the QC point system excludes others. Second, we keep only those who can conduct a conversation in at least one of the official languages, since those who cannot are unlikely to go through the point system. Third, we restrict the sample to household heads[10], since non-household heads are likely to immigrate as a dependent, or through family reunification. In our triple differences (as will be explained in greater detail below), we will relax these three restrictions one by one to create control groups of immigrants who have not gone through the point system.

The 2006 census reports education and language abilities in 2006, not at the time of immigration. It is possible that education in 2006 differs from education at the time of immigration, if immigrants acquired additional education in Canada. Since we are interested in the effect of a change in the point system on immigrants' characteristics at the time of immigration, we further restrict our sample to those who earned their highest degree outside Canada and those aged between 25 and 45 at the time of immigration since individuals are most likely to have completed their formal schooling at that age. We present results with and without this restriction.

The Census does not specify the province of landing. It is possible that the province of residence observed in the 2006 census differs from the province of landing at immigration. However, Table 2 shows that in our sample, the percentage of immigrants who moved in and out of QC in the last year and 5 years is negligible. In addition, Okonny-Myers (2010) uses the longitudinal Immigration Database (IMDB) to show that 90 percent of the skilled workers immigrating to QC in 2000 were still in QC in 2006.

[9] It is unclear whether immigrants who landed in 2001 went through the new point system, and we will thus analyze them separately.

[10] In the data, we use the concept of "main household maintainer", defined in the census as the person that contributes the most towards shelter expenses.

After applying these restrictions, the sample consists of 35,327 observations. Table 3 reports descriptive statistics for our sample, in QC and ROC. There are significant differences in the education level of both groups of immigrants: in QC, immigrants have more diplomas and certificates below university[11] (28 versus 20 percent), but fewer bachelor (33 versus 37 percent) and Master degrees (13 versus 20 percent). The proportions of Ph.D.s and medical degrees[12] is similar in QC and ROC. Language skills also differ. In QC, 25 percent speak French only[13], 54 percent are bilingual, and 21 percent speak English only, while in ROC, the overwhelming majority (94 percent) speaks English only. Finally, in QC, immigrants are slightly less employed (76 versus 87 percent). The question we try to answer in the next section is whether the QC 2001 reform changed any of those characteristics and labor market outcomes.

4 Methodology

Our empirical analysis exploits the fact that the selection process changed in QC in 2001, while that of ROC did not. To determine the effects of the change in points on immigrants' skills and labor market outcomes, we perform the following difference-in-differences analysis:

$$y_i = PROV_i + YEAR_i + \gamma_0 QC*1999_i + \gamma_1 QC*2001_i + \gamma_2 QC*2002_i + \gamma_3 QC*2003_i + \theta X_i + u_i \quad (1)$$

where i corresponds to individual i. y_i is the variable of interest (education, language, employment, or earnings), measured in 2006. $PROV_i$ are a set of provincial fixed effects. For example, it includes QC_i, a dichotomous variable equal to 1 if individual i resides in QC, 0 otherwise. $YEAR_i$ are a set of dichotomous variables for the year of immigration of immigrant i between 1999 and 2003. For example, 1999_i is a dichotomous variable equal to 1 for an individual immigrating in 1999, 0 otherwise.

We further include all interactions of QC_i and year of immigration dummies, except for $QC*2000_i$, the reference period before the reform. $QC*2001_i$ is an interaction term between QC_i and 2001_i, and isolates in the data those immigrants who reside in QC and immigrated in 2001. The coefficient γ_1 of $QC*2001_i$ thus looks at the impact of the reform in 2001 when the reform was partially implemented (i.e., after September of that year).

The coefficients of interest are γ_2 and γ_3. They measure the changes in characteristics of

[11] Diploma and registered apprenticeship certificate; college, Collège d'enseignement général et professionnel (Cegep)or other non-university certificate or diploma from a program of 3 months to less than 1 year; college, Cegep or other non-university certificate or diploma from a program of 1 year to 2 years; college, Cegep or other non-university certificate or diploma from a program of more than 2 years; university certificate or diploma below bachelor level.

[12] Medicine, dentistry, veterinary medicine or optometry.

[13] French only is a dichotomous variable equal to 1 if the immigrant is able to conduct a conversation in French but not in English.

immigrants to QC after the reform, relative to the same changes in ROC. The strength of this difference-in-differences methodology is that it controls for any provincial and time fixed effects. In other words, the analysis controls for the fact that QC is systematically different from ROC (by comparing immigrants within QC before and after the reform), and for the fact that later cohorts have less time to integrate or face different macroeconomic conditions (by comparing the same cohort of immigrants in different places).

The remaining identification assumption is the common time effects assumption: for our results to be valid, QC and ROC must be on similar trends. In other words, in the absence of the reform, QC would have evolved the same way as ROC. We address this concern in three ways. First, we look at pre-reform trends visible in $QC * 1999_i$. No changes were made to the point system in QC and ROC in 1999. We thus expect γ_0 to be not significantly different form zero. Second, we include as control variables, X_i, provincial macroeconomic variables (provincial unemployment rate and provincial average earnings) to directly control for the fact that QC may have been on a different time trend than ROC. Third, we provide triple differences estimates, described in greater detail below.

In all the regressions, we cluster the standard errors by province, the level at which the reform took place (Moulton 1990), to deal with the within cluster serial correlation problem that might occur in the difference-in-differences estimation (Bertrand, Duflo and Mullainathan 2004). However, Cameron, Gelabach and Miller (2008) show that using clustering of that sort leads to over-rejection when the number of clusters is small. Using Monte Carlo simulations with 10 clusters (equal to the number of provinces used in our analysis) and different error structures and cluster sizes, they show that the OLS standard errors reject the null at a rate of 10.6 percent to 77 percent. Even after correcting for clustering, the cluster-robust standard errors reject the null 8.2 percent to 18.3 percent. We follow Cameron et al (2008), and use the wild cluster bootstrap. With 10 clusters, they show that this technique rejects the null at a rate of 4.5 percent to 6.4 percent, not significantly different from 5 percent. In our analysis, we use the 6-point weight distribution proposed by Webb (2013).

5 Results

5.1 Immigrants' characteristics

We start by considering the effect of the reform on education and French language. Figure 5 shows the percentage of people with a university degree who immigrated to QC between 1999 and 2003. While there were no significant changes to Master, Ph.D. and medical degrees, the proportion of immigrants with a bachelor's degree increased in 2001 and even more so in 2002. Figure 6 shows the share of immigrants to QC and ROC holding a bachelor's degree. In 1999, 27 percent of QC immigrants held a bachelor's degree, compared to 34 percent in ROC. The gap widened in 2000, before closing down after 2001. In other words, QC was

strongly catching up to ROC after 2001.

These results are confirmed in Table 4. In Column (1), the dependent variable is a dichotomous variable equal to 1 if the highest degree attained is high school, 0 otherwise. We only report the coefficients of the interaction between QC_i and the year of immigration dummies. γ_0, the coefficient of $QC * 1999_i$, shows that QC and ROC were on a similar trend before the reform. γ_1, the coefficient of $QC * 2001_i$, shows no significant effect after a partial implementation of the reform in 2001. γ_2 and γ_3, the coefficients of $QC * 2002_i$ and $QC * 2003_i$, show a negative and significant effect of the reform: compared to immigrants who landed in 2000, the reference period, immigrants who landed in QC in 2002 are 6 percentage points less likely to be high school graduates.

Columns (2) to (6) look at other educational degrees: the dependent variables are dichotomous variables equal to 1 if the highest degree attained is diplomas and certificates below university, bachelor's degrees, Master, Ph.D., or a medical degree, respectively. γ_2 and γ_3, the coefficients of $QC * 2002_i$ and $QC * 2003_i$, are significantly positive for bachelor's degree only: there are 6 percentage points more bachelor's degrees in QC in 2002.

Concerning language skills, Figure 7 shows that the proportion of QC immigrants speaking only French increased in 2001 and even more so in 2002. Column (7) of Table confirm this result: immigrants who landed in 2002 were 4 percentage points more likely to speak only French, and 5 percentage points less likely to speak only English. The difference remains significant in 2003. There is no change for immigrants who speak both French and English.

Throughout Table 4, all coefficients pertaining to the 1999 period are not significantly different from zero, confirming that QC and ROC were on similar trends before the reform. All coefficients pertaining to the 2001 period are either not significantly different from zero, or smaller than those for 2002. This is expected since the reform was implemented only after September 2001.

Overall, these results show that the point system significantly affected the composition of immigrants: immigrants were more educated and spoke more French following an increase in points for education and French. We next ask whether this translated into better labor market outcomes for immigrants.

5.2 Labor market outcomes

After studying the effect of the 2001 change in the point system on immigrants' education and language skills, we now turn to their labor market performance. Figure 8 shows employment rates of immigrants across time. Despite immigrants being more educated and speaking more French, the official language of QC, there is no improvement in the employment rate of immigrants who landed after 2002. In fact, the employment rate seems to decrease. This is confirmed in Column (1) of Table 5, which does not show a positive impact of the reform. If anything, the effect is negative in 2002, although the coefficient is not significant for the

year 2003. Figure 9 shows no discernible effect on earnings after 2001 in QC, since the gap between QC and ROC remains the same over time. This is confirmed in Column (2) of Table 5, since the coefficient of $QC * 2002_i$ is not significantly different from zero.

As noted above, our sample only includes immigrants who earned their highest degree outside Canada, since one of our main questions of interest was whether a change in the point system attracted more educated immigrants. This restriction might conceal effects of the point system change if the reform attracted immigrants who decide to pursue their education in Canada. Getting more education in Canada may be associated with better labor market outcomes, if Canadian education is of greater quality, or if Canadian employers discriminate less against immigrants with Canadian degrees. By selecting these immigrants out of our sample, we might underestimate the true effects of the reform.

To address this issue, we replicate our methodology after including in our sample the immigrants who decided to study in Canada (see in appendix 2, Tables A2.1 and A2.2). As was the case in the restricted sample, this unrestricted sample shows that immigrants after 2002 were more educated, spoke more French, and did not have better labor market outcomes. Therefore, our results are not sensitive to our focus on individuals who studied outside of Canada.

Throughout Table 5, the coefficients pertaining to $QC * 1999_i$ are not significant, indicating that QC and ROC were on similar trends before the reform. Nonetheless, it is possible that QC experienced a negative shock precisely in 2001, which would explain all the results. To address this issue, we provide in the next section evidence from a triple differences analysis.

5.3 Triple differences

An issue with the difference-in-differences methodology is that QC may have been on a declining trend relative to ROC. This may explain the stagnating economic performance of immigrants, and mask beneficial effects of the change in points. To address this concern, we consider additional control groups of immigrants to QC who did not go through the point system. In a sense, these groups provide a falsification exercise for our theory, because immigrants not assessed in the point system should not be affected by the QC 2001 reform. If their labor market performance is affected, it must mean that other factors are at play, and confound the estimates of the reform.

We first consider immigrants with no secondary education (aged between 20 and 64 at time of immigration). Those individuals cannot immigrate through the point system since the point system excludes such individuals. We thus define $Assessed_i$, a dichotomous variable equal to 0 for those immigrants without a secondary education, 1 for our sample identified above. We then perform the following triple difference analysis:

$$
\begin{aligned}
y_i \;=\; & PROV_i + YEAR_i + \gamma_0 QC * 1999_i + \gamma_1 QC * 2001_i + \gamma_2 QC * 2002_i + \gamma_3 QC * 2003_i \\
& + \gamma_4 Assessed_i + \gamma_5 QC * Assessed_i + \\
& + \gamma_6 1999 * Assessed_i + \gamma_7 QC * 1999 * Assessed_i \\
& + \gamma_8 2001 * Assessed_i + \gamma_9 QC * 2001 * Assessed_i \\
& + \gamma_{10} 2002 * Assessed_i + \gamma_{11} QC * 2002 * Assessed_i \\
& + \gamma_{12} 2003 * Assessed_i + \gamma_{13} QC * 2003 * Assessed_i \\
& \theta X_i + u_i
\end{aligned}
$$

y_i are labor market outcomes. We cannot look at education as an outcome since the control group of immigrants has no education, by definition. Moreover, the point of the triple difference analysis is to address the issue a potentially deteriorating labor market in QC, thus we focus on labor market outcomes.

The main coefficients of interest are γ_{11} and γ_{13}, the triple differences estimates. For the common time effects assumption to hold, and the validity of the falsification exercise, we need γ_2 and γ_3, i.e., the impact of the reform on the immigrants not exposed to the reform, to be not significantly different from zero. In Table 6, we only report these four coefficients, but all other variables are included. X_i includes the provincial macroeconomic variables used above (provincial unemployment rate and the provincial average earnings).

Columns (1) and (2) of Table 6 present the findings for employment and earnings: γ_2 and γ_3, the coefficients of $QC * 2002_i$ and $QC * 2003_i$, are not significantly different from zero. This indicates that immigrants not going through the point system are not doing worse in QC after 2001. This falsification exercise confirms that it is reasonable to assume that QC and ROC would have been on similar trends had the reform not been implemented. The triple differences coefficients γ_{11} and γ_{13} of $QC * 2002 * Assessed_i$ and $QC * 2003 * Assessed_i$ are not significantly positive, as found above, confirming that the reform had no positive impact on labor market outcomes of immigrants.

In columns (3) and (4), we consider another falsification exercise by looking at another group of immigrants that did not go through the point system: immigrants aged between 45 and 64 at the time of immigration, who have at most a high school degree, and are not able to conduct a conversation in either French or English. This group cannot get the passing grade of the point system. We replicate our triple differences methodology, and find that this group was not affected by the reform, as expected.

In columns (5) and (6), we look at spouses of immigrants who immigrated to Canada at least one year after the household head (20 to 64 years old at immigration). These spouses are most likely sponsored by the household head to immigrate under the family class. As they immigrated one year after the household head, they did not contribute to the points

under the skilled worker program. These spouses are unlikely to have gone through the point system, and thus provide another falsification test. Their performance on the labor market should be unaffected by the 2001 QC reform. Columns (5) and (6) show that this is the case.

Overall, these triple differences results show that QC and ROC were on similar time paths for non-assessed immigrants, and the same is probably true for assessed immigrants. Moreover, these results confirm that the reform had no positive impacts on employment and earnings, despite immigrants being more educated and speaking more French.

6 Discussion

Our results show that immigrants held more bachelor's degrees and spoke more French after the reform, but that this did not translate into better labor market outcomes. Our triple difference estimates show that these results are not driven by a differential trend in QC after the reform, since other categories of immigrants not assessed through the point system did not fare differently in QC after the reform.

An explanation for these findings is that the reform specifically focused on bachelor's degrees, and the returns to holding a foreign bachelor's degree are low. In Table 7, we show the results of a simple OLS regression of labor market outcomes on basic characteristics of immigrants to QC. When they land, employment rates for bachelor's degree holders are 12 percentage points less than for holders of diplomas and certificates below university, the omitted category.[14] The worse performance of bachelor's degree immigrants has already been documented in Godin and Pinsonneault (2004) and Renaud and Cayn (2006). Using QC's administrative data on 1,579 immigrants, they find that the time to first employment is higher for bachelor's degree holders (20 weeks) than for any other education category, including high school graduates (9 weeks). It may be that foreign bachelor's degrees are of worse quality, or that Canadian employers discriminate against foreign bachelor's degree holders.

Another explanation for the lack of success on the job market of these new immigrants is that knowing the French language may not translate into better labor market outcomes. Table 7 shows that the returns to speaking only French are low. In contrast, bilingualism, speaking both French and English, increases the employment probability and earnings in the QC job market. However, the reform did not increase the number of bilingual immigrants, as column (9) of Table 4 shows.

Another explanation may be that the increase in points for education and language had positive effects, but that these positive effects were nullified by the decrease in points for adaptability. However, this explanation is difficult to reconcile with the findings above,

[14] The worse performance of bachelor's degree holders is specific to immigrants. Bachelor's degree holders who were born in QC fare better than high school or certificate holders (as can be seen in Table A3 in the appendix).

namely that the increase in points for education and language did not translate in better labour market outcomes. A more likely explanation is that the drop in points for "adaptability" had no labor market consequences, and that qualitative interviews do not screen accurately for unobservables.

In any case, despite the absence of better labor market outcomes, these results are exactly in line with the intended goal of the reform. As explained above, the primary objective of the reform was to "increase the French-speaking immigration, while maintaining the socioeconomic requirements"[15]. We find more French-speaking immigrants and comparable labor market outcomes.

7 Conclusion

Following a reform in QC in 2001 giving more points for education and French language, we find that immigrants held more bachelor's degrees and spoke more French. Despite low returns to bachelor's degrees and the French language on the QC job market, and an additional decrease in points for adaptability, we find no deterioration in labor market outcomes of immigrants. Thus, from the point of view of the government, whose goal was to increase French-speaking immigrants with no worsening in labor market outcomes, the reform was an unambiguous success.

Our paper is the first to use an intra-national change in points, which allows us to use a difference-in-differences analysis to study the effects of a change in the point system on immigrants' characteristics and labor market outcomes. Moreover, to address the fact that QC and ROC may be culturally and politically different, and thus on different trends, we use a triple differences analysis. This methodology uses additional control groups within QC, i.e., categories of immigrants who could not pass the point system, but who immigrated through other programs.

Our contribution is not only academic. This paper generates important policy recommendations about the point system. One policy recommendation stemming from this study is that to improve labor market performance of immigrants, more points should reward characteristics fetching higher returns in the job market. In the case of QC, such characteristics are advanced university degrees (Master, Ph.D., MD), not bachelor's degrees, and bilingualism, not speaking French only. In 2001, a Master or Ph.D. holder earned only 3 percent more of the passing grade than a bachelor's degree holder. A French speaker earned 30 percent of the passing grade, while an English speaker earned only 10 percent.

This paper is also important for countries considering the point system, such as the US and many European countries. An issue with the US immigration system is that the current system cannot discriminate skilled from unskilled immigrants. Hanson (2006) documents

[15] Plan Stratégique 2001-2004, Ministère des Relations avec les Citoyens et de l'Immigration.

that the size of the skilled group may be large: 30 percent of illegal immigrants from Mexico have more than 12 years of education. Both skilled and unskilled immigrants have to immigrate illegally, thereby applying a strong pressure on the border. Illegal skilled immigrants in the US cannot legally work, pay taxes, and more generally embrace the responsibilities of living in the US. This paper shows how the points in a point system can be set to achieve policy goals. In QC, the political party in power wished more French-speaking immigrants, and was able to do so at no economic costs. In the US, a point system awarding points to those with more than 12 years of education could benefit them, increase tax revenues, decrease the pressure on the border, making it easier to defend.

- Abbott, Michael G., and Charles M. Beach.2011. "*Do admission criteria and economic recessions affect immigrant earnings*?". Montreal: Institute for Research on Public Policy.

- Antecol, Heather, Deborah A. Cobb-Clark, and Stephen J. Trejo. 2003. "Immigration policy and the skills of immigrants to Australia, Canada, and the United States." *Journal of Human Resources* 38, no. 1: 192-218.

- Australia Bureau of Statistics. 2013. *Migration, Australia, 2013-14.* catalogue number 3412.0.

- Aydemir, Abdurrahman. 2011. "Immigrant selection and short-term labor market outcomes by visa category." *Journal of Population Economics* 24, no. 2: 451-475.

- Barrett, Alan. 1998. "The effect of immigrant admission criteria on immigrant labour-market characteristics." *Population Research and Policy Review*17, no. 5: 439-456.

- Beach, Charles M., Christopher Worswick, and Alan G. Green. 2011. "Toward Improving Canada's Skilled Immigration Policy: An Evaluation Approach." *CD Howe Institute*

- Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan. 2004. "How Much Should We Trust Differences-in-Differences Estimates?." *Quarterly Journal of Economics*119, no. 1: 249-275.

- Borjas, George J. 1991. "Immigration and self-selection." In *Immigration, trade, and the labor market*, pp. 29-76. University of Chicago Press.

- Borjas, George J. 1993. "Immigration Policy, National Origin, and Immigrant Skills: A Comparison of Canada and the United States." In *Small Differences That Matter: Labor Markets and Income Maintenance in Canada and the United States*, 21-44. University of Chicago Press.

- Cameron, A. Colin, Jonah B. Gelbach, and Douglas L. Miller. 2008. "Bootstrap-based improvements for inference with clustered errors." *The Review of Economics and Statistics* 90, no. 3: 414-427

- Cardinal, Mario. 2005. *Breaking Point: Quebec, Canada, The 1995 Referendum.* Montreal: Bayard Canada Books.

- Cobb-Clark, Deborah A. 2000. "Do selection criteria make a difference?: visa category and the labour market status of immigrants to Australia." *Economic Record* 76, no. 232: 15-31.

- Cobb-Clark, Deborah A. 2003. "Public policy and the labor market adjustment of new immigrants to Australia." *Journal of Population Economics* 16, no. 4: 655-681.

- Citizenship and Immigration Canada. 2007. *Facts and Figures: Immigration Overview Permanent and Temporary Residents.* Ottawa

- Citizenship and Immigration Canada. 2010. *Evaluation of the Federal Skilled Worker Program.* Ottawa: Research and Evaluation.

- Citizenship and Immigration Canada. 2013. *Facts and Figures: Immigration Overview Permanent and Temporary Residents.* Ottawa
- De Silva, Arnold. 1997. "Earnings of immigrant classes in the early 1980s in Canada: A reexamination." *Canadian Public Policy/Analyse de Politiques*: 179-202.
- Drouilly, Pierre. 1996. Le référendum du 30 octobre 1995 : une analyse des résultats. *L'année politique au Québec. 1995-1996*, Presses de l'Université de Montréal, 1996.
- Godin, Jean-François, and Gérard Pinsonneault. 2004. *L'insertion en emploi des travailleurs admis au Québec en vertu de la grille de sélection de 1996.* Direction de la population et de la recherche, Relations avec les citoyens et immigration Québec.
- Green, Alan G., and David A. Green. 1995. "Canadian immigration policy: The effectiveness of the point system and other instruments." *Canadian Journal of Economics*: 1006-1041.
- Hanson, Gordon H. 2006. "Illegal migration from Mexico to the United States." *Journal of economic literature* 44, no. 4: 869-924.
- Immigration Policy Center. 2013. *Defining "Desirable" Immigrants: What Lies Beneath the Proposed Merit-Based Point System?* Retrieved from http://www.immigration policy.org/just-facts/defining-desirable-immigrants-what-lies-beneath-proposed-merit-based-point-system
- Kostov, Chris. 2008. "Canada-Quebec immigration agreements (1971–1991) and their impact on federalism." *American Review of Canadian Studies* 38, no. 1: 91-103.
- McWhinney, Mike. 1998. "A selection criteria chronology, 1967-1997: Critical changes in definition, the point system and priority processing." *Strategic research and review branch, citizenship and immigration canada.*
- Miller, Paul W. 1999. "Immigration policy and immigrant quality: The Australian point system." *American Economic Review*: 192-197.
- Ministere de l'Immigration et des Communautes Culturelles. 2000. *Plan Strategique 2001-2004.* QC. http://www.midi.gouv.qc.ca/publications/fr/planification/Plan Strategique20012004-Integral.pdf
- Moulton, Brent R. 1990. "An illustration of a pitfall in estimating the effects of aggregate variables on micro units." *The review of Economics and Statistics*: 334-338.
- Okonny-Myers, Ima. *The interprovincial mobility of immigrants in Canada.* Citizenship and Immigration Canada, Citoyenneté et Immigration Canada, Research and Evaluation, 2010.
- O'Shea, Edwina. 2009. "Missing the Point (s): The declining fortunes of Canada's economic immigration program." *Transatlantic Academy Paper Series*: 19.

- Parti Quebecois. 2001. *Programme du Parti Quebecois.* http://www.democratie-nouvelle.qc.ca/wp-content/uploads/2013/01/parti_quebecois-programme_2001.pdf
- Renaud, Jean, and Tristan Cayn. 2006. *Un emploi correspondant à ses compétences?: les travaillleurs sélectionnés et l'accès à un emploi qualifié au Québec.* Ministère de l'immigration et des communautés culturelles,
- Sweetman, Arthur, and Casey Warman. 2012. *The structure of Canada's immigration system and Canadian labour market outcomes.* No. 1292. Queen's Economics Department Working Paper.
- Wanner, Richard A. 2003 "Entry class and the earnings attainment of immigrants to Canada, 1980-1995." *Canadian Public Policy/Analyse de Politiques*: 53-71.
- Webb, Matthew D. 2013. *Reworking wild bootstrap based inference for clustered errors* No. 1315. Queen's Economics Department Working Paper.

Table 1: Changes in the 2001 QC point system

		before 2001	after 2001
Education		25	32
French Language		29	34
Adaptability	Personal Qualities	23	10
	Motivation	8	3
	Knowledge of QC	3	3
	Visit to QC	9	10
	Connection with a resident in QC	5	5
Age		19	21
Training		8	8
Experience		17	19
Employment		23	25
Financial autonomy		1	2

This table lists all the characteristics for which immigration applicants to Quebec are assigned points. Adaptability has 5 subcategories. The maximum share of the passing grade, that each characteristic can provide, is given for the point system used before 2001 and after 2001 in Quebec. The passing grade is the minimum number of points an applicant should get to qualify for immigration

Table 2: Migration into and out of QC during the last 1 and 5 years

(percentage of QC's immigrants)

		Year of landing in Canada					
		1998	1999	2000	2001	2002	2003
Migration into or out of QC	in the last year	2.31	3.06	3.51	4.33	3.55	3.24
	in the last 5 years	11.08	12.23	15.33			

Source: Authors' calculations from the Canadian 2006 Census microdata files. In all our analysis, we use the weights provided in the census to make the sample nationally representative.

Table 3: Descriptive Statistics 1999-2003

	QC	ROC
High school	0.13	0.12
	(0.34)	(0.33)
Diplomas & Certificates	0.28	0.20
	(0.45)	(0.40)
Bachelor	0.33	0.37
	(0.47)	(0.48)
Master	0.13	0.20
	(0.34)	(0.40)
Ph.D.	0.04	0.03
	(0.19)	(0.18)
Medical Degree (MD)	0.08	0.08
	(0.27)	(0.27)
French Only	0.25	0.001
	(0.43)	(0.04)
English Only	0.21	0.94
	(0.41)	(0.23)
French & English	0.54	0.05
	(0.50)	(0.23)
Employment	0.76	0.87
	(0.43)	(0.34)
Log Earnings	9.96	10.28
	(1.05)	(0.97)
Age at immigration	33.19	34.48
	(5.08)	(5.49)
Observations	6092	29235

Mean reported, standard deviation reported in parentheses. High school, Dipl & Cert, Bachelor, Mater, Ph.D. and MD are dichotomous variables equal to 1 if the highest degree earned is a high school, a diploma or certificate below bachelor, a Bachelor's degree, a Master's degree, a Ph.D. degree and a medical degree respectively. French only is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in French but not in English. English only is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in English but not in French. French & English is a dichotomous variable equal to 1 if the immigrant can conduct conversations in both French and English. Employment is a dichotomous variable equal to 1 if the immigrant is employed. Log Earnings is the logarithmic transformation of the earnings of employed immigrants. Age at immigration is the immigrants' age when they first immigrated to Canada.

Table 4: Effect of the 2001 QC reform on immigrants' education and language

Dependent Variable	(1) High School	(2) Dipl & Cert	(3) Bachelor	(4) Master	(5) Ph.D.	(6) MD	(7) French only	(8) English only	(9) Fr & Eng
QC*1999	-0.04	-0.02	0.01	0.02	0.01	0.02	0.004	0.01	-0.02
	(0.29)	(0.57)	(0.36)	(0.2)	(0.37)	(0.48)	(0.29)	(0.24)	(0.26)
QC*2001	-0.05	0.03	0.03	-0.002	-0.01	-0.003	0.03	-0.04	0.01
	(0.23)	(0.29)	(0.47)	(0.82)	(0.41)	(0.3)	(0.04)**	(0.5)	(0.59)
QC*2002	-0.06	-0.003	0.06	0.004	-0.01	0.01	0.04	-0.05	0.01
	(0.03)**	(0.84)	(0.02)**	(0.8)	(0.21)	(0.25)	(0.001)***	(0.02)**	(0.16)
QC*2003	-0.07	-0.002	0.03	0.02	-0.01	0.02	0.03	-0.03	-0.003
	(0.05)*	(0.85)	(0.05)*	(0.6)	(0.52)	(0.54)	(0.03)**	(0.04)**	(0.46)
Observations	35327	35327	35327	35327	35327	35327	35327	35327	35327

All regressions are clustered at the province level. Wild cluster bootstrap p-values are reported in parentheses, ***p<0.01, **p<0.1 0.05, *p<0.1. All regressions include province fixed effects, year fixed effects, provincial unemployment rate and provincial average earnings. High school, Dipl & Cert, Bachelor, Mater, Ph.D. and MD are dichotomous variables equal to 1 if the highest degree earned is a high school, a diploma or certificate below bachelor, a Bachelor's degree, a Master's degree, a Ph.D. degree and a medical degree respectively. French only is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in French but not in English. English only is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in English but not in French. Fr & Eng is a dichotomous variable equal to 1 if the immigrant can conduct conversations in both French and English. QC*1999 isolates immigrants to QC who landed in 1999. It provides a falsification exercise by looking at pre-reform trends. QC*2001, QC*2002 and QC*2003 provide the impact of the reform in 2001, 2002 and 2003. QC*2000 is the reference category

Table 5: Effect of the 2001 QC reform on immigrants' labor market outcomes

	(1)	(2)
Dependent Variable	Employment	Log Earnings
QC*1999	0.02	-0.06
	(0.58)	(0.59)
QC*2001	-0.04	-0.01
	(0.54)	(0.45)
QC*2002	-0.06	-0.06
	(0.07)*	(0.16)
QC*2003	-0.07	-0.02
	(0.17)	(0.48)
Observations	35327	28386

All regressions are clustered at the province level. Wild cluster bootstrap p-values are reported in parentheses, ***p<0.01, **p<0.1 0.05, *p<0.1. All regressions include province fixed effects, year fixed effects, provincial unemployment rate and provincial average earnings. Employment is a dichotomous variable equal to 1 if the immigrant is employed. Log Earnings is the logarithmic transformation of the earnings of employed immigrants. QC*1999 isolates immigrants to Quebec who landed in 1999. It provides a falsification exercise by looking at pre-reform trends. QC*2001, QC*2002 and QC*2003 provide the impact of the reform in 2001, 2002 and 2003. QC*2000 is the reference category

Table 6 : Triple Differences Estimation

	Additional control group for the triple differences estimation (Assessed=0):					
	Immigrants aged between 20 and 64 at time of immigration with no secondary education		Immigrants aged between 45 and 64 at time of immigration holding at most a high school degree no knowledge of French or English		Spouses aged between 20 and 64 at time of immigration who immigrated at least one year after the household head	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	Employment	Log Earnings	Employment	Log Earnings	Employment	Log Earnings
QC*2002	0.004	-0.31	-0.004	0.81	0.03	-0.26
	(0.88)	(0.13)	(0.79)	(0.53)	(0.47)	(0.24)
QC*2003	-0.06	0.09	-0.01	0.15	-0.04	-0.20
	(0.5)	(0.46)	(0.83)	(0.71)	(0.16)	(0.25)
QC*2002*Assessed	-0.07	0.26	-0.07	-0.87	-0.09	0.22
	(0.62)	(0.2)	(0.34)	(0.68)	(0.6)	(0.19)
QC*2003*Assessed	-0.01	-0.11	-0.07	-0.17	-0.03	0.19
	(0.67)	(0.35)	(0.5)	(0.7)	(0.23)	(0.32)
Observations	48272	34187	41067	29596	45101	33286

All regressions are clustered at the province level. Wild cluster bootstrap p-values are reported in parentheses, ***p<0.01, **p<0.1 0.05, *p<0.1. All regressions include province fixed effects, year fixed effects, provincial unemployment rate and provincial average earnings. Employment is a dichotomous variable equal to 1 if the immigrant is employed. Log Earnings is the logarithmic transformation of the earnings of employed immigrants. QC*2002 and QC*2003 provide the impact of the reform on the control group in the years 2002 and 2003, respectively.

Table 7: Returns to education for immigrants in QC

	(1)	(2)
Dependent Variable	Employment	Log Earnings
High School	-0.11	0.01
	(0.06)*	(0.17)
Bachelor	-0.12	-0.14
	(0.04)***	(0.13)
Master	0.01	0.15
	(0.05)	(0.16)
Ph.D.	0.15	0.42
	(0.08)*	(0.33)
Medical Degree	0.01	0.08
	(0.07)	(0.19)
YSM	0.03	0.07
	(0.01)***	(0.02)***
High School x YSM	0.004	-0.06
	(0.02)	(0.04)
Bachelor x YSM	0.03	0.05
	(0.01)**	(0.03)
Master x YSM	0.004	0.03
	(0.01)	(0.04)
Ph.D. x YSM	-0.03	0.05
	(0.02)	(0.07)
MD x YSM	-0.03	0.05
	(0.02)	(0.07)
French Only	-0.01	0.0004
	(0.02)	(0.05)
French & English	0.08	0.20
	(0.02)***	(0.05)***
Observations	6092	4286

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, *p<0.1. All regressions include age, age squared, gender, marital status and presence of kids. High school, Bachelor, Master, Ph.D. and MD are dichotomous variables equal to 1 if the highest degree earned is a high school, a Bachelor's degree, a Master's degree, a Ph.D. degree and a medical degree respectively. The omitted category is dipl & cert a dichotomous variable equal to 1 if the highest degree is a diploma or certificate below bachelor. French only is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in French but not in English. French & English is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in both French and English. The omitted category is English only: a dichotomous variable equal to 1 if the immigrant can conduct a conversation in English but not in French

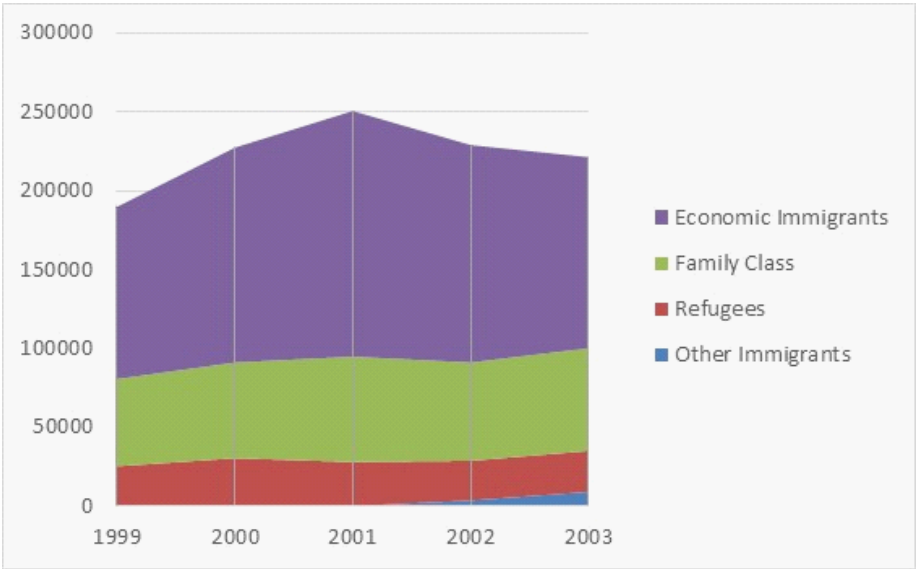

Figure 1: Canadian permanent residents by category from 1998 to 2003
Source: CIC facts and figure 2007

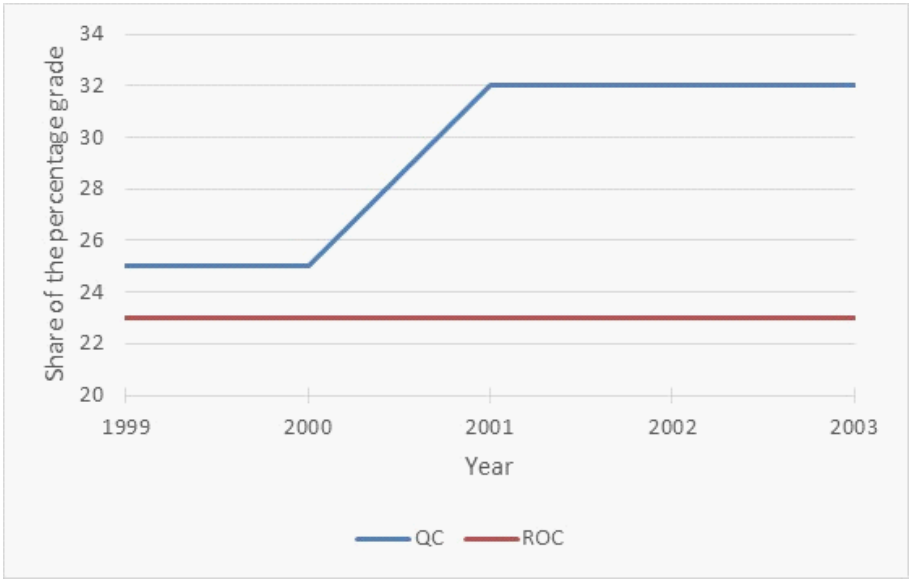

Figure 2: Education's share of the passing grade in QC and ROC from 1999 to 2003

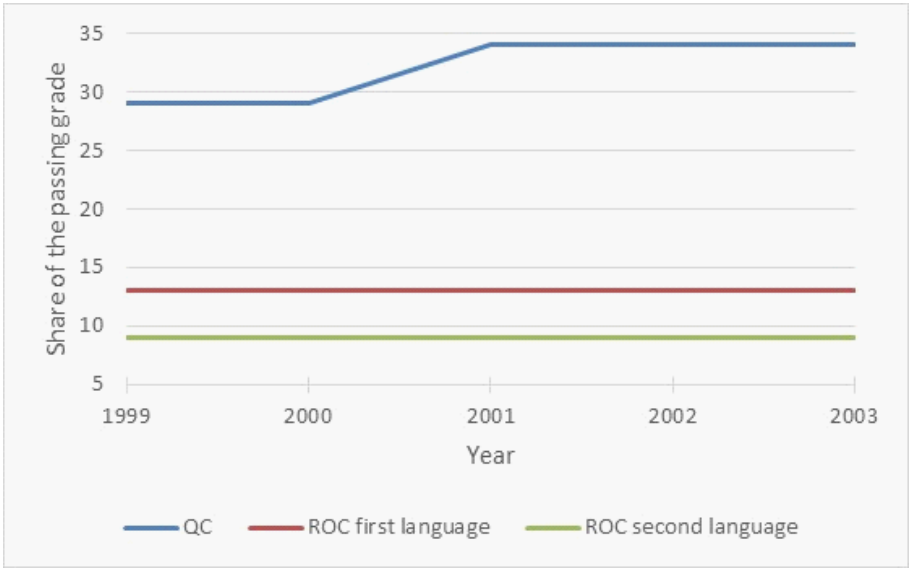

Figure 3: French language's share of the passing grade in QC and ROC from 1999 to 2003

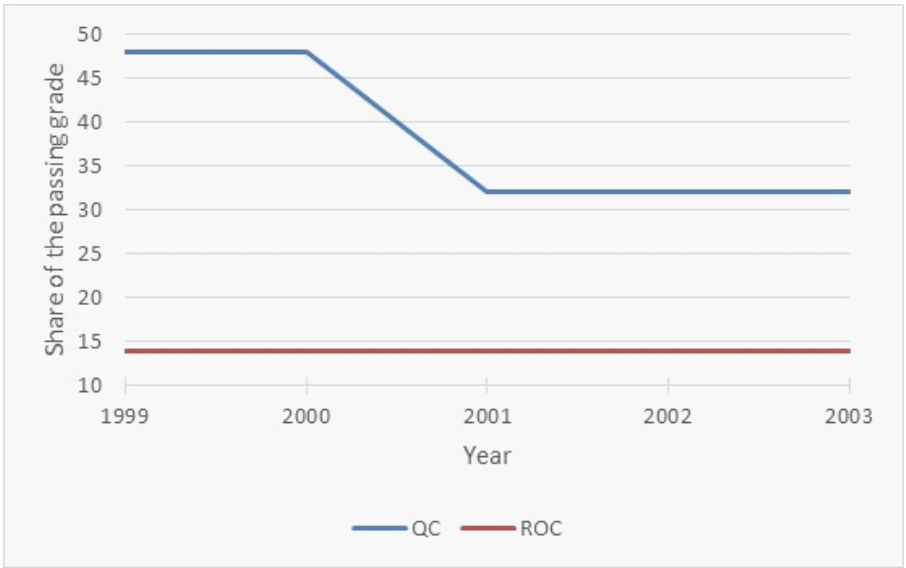

Figure 4: Adaptability's share of the passing grade in QC and ROC from 1999 to 2003

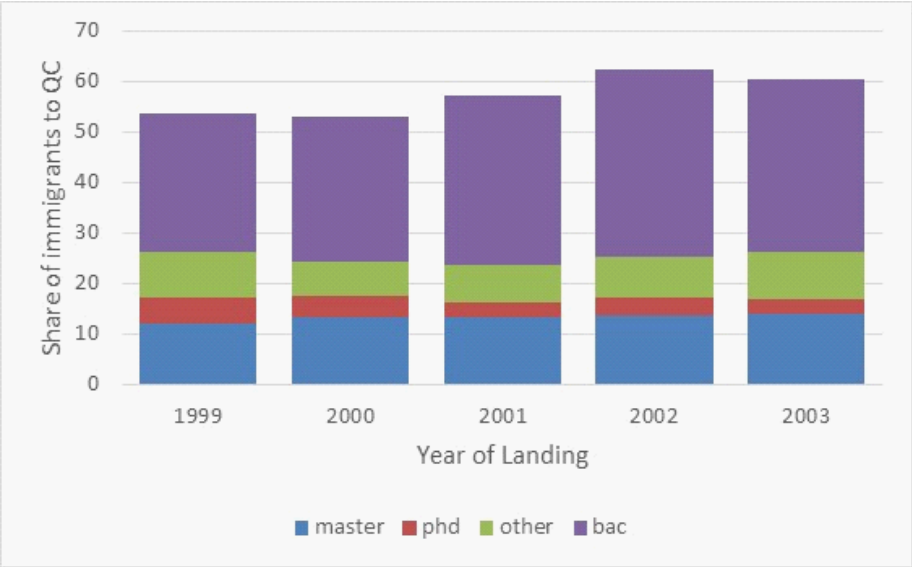

Figure 5: Immigrants to QC from 1999 to 2003 by education level

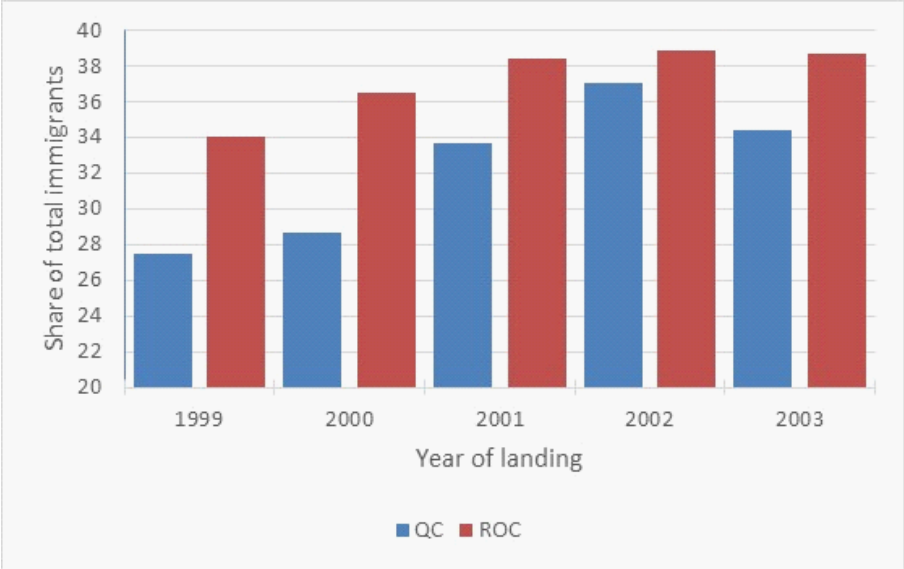

Figure 6: Percentage of immigrants with a bachelor's degree in QC and ROC from 1999 to 2003

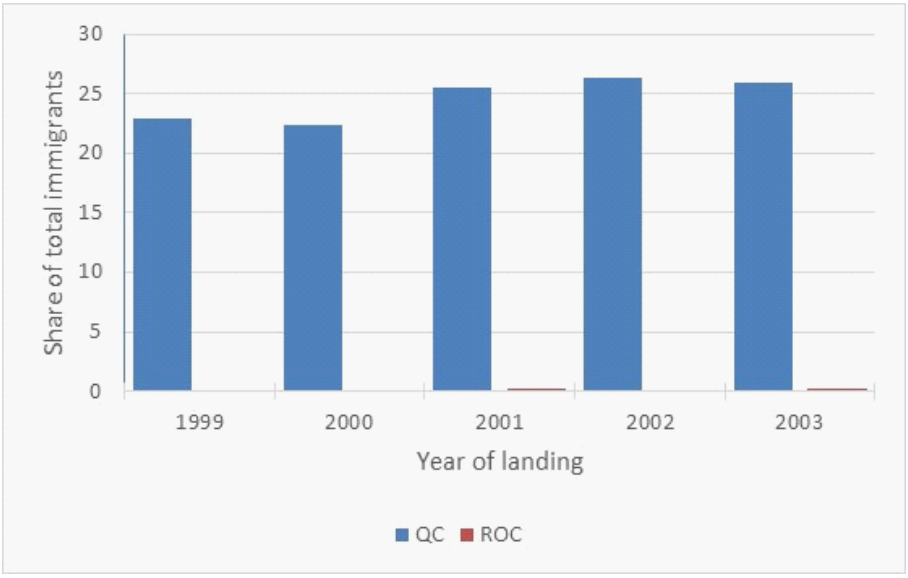

Figure 7: Percentage of immigrants with only French knowledge in QC and ROC from 1999 to 2003

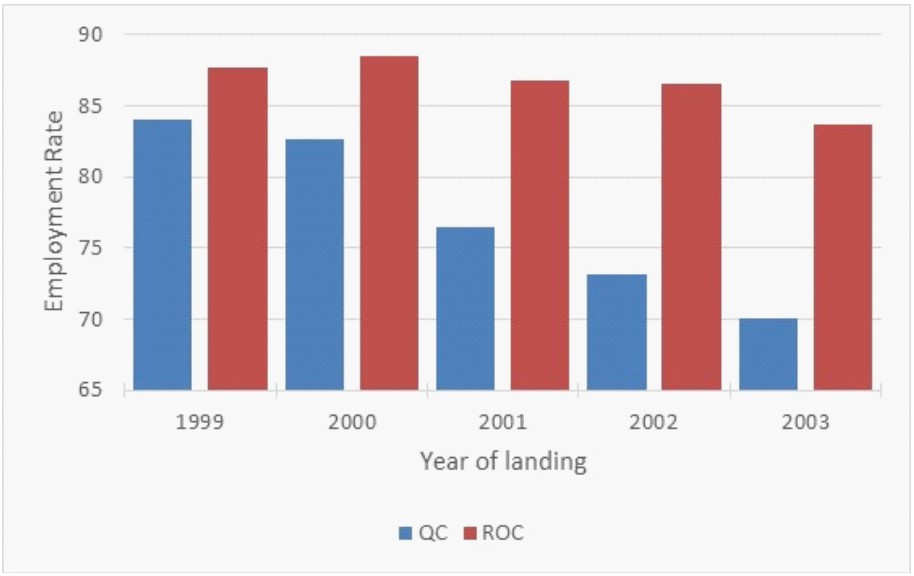

Figure 8: Employment of immigrants to QC and ROC from 1999 to 2003

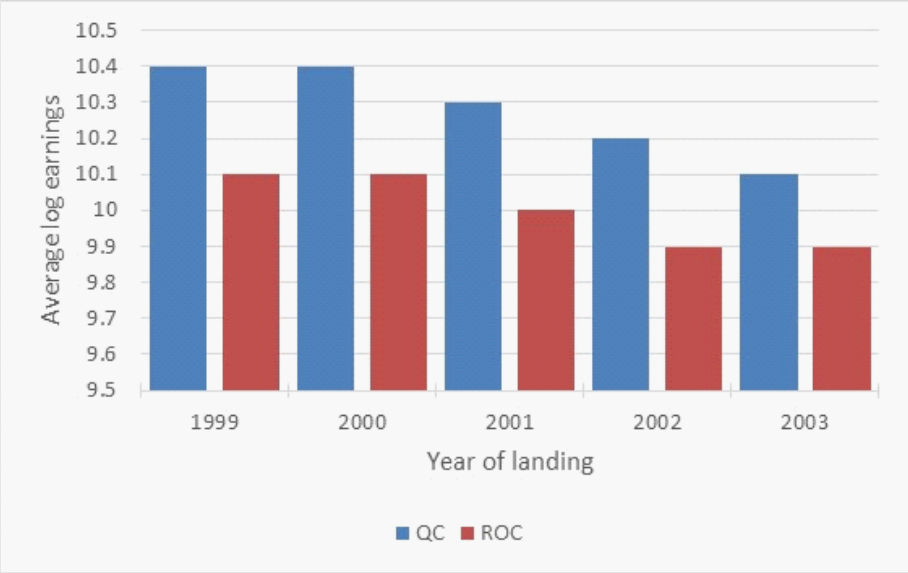

Figure 9: Log Earnings of immigrants to QC and ROC from 1999 to 2003

Appendix

Appendix 1: Adaptability

The "Ministere d'immigration et communautes culturelles" (MICC) specifies, in the "Guide des procedures d'immigration" rules upon which points should be granted to each category of the point system. The following is a detailed explanation of the adaptability criterion which is assessed through an interview.

- Personal Qualities: assessment of the candidate's:
  - Ability to prove his/her achievements and accomplishments during an interview
  - Knowledge of the difficulties of immigration project (financial, family or professional)
  - Understanding of the values of QC society
  - Signing the "Déclaration sur les valeurs communes de la société québécoise"
  - Intention to learn French if he/she does not already know it.
- Motivation: The steps taken by the applicant to facilitate socioeconomic integration:
  - His/Her efforts to get a job in QC (e.g. applying for jobs)
  - His/Her efforts to improve language proficiency in English or French
  - His/Her efforts to obtain a license to practice if he/she intends to exercise a regulated profession in QC
  - Other personal approaches showing efforts for integration (searching for a place to live, a school for children, etc..).
- Knowledge of QC:
  - Knowledge of the labor market
  - Knowledge of the economic sector
  - Knowledge of the living conditions.
- Visit to QC
  - Visit to QC before applying to immigration. Points are awarded depending on the duration and purpose of the visit.
- Connection with a resident in QC:
  - The presence of a close family member holding the Canadian citizenship or permanent residency and residing in QC

Appendix 2: Estimation without restricting the sample to immigrants who studied outside Canada

Table A2.1: Effect of the 2001 QC reform on immigrants' education and language

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent Variable	High School	Dipl & Cert	Bachelor	Master	Ph.D.	MD	French	English only	Fr & Eng
QC*1999	-0.03	-0.04	0.03	0.03	0.001	0.02	-0.01	-0.01	0.02
	(0.28)	(0.63)	(0.22)	(0.19)	(0.28)	(0.57)	(0.15)	(0.15)	(0.11)
QC*2001	-0.03	-0.0004	0.03	0.01	-0.003	0.004	0.01	-0.03	0.02
	(0.28)	(0.93)	(0.36)	(0.31)	(0.51)	(0.21)	(0.29)	(0.29)	(0.5)
QC*2002	-0.04	-0.02	0.05	-0.01	0.01	0.01	0.03	-0.06	0.03
	(0.02)**	(0.33)	(0.03)**	0.64	0.16	(0.31)	(0.02)**	(0.02)**	(0.08)*
QC*2003	-0.04	-0.04	0.03	0.02	0.002	0.02	0.01	-0.03	0.01
	(0.04)**	(0.6)	(0.08)*	(0.51)	(0.56)	(0.6)	(0.05)*	(0.05)*	(0.15)
Observations	41637	41637	41637	41637	41637	41637	41637	41637	41637

All regressions are clustered at the province level. Wild cluster bootstrap p-values are reported in parentheses, ***p<0.01, **p<0.1 0.05, *p<0.1. All regressions include province fixed effects, year fixed effects, provincial unemployment rate and provincial average earnings. High school, Dipl & Cert, Bachelor, Mater, Ph.D. and MD are dichotomous variables equal to 1 if the highest degree earned is a high school, a diploma or certificate below bachelor, a Bachelor's degree, a Master's degree, a Ph.D. degree and a medical degree respectively. French only is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in French but not in English. English only is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in English but not in French. Fr & Eng is a dichotomous variable equal to 1 if the immigrant can conduct conversations in both French and English. QC*1999 isolates immigrants to QC who landed in 1999. It provides a falsification exercise by looking at pre-reform trends. QC*2001, QC*2002 and QC*2003 provide the of the reform in 2001, 2002 and 2003. QC*2000 is the reference category

Table A2.2: effect of the 2001 QC reform on immigrants' labor market outcomes

	(1)	(2)
Dependent Variable	Employment	Log Earnings
QC*1999	0.01	-0.03
	(0.6)	(0.53)
QC*2001	-0.05	-0.01
	(0.45)	(0.47)
QC*2002	-0.06	-0.01
	(0.06)**	(0.61)
QC*2003	-0.07	0.001
	(0.21)	(0.94)
Observations	41637	33337

All regressions are clustered at the province level. Wild cluster bootstrap p-values are reported in parentheses, ***p<0.01,**p<0.05, *p<0.1. All regressions include province fixed effects, year fixed effects, provincial unemployment rate and provincial average earnings. Employment is a dichotomous variable equal to 1 if the immigrant is employed. Log Earnings is the logarithmic transformation of the earnings of employed immigrants. QC*1999 isolates immigrants to Quebec who landed in 1999. It provides a falsification exercise by looking at pre-reform trends. QC*2001, QC*2002 and QC*2003 provide the impact of the reform in 2001, 2002 and 2003. QC*2000 is the reference category

Appendix 3: Returns to education of natives in QC

Table A3: Returns to education for natives in QC

	(1)	(2)
Dependent Variable	Employment	Log Earnings
Below High School	-0.22	-0.39
	(0.00)***	(0.00)***
High School	-0.05	-0.14
	(0.00)***	(0.00)***
Bachelor	0.03	0.36
	(0.00)***	(0.00)***
Master	0.05	0.45
	(0.00)***	(0.00)***
Ph.D.	0.08	0.65
	(0.00)***	(0.00)***
Medical Degree	0.05	0.67
	(0.00)***	(0.00)***
Allophones	-0.08	0.04
	(0.02)***	(0.07)
French Only	0.11	0.05
	(0.00)***	(0.01)***
Fr & Eng	0.13	0.15
	(0.00)***	(0.01)***
Observations	77498	61454

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, *p<0.1. All regressions include age, age squared, gender, marital status and presence of kids are included. High school, Bachelor, Master, Ph.D. and MD are dichotomous variables equal to 1 if the highest degree earned is a high school, a Bachelor's degree, a Master's degree, a Ph.D. degree and a medical degree respectively. The omitted category is dipl & cert, a dichotomous variable equal to 1 if the highest degree is a diploma or below bachelor. French only is a dichotomous variable equal to 1 if the immigrant can conduct a conversation in French but not in English. Fr&Eng is a dichotomous variable equal to 1 if the immigrant can conduct conversations in both French and English. The omitted category is English only: a dichotomous variable equal to 1 if the immigrant can conduct a conversation in English but not French