Differences in Fertility decisions of Canadian Immigrant Households

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Abstract

We explore the fertility decisions of Canadian immigrants using the 20% sample of the Canadian Census of Population for the years 1991, 1996, 2001 and 2006. Using women 16 to 45 years of age, we study the relevance of age at migration and family composition on fertility. We find a nonlinear relationship between age of migration and immigrant fertility - with those migrating in their late teens having the highest fertility rates when compared to the native born - and that family composition has a distinct influence among immigrants. We also investigate the intergenerational assimilation of immigrants. Using information on parental place of birth, we find that although second generation Canadians have, on average, similar fertility rates to those of the native born, there are large differences in fertility by place of origin of parents, with those of Asian descent having substantially lower fertility rates than those from Mexican, European and Middle East parentage.

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1. Introduction

Canada has received continuous flows of immigrants throughout its history, although the intensity of migration and the source countries have fluctuated over time. The immigrant population, as a percentage of total Canadian population, has almost doubled between 1980 and 2006. Estimates from the 2006 Canadian census indicate that 20% of the population is foreign born and that yet another 13% are the children of foreign born parents or second generation Canadians. These estimates also report substantial changes in the composition of immigration. The majority of immigrants arriving before 1980 were from the US or Europe (41%), whereas only 19% of recent arrivals come from these places. The increase in immigration and the change in its composition have originated an extended literature documenting the economic performance of recent immigrants and how well they seem to assimilate in Canadian culture. In this paper, we study fertility behavior of both the first and the second generation Canadian women as compared to the childbearing patterns of women born in Canada from Canadian parents. Analyzing immigrant fertility differentials is important from a diverse array of reasons that include, among others, understanding the household choices of immigrant families and their well being, the changing shape of family structure in the country as well as the socioeconomic integration of the immigrant women. In addition it is key to projecting the future demographic structure of the country and in the assessment of the sustainability of generous welfare policies burdened by increasing age-dependency ratios and pressures in the demands of social services as the baby-boom generation retires (United Nations 2000, Belanger et Al. (2005), Coleman (2006)).

This paper looks into the fertility decisions of Canadian immigrants using the 20% sample of the Canadian Census of Population for the years 1991 to 2006 among women 16 to 45 years of age. We introduce measures of family composition and age at migration, which we find to have a distinctive influence on fertility. In, particular, we find a nonlinear relationship between age of migration and the difference between native and immigrant fertility, with those migrating in their late teens being the farthest from the native-born. This finding points to some critical periods of immigration for smoother assimilation. We also look into the intergenerational assimilation of immigrants. The 2001 and 2006 census provides information on parental place of birth which allows distinguishing immigrants by first, second, and second and a half generation. We use this

information to study differences in fertility between the Canadian born children of immigrants and their immigrant parents.

Next section reviews recent findings on fertility behavior and assimilation of immigrants that informs the analyses of this paper. In section III, we describe the data employed and discuss the empirical strategy to follow. In section IV, we discuss the estimates of the fertility behavior of Canadian immigrants as compared to native born, and show estimates on intergenerational fertility assimilation. Section V concludes with some general comments about the findings and future research.

2. Background literature

As mentioned above, Canada has traditionally been an immigrant receiving country. However, the nature and composition of immigration has significantly changed during the past 30 years. The majority of immigrants arriving before 1980 were from the US or Europe (41%), whereas only 19% of recent arrivals in 2006 come from these places. Currently, immigration from Asia constitutes 58% of recent arrivals versus 34% of those arriving before 1980 and immigration from Africa is twice as much among recent newcomers than it was for the group arriving before 1980. The increase in immigration and the change in its composition have originated an extended literature documenting the economic performance of recent immigrants and how well they seem to assimilate in Canadian culture.[1]

Fertility behavior likely plays an important role in many dimensions of immigrant well-being, as fertility rates shape the socioeconomic assimilation and mobility of immigrant women. For instance, individual's investments in human capital usually require postponement of fertility and employment opportunities and career advancement tend to become too costly for women with a large number of children.[2] Therefore, high (and early) fertility may hinder the socioeconomic integration of the immigrant women, perpetuating more traditional gender roles within immigrant households. Improved economic opportunities in Canada compared to that prevalent in their country of origin and interaction with native-born may affect fertility preferences of immigrants. Alternatively, even if childbearing preferences remain the same, the new environment they face in Canada, both in terms of opportunities and of costs, may alter their ultimate fertility decision. Immigrant women may find more labour market opportunities than in their countries of origin and

[1] See for instance, Ferrer, Green and Riddell (2006) among others.

[2] Adsera (2005) shows the connection between labor market institutions and fertility using evidence from Europe.

decide to reduce/postpone fertility in order to work. Alternatively, in the absence of informal child care provided by relatives, they may formal day care to be expensive. As a result, they may decide to either maintain the (generally higher) home country levels of fertility while staying at home or trade-off children for work (Galor and Weil, 1996). Further, given the trade-offs faced in terms of time and resources within the households, the ultimate choice of more quantity of children over potentially more resources devoted to the rearing of each child may have repercussions on the well-being of the second generation of immigrants.[3] In this regard, Blau et al. (2008) find that in the US second-generation women's schooling levels are negatively affected by the average fertility of immigrants of their parents' descent.

Different models of fertility adjustment try to explain the fertility experiences of immigrants. The *assimilation model* of fertility adjustment, suggests that couples migrating from a country with higher fertility rates will initially follow their own country's fertility patterns and will only gradually adjust to the fertility rates of the host country. This assimilation process may take more than one generation to accomplish. Adaptation takes place as immigrants' expectations and cultural values change or as they gain knowledge of opportunity costs in the host country (Fernandez and Fogli (2009)). In the short run, however, fertility may follow the *disruption model*, which postulates an initial drop in the couples' fertility around the time of migration and a fertility rebound later on (Blau (1992), Kahn (1994)). The two models can be combined, and it may be possible to observe an initial drop in fertility at the time of immigration, followed by a subsequent rise in fertility that gradually declines to converge to the host country levels. Economic theory builds on these ideas to incorporate the role of prices, opportunity costs and fertility regulation on fertility decisions. Changes from the source to the host country in female wages, household income and fertility regulation will, therefore, affect couples' fertility.

In this regard, results from the empirical investigation of immigrant fertility are mixed. An influential study from Blau (1992) seems to support the disruption model regarding short run fertility adjustment of immigrants in the US. Current research is more focused on long run fertility adjustments. For instance, Parrado and Morgan (2008) find compelling empirical evidence of fertility assimilation for Hispanic women in the USA. In Canada, fertility studies show that, up to 1980, Canadian immigrants had lower fertility rates than the Canadian-born (Kalbach 1970), but the trend reversed since then (Belanger and Gilbert 2003). Ng and Nault, (1997) and Ram and

[3] The trade-off between quality and quantity of children is outlined in Becker (1981).

George (1990) find evidence of short-lived fertility disruption upon immigration and quick convergence to native born fertility levels with socioeconomic assimilation.

3. Data and Empirical Approach

The analysis of fertility behavior can focus on the number of children women have and/or on the timing of childbearing over the fertile life of a woman. In this paper, we focus on the total number of children women aged 15 to 45 have conditional on their migration status as well as on a set of additional independent variables.

Because it can lead to negative predicted values, ordinary least squares is not the most appropriate model to explain variation in event count dependent variables such as fertility. Event count models measure how often an event occurs – in this case having a child – over a given time interval. We estimate the model using the Poisson regression model in equation (1):

$$F_i = e^{\beta Ii + \gamma Xi} + \varepsilon_i \qquad (1)$$

where F is the measure of fertility of female i, in our case total number of children, I is an immigrant indicator, X is a vector of individual characteristics that may influence fertility, including age, presence of additional members in the household, geographic location, socio-economic status of the household, cultural/religious background, etc… , and ε is the error term. Since not all respondents, when observed, have experienced the same number of fertile years, we control for the exposure time (defined as age minus 15 years) in our models. In general, regression coefficients from non-linear models have no easy interpretation. For this reason we report in the tables the incident rate ratios (IRR). In the most parsimonious model, we will be interested in comparing the predicted fertility rate (or fertility incidence) between two observations which differ only in that variable I_i takes on a value of 1 for immigrants and 0 for the native born. The ratio of these two incidence rates is given by:

$$IRR(I_i) = \frac{E(F_i \mid I_i = 1) = exp(\hat{\gamma}X + \hat{\beta}(1))}{E(F_i \mid I_i = 0) = exp(\hat{\gamma}X + \hat{\beta}(0))} = \exp(\hat{\beta}) \qquad (2)$$

That is, the effect of a one unit change in the independent variable on the relative incidence rate of fertility, which in the case of indicator variables, such as our immigrant indicator I, can be interpreted as the difference in fertility rate for immigrants relative to the native born.[4]

[4] Similarly, in the case of a continuous variable such as age, the IRR could be interpreted as the increase in fertility rate when age increases by one year.

We use the 20% sample of the Canadian Census of Population for the years 1991, 1996, 2001 and 2006 to analyze differences in fertility between immigrant and native-born women (including second generation Canadians), identifying some factors that underlie them. For each census, we linked all individuals belonging to the same household and selected all women between 16 and 45 years of age. We excluded aboriginal individuals. For each of these women we have information about their age, education, marital status, number of children (in the 1991 Census), number of children living in the household, province of residence, immigrant status and parental immigrant status (in the 2001 and 2006 Censuses). In addition, for immigrant women, we have information about year of immigration, age at immigration, country of birth and parental country of birth (in the 2001 and 2006 Censuses). To reduce computing time to reasonable length, from each Census, we select all immigrant observations plus a 20% random sample of native-born individuals. We weight observations accordingly. The four censuses are then pooled together resulting in approximately 1,800,000 observations.

In the absence of long panel data with sufficiently large samples of immigrants, immigrant studies typically use synthetic cohorts of immigrants from pooled cross section surveys, such as the census, when a temporal perspective on the data is required. That way a researcher can follow groups of individuals with similar characteristics across time. By making use of the 1991 to 2006 censuses, we are able to follow cohorts of immigrant women across time to look at patterns of fertility assimilation. Census data has the additional advantage of providing large samples necessary to perform robustness analysis of the estimates. The 20% sample of the census, not only provides a large number of observations, but it also allows access to more detailed information on individuals, as well as to a very rich categorization of relationships among members of the household. This enables us to link individuals in the same household and to compute the number of children of each woman living in the household.

As we noted, the actual number of children a woman has had is only available in the 1991 Census. After 1991, the Census does not report a measure of total fertility for each individual but only the number of children living at home. We will use this variable as the measure of fertility in the analysis that follows. This imposes a limitation on our study since it introduces some amount of measurement error into the analysis.[5] To reduce this problem, we restrict our sample to

[5] Belanger and Gilbert (2003) use a similar method (the own children method) and note that despite the potential problem of missing data it has advantages over the use of vital statistics to calculate differential fertility according to mother's place of birth. Vital statistics and census may report countries of birth differently and country of birth is

relatively young women (up to 45 years of age) who are more likely to have children living at home. Still the measure is subject to several caveats. The measure will miss all the children that are living only with their father. To the extent that young children are far more likely to live with their natural mothers even after a disruption of the marriage, this will not be too important.[6] In addition, it may be difficult to properly capture the very early childbearing of older women in the sample as some of their children may have already left the home. That should be a concern particularly if leaving the household in their late teens or early adulthood (e.g. attending college far from home, earlier marriage or cohabitation) happens at a differential rate between immigrants and native born.

To assess the importance of the potential bias introduced by our dependent variable, we undertake three types of robustness exercises. First, we use the actual total number of children available in the 1991 census to re-estimate the models and compare them to estimates for the 1991 Census using our fertility measure. Second, we restrict the sample to women up to the age of 40. This reduces the likelihood that some children have already left home but it misses late childbearing, which may in turn be differentially important among groups (e.g. education, country of origin, etc). In this regard, it is reassuring that Vezina and Turcotte (2009), after comparing data from the census and from the General Social Survey, note that there is no appreciable bias in the characteristics of the proportion of women aged 40 to 44 who have a child aged 5 or over based on whether some of the kids live with them or not. Third, we re-estimate the models restricting the age of the children included into our fertility measure to those 18 and under. The overall pattern of the results and the estimated coefficients are quite robust across these different samples and are available upon request.

We have grouped the information for country of origin (both for the individual's and their parents') into twenty groups that are relatively homogenous. These are listed in table A1 in the appendix. In addition, we collected information on the generational status of the respondent. A woman in our sample can be classified as: a) Canadian, born to Canadian parents, what the immigration literature refers to as the third generation; b) Canadian, born to two immigrant parents, which is also known as the second generation; c) Canadian, born to one Canadian parent

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missing in some birth certificates. They show nonetheless that estimated fertility differentials for immigrants and native-born individuals for the period 1996-2001 using both methods are not very sizable - with a downward bias of the census for women younger than 30 and an upward bias for those aged beyond 30.

[6] The census questionnaire asks respondents to include children in joint custody who live most of the time in a household as household members. There are also some instances in which several women live in a household with children and we can not be certain of which one is the mother of the children. This happens, for example,, when the

and one immigrant parent, or the 2.5 generation and finally d) foreign born respondents or first generation. We will use this characterization to determine whether there is significant intergenerational assimilation in fertility.

Table A2 in the appendix shows summary statistics of the main variables by native-born and immigrant status. The first two columns correspond to the whole sample over the 1991, 1996, 2001 and 2006 censuses. In order to provide a sense of the temporal variation found in the data, we also present similar measures for the first and last year of the sample. Immigrants have, on average, more children than the native born. For both groups, the average number of children observed in the sample has diminished approximately by 15% between 1991 and 2006. Immigrants have higher levels of education and are generally older than native-born Canadians. The latter may account for part of the gap in fertility observed between both groups. More immigrants are married or living under common law (CL), whereas more Canadian-born respondents remain single. Between 1991 and 2006, the percentage of married-CL individuals has fallen for both groups (around 9 points for Canadian born and 4 points for immigrants), while the fraction of single individuals has increased by a similar magnitude in each case. The decrease in the proportion of married-CL individuals is likely the result of a combination of delayed marriages and an increase in common law unions. Finally, the fraction of immigrants with children, living in households with additional family members other than the spouse is less than half that of the native born (3% versus 8%, respectively). The average immigrant has been in Canada about 13.4 years and arrived at the age of 19.5. Yearly figures suggest that the fraction of recent immigrants over the whole pool has increased and that immigrants arrive at a slightly older age than in the past. Immigrants are also increasingly arriving from countries in Asia and Africa as opposed to Europe. These trends are well documented in the Canadian literature of immigration, and are likely to have an impact on fertility behaviour (Belanger and Gilbert 2003).

Table 1 shows the mean number of children by year and selected characteristics for women aged 16 to 45 in each census. As mentioned, fertility is higher among immigrants than the native born, although both groups portray a similar diminishing trend over time. We show fertility by years since immigration for each census year to offer a rough idea of how fertility patterns evolve over time. In 1991, recent immigrants (less than 5 years in Canada) had, on average, less than one child. In 1996, the same cohort of immigrants, now having spent 6 to 10 years in Canada, had

children are reported as grandchildren of the head of the household and there is more than one daughter of the head of the household living in the household. Fortunately, this is not a common occurrence.

slightly over one child (1.06), and yet a slightly higher number of children in 2001, having lived in Canada between 11 and 15 years. Previous cohorts of immigrants have a much higher fertility rate at any point in time, while immigrants that entered Canada later than 1991 show substantially lower fertility rates over time. The information in Table 1 is useful to show general trends and the source of variation in our data. However, changes in immigrant characteristics, such as source country or age at immigration from one Census year to the next, will have important repercussions in the measure of fertility presented in this table. An increase in the share of very young immigrants in a cohort will necessary imply low initial fertility rates for that arrival cohort as they may have not started having children yet. As the cohort ages, fertility rates will naturally rise.

Fertility rates among immigrants vary greatly by age at immigration. Those immigrating at a young age have low fertility rates, similar or lower than those of Canadian-born females, while those immigrating later in life show substantially higher fertility rates in Table 1. However, the fact that individuals who migrate as adults are observed at older ages constitutes a confounding factor. Country of origin is another important dimension to consider, as fertility behaviour is highly correlated with cultural norms regarding fertility in the source country (Khan 1994; Ford 1990; Blau et al. 2008, Fernandez and Fogli 2006).[7] High fertility rates can be observed among immigrants from the US, UK-Ireland, Northern and Southern Europe, Mexico, Central America, Middle East, Southern Asia, and Africa (except Southern Africa). China, North Eastern Asia and Eastern Europe show the lowest fertility rates.

4. First Generation Immigrants

Foreign Birth and Family Structure

The estimates that we report in this section correspond to relative fertility rates of immigrant females as compared to those of native-born females, holding a number of factors constant. In particular, all models include controls for age of the woman, marital status (single, married or divorced/separated), province of residence, and highest education level attained. These control variables consistently show the same effect on fertility across all specifications: fertility increases with age as women reach their late 30s and then plateaus once we have controlled for the diminishing trend in fertility across census years; fertility rates are higher for married-CL and previously married-CL women, and for the least educated. In order to control for the reported

diminishing trend in fertility over the years, we include dummy indicators for census year. Although we do not report all of the control variables in the tables to economize space, they are available upon request.

There is some controversy in the literature about whether or not it is appropriate to include controls for income in fertility analysis. Income measures are endogenous in that they reflect the respondent's former decisions to enter the labor force. Fertility and labor market decisions (which ultimately affect income) are so intertwined that it is not realistic to regard them as exogenous to one another. Females with strong preferences for career work may also have low preference for child-rearing and this introduces selection bias in our estimates. The direction of the bias is not straightforward. To the extent that children are a normal good, females with more income may have more children, since they can afford to pay for the extra-services involved in raising children. However, women may have higher incomes precisely because they reduced or postponed their fertility. Overall, considerations of joint labour market and fertility decisions require special modeling that is beyond the scope of this piece. For this reason, we have decided not to include income controls in our analysis. Note, however, that education and marital status capture some important dimensions of economic well-being and to some extent help us to control for income.

Our initial set of estimates of immigrant fertility rates is reported in Table 2. The immigrant fertility rate summarizes the fertility rate of an immigrant over a native-born Canadian, keeping constant other factors. Immigrants have significantly higher fertility rates than the native born, around 1.083 times higher (column I, Panel A), meaning that immigrants have, on average, 8% more children, after taking into account other factors affecting fertility, such as education, marital status, geographic location and year of survey. In panel B of Table 2 we show the predicted number of children for each group considered in panel A. Throughout the paper we present the average predicted number of children for married females between 35 and 40 years of age in each group based on the corresponding regression estimates and with the remaining control variables (like education, province of residence and census year kept at the mean of each group. In that regard, between-group differences of the non specified control variables will also be accounting for part of the gap of predicted fertilities across groups. Hence, the predicted average number of children has the advantage of being closer to the actual expected number of children in that particular group; but it has the shortcoming of confounding the ultimate impact of the variable of

[7] Nonetheless, some migrants arriving in Canada will likely have better access to contraceptive methods during the remaining years of her fertile life, than in their country of birth. That should impact upon their ultimate fertility,

interest when looking at the gap of predictions.[8] Nonetheless, the fertility rates provided in panel A already present the deviations in fertility rates that are only attributed to that particular variable.

In column I, Panel B, married-CL immigrant women of 35 to 40 years of age are expected to have around 1.85 children as compared to 1.76 for Canadian-born women. This gap between migrant and native fertility is consistent with findings in Ng and Nault (1997) and Ram and George (1990) who estimate that fertility of foreign-born women surpassed that of native-born Canadian in the early 1980s, after having been moderately lower for the previous decades. In a recent paper Belanger and Gilbert (2003) confirm that fact with data from the 1981 to 2001 Censuses. Nonetheless, the wide dispersion across cohorts and ages at migration among immigrants in our sample as well as shifting composition of the countries of origin for recent arrivals demand a more detailed analysis of these dynamics.

In column (II) we introduce some basic information on family composition. Family structure may be an important determinant as well as consequence of fertility. Additional family members present in the household may, on the one hand, impose an added cost – in time or financial resources – that hinders fertility, particularly in the case of elderly parents. On the other hand, it may facilitate the care of children and reduce the costs involved in raising them. For immigrants, extended families may in addition create a stronger cultural pressure to maintain fertility patterns from the source country. To explore this possibilities, we construct a variable indicating whether respondents with children live in extended families (that is, whether the household includes family members other than spouses/partners and their children).[9] The variable is defined as an indicator and does not distinguish whether the additional members are grandparents or, say, aunt/uncles. Further work should explore this in more detail since it would help to better interpret the implication of the estimated coefficient. Unfortunately Census data lacks any longitudinal information so we are unable to discriminate whether the household already had this composition

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independently of their cultural heritage.

[8] The predicted number of children for native-born married women aged 35 to 40 years of age, shown in panel B as 1.76, is not comparable with Canada's fertility rate (recently estimated around 1.58). The latter corresponds to the total fertility rate (TFR), which represents the number of children a woman would have if she was subject to prevailing fertility rates at all ages from a single given year, and survives throughout all her childbearing years. It is not surprising that our predicted number is somewhat higher than the TFR in Canada as shifts of childbearing to later ages can show up in reductions in the TFR larger than the ultimate changes in the fertility of a certain birth cohort.

[9] The respondent lives in an extended family if the number of individuals in the economic family is greater than that of two adults plus reported children if married-CL or greater than that of one adult plus reported children if not married-CL. For the later group, we consider the respondent to live in an extended family only if she reports children. The reason is that we want to avoid counting single, childless females still living at home with their parents as living in extended families.

when the children were born or whether the additional individuals moved as a result of childbirth (e.g. grandmothers to support daughter) or some time after. Because of all of these restrictions, the coefficient is simply interpreted as an association. Estimates in column II Panel A show that an individual with children living in households with extended families have lower fertility rates that an individual with children living in nuclear families. Immigrants living in extended families have slightly higher fertility rates than the native born living in extended families, but still lower fertility rates than immigrants with children living in nuclear families (around 0.837 times lower).[10] In Panel B, the predicted average number of children is 1.9 and 1.61 for immigrants living in nuclear and extended families respectively, and 1.78 and 1.52 for native born in either nuclear or extended families. It is important to note that the prevalence of this type of household is higher among immigrant families (around 6%) than among natives (around 2%) as show in table A2 in the appendix.

Age at Immigration

Age at migration has long been recognized as a decisive variable for understanding the process of assimilation of immigrants in many socio-economic dimensions. When observing any particular outcome of interest, age at migration should matter for two distinct reasons. First, the earlier the individual arrived in the country of destination, the more time the immigrant has already lived there and the more likely is she to understand the rules and institutions that govern its socio-economic life. In the earnings literature, years since migration are regularly used as a measure of time to assimilate or of exposure to the local labor market (Chiswick 1978) In general, for those arriving during their childhood, school attendance provides an opportunity to become familiar with the culture and expectations of the country of destination.

Second, the age at migration by "itself" may matter even more than the time of exposure if there are critical ages at which an individual is able to learn particular behavior or skills, such as the local language. For those whose mother tongue is not the same of that of the country of destination arriving later in life may constitute a penalty. Recent work by Bleakley and Chin (2008) shows that immigrants to the US who arrive before age nine (the critical period) become fluent in English regardless of the language of their country of origin, while those arriving later from non-English speaking countries tend to have worse proficiency. English proficiency, in turn,

[10] This is calculated as the exponential of the coefficient for additional family member plus the coefficient for the interaction between additional family member and immigrant indicator

increases earnings, divorce rates and intermarriage rates and decreases fertility rates among US migrants.

The average age at migration is 19.5 years of age among women in our sample, though it increases from 18.3 in the 1991 Census to 20 in the 2006 Census. The share of those who arrived before age 12 is 29% in 1991 as compared to just 26% for 2006. Around 50% of the individuals arrived in Canada as adults, past the age of upper secondary schooling. Figure 1 presents the distribution of ages at migration for the sample. There is a small spike for toddlers after which, the fraction of entrants remains more or less flat until reaching its peak between the ages of 20 and 30.[11]

In column III of Table 2 we create a set of five dummy variables among first generation migrants for different ages of migration. Fertility significantly varies by age at immigration. Those immigrating as children (aged less than 5 at the time of immigration) have a similar propensity to have children as native Canadians. All other immigrants have higher fertility rates than these groups. In particular, those immigrating between 16 and 19 years of age have significantly higher fertility rates than any other immigrant group (1.194 times higher). The same patterns show up in the predicted fertility in column III of Panel B.[12]

Discrepancies in assimilation between this particular group of immigrants and other age groups have been reported by Schaafsma and Sweetman (2001), suggesting that those arriving at that age may find it difficult to transition. In particular, this group has on average a lower educational achievement, which in turn is associated with higher fertility. Interestingly, immigrants arriving under the age of six have a slightly lower predicted fertility than natives which may reflect their slightly higher mean educational attainment in our sample.

Immigration cohorts and assimilation

As we noted before, duration in destination has been a key factor in understanding the process of labor market adjustment of migrants to the local market. Similarly, for the US, Ford (1990) notes that any analysis of immigrant fertility that does not control for duration of residence in the destination country is potentially misleading. Other studies have argued accordingly (Hervitz

[11] It is worth noting, however, that the distribution of ages at migration varies substantially by country of origin. If immigrants from Europe or the US are removed from the sample, the distribution of immigrants by age at immigration resembles more a normal distribution centered at the early twenties.

1985). Those who favor the "disruption" hypothesis argue that we should observe some decrease in fertility at the time of migration, since the process itself is disruptive in many spheres of the life of an individual, with a subsequent catch up. Eventually, migrant fertility can remain high (resembling that of their country of origin) or slowly converge to that of natives (as Ram and George (1990) find since the 1960s to the mid 1980s). However, previous evidence for Canada is mixed. Ng and Nault (1997) argue that the disruption happens even before the individual migrates into Canada. Belanger and Gilbert (2003) results for more recent Censuses are consistent with this story. Further they find a monotonic reduction of the number of children by length of time since migration.

In addition a particular arrival cohort may also have been affected by existing economic or social conditions in the country at the time of arrival that may have eased or hardened their ability to assimilate (Borjas 1999). Further, latest arrival cohorts will have on average been born more recently. If over time access to family planning, preferences on the number of children and family structures of the native-born (and world) population have shifted, we should also observe some of those changes across immigrant arrival cohorts.

We extend our original equation to account for differences in fertility among different groups by time of arrival to Canada. For instance, we follow immigrants arriving in Canada between 1981 and 1985 (cohort 85) through the 1991, 1996, 2001 and 2006 census when they have been in the country between 6 and 10 years, 11 to 15, 16 to 20, etc. Note that immigrants arriving in Canada between 1986 and 1990 are observed through most of their assimilation process. Earlier cohorts are only observed after they have already been in Canada for some time; later cohorts are observed for only a short of period of time.

Table 3 shows our estimates on the evolution of fertility for different arrival cohorts of immigrants. Relative to the average native in the sample, immigrants from cohorts who arrived before 1981 have higher relative fertility, almost 1.11 times higher.[13] The interest of these estimates, however, comes out in observing the evolution of particular arrival cohorts. Relative to the native born, those arriving between 1981 and 1986 have higher fertility rates than the average

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[12] We tried finer subdivisions for older ages at migration and found no indication that fertility rates change much if immigrating after age 20.

[13] Previous studies indicated that immigrants arriving in Canada before 1980 had on average lower fertility rates than the Canadian born. Our result is still consistent with this observation. It simply reflects the changing fertility of the native born population, since our sample includes more native-born Canadians born after 1940 – hence with lower fertility rates - than the samples in older studies.

native in the sample – almost 1.025 times higher everything remaining constant. Note that this cohort is observed for the first time once it has been living in Canada for at least 6 years. For cohorts that we observe since their arrival in Canada, we find evidence of the disruption hypothesis. Relative to the native born, fertility rates are lower the first five years after migration. Fertility rates are higher, on average, after this. Note that these estimates are obtained holding constant the age of the immigrant. Column II in Table 3 presents the predicted average fertility for a married woman of 35 to 40 years of each subgroup. Overall we observe a decrease in fertility by cohort (as we would also observe for the native population by birth cohort) and an increase of the number of children with duration in destination.

Country of origin

The observed fertility behaviour of a woman is the result of choices made under a set of constraints (e.g. economic, educational and/or institutional) and with a collection of social attitudes towards fertility, contraceptive measures, gender preferences, and out of wedlock childbearing, among many others. Those attitudes constitute an important component of the cultural background of individuals. Since many of those attitudes are linked to common norms and expectations of different societies, we try to partly account for them by looking at the woman's country of origin. Place of origin has already been show to be relevant to explain variation of fertility outcomes in different context. Anderson (2004), for example, finds important differences in levels of childbearing propensities between women from different countries of origin among migrant to Sweden from the 1960s to the 1990s. More recently, Georgiadis and Manning (2009) analyze whether Muslims (Pakistanis and Bangladeshis) are not successfully assimilating to British society as compared to other migrant groups in different dimensions that include fertility. Similar research for the US has been undertaken by Kahn (1994) and Parrado and Morgan (2008) among others. The bottom line of these studies is that even if fertility differentials between the second generation immigrants and the native-born still look large the trend is toward convergence.

It is important to note that policies in the country of arrival in regard to the expectations of what extent and how fast newcomers have to become part of a homogenous culture may play a role in the speed at which those behaviors adapt. For example, multiculturalist movements that encourage cultural continuity of newcomers could potentially trigger the assimilation to the receiving culture. In other instances, policies in the country of origin either pronatalistic (e.g. Ceceascu's regime) or restrictive (e.g. China's one child policy) may have been shaped fertility of

migrants before their arrival in such a decisive way that their behavior in the country of destination reflects a re-adjustment of their preferences after breaking free of policy constraints.

To account for these influences, we expand equation (1) to include place of birth. Table 4 shows the relevance of the immigrant source country on immigrant fertility. The relative incidence rate of fertility across different places of birth conveys whether high fertility rates are common among all immigrants or whether they are restricted to certain ethnic or national groups.

As mentioned above, the composition of the immigrant population and consequently, the continent of origin of young immigrant mothers, has changed substantially over the last decades. Well until the 1981 Census the majority of immigrant women with children under five were originally from Europe. However, Asian immigrant mothers overtook all other continents in the 1996 Census as a share of children under five. In our sample, and throughout the Census years, around one fifth of the immigrants were born in another American country (Table A2 in the appendix); around 6% in the Middle East and around 1% in Pacific countries. The share of Europeans moved down from 41% in the 1991 Census to only 23% in the 2006. Conversely the share of Asian and African countries moved up from 30% and 5% in 1991 to 44% and 8% respectively in 2006.

Estimates in Table 4 show that immigrants from the American continent (including those from the US) portray substantially higher fertility rates than the native born, particularly those from Mexico and Central America with fertility rates around 1.5 times higher than the NB. Other immigrant groups with high fertility rates are those from Africa, the Middle East and South Asia. The Northern and Eastern European immigrants as well as those from elsewhere in Asia have, in comparison, relatively low fertility rates. Chinese immigrants depict the lowest fertility rates of all groups, 0.83 times that of the native born. The implied fertility of the most prolific groups in column II is well above the level of replacement that stands at 2.1; while that for the whole population of immigrants in column I Panel B is merely 1.85. There is a caveat to these numbers, due to the fact that our prediction portrays a married woman of 35-40 years of age originating from each of these source regions. Therefore, differences in the age at arrival and age distribution among groups from different countries may change this picture in the near future. For instance, if most of the Western African immigrant women are recently arrived in Canada, the predicted number of children among married Western African women 35-40 years of age may be a very poor prediction for the fertility rates that younger Western African women may experience five or ten years from now. Although this is generally true for all groups, as different cohorts may have

different preferences for fertility, it is likely to be exacerbated by changes in the composition of immigration. The current 35-40 year old Western African women is likely to have spent a short time in Canada and their predicted number of children is unlikely to reflect any assimilation. However, younger Western African immigrants will, by the time they reach 35-40 years of age, have spent more years in Canada and are likely to show some assimilation

V. Intergenerational Assimilation of Immigrants: The Second Generation

The importance of the socio-economic outcomes of the second generation for the future of a country has taken the center-stage in many academic and policy debates. In general, the ability of a second-generation immigrant to assimilate should depend on the human capital of her parents as well as on the role of ethnicity for the group either as a provider of cohesion and social capital or as a negative marker, potentially associated with discrimination. Depending on the combination of those factors, the second generation will ultimately be more or less successfully in assimilating to the country of destination of their parents. With regard to fertility, several recent studies have focused on the second-generation and on exploring what role ancestry (or more generally the cultural background where the individual was brought up) has in their fertility outcomes, among others. Fernandez and Fogli (2006) examine the effect of culture on the fertility of second generation US women of different ancestry, and find that it significantly explains differences in fertility. Blau et al. (2008) also find second-generation women's fertility to be positively affected by the fertility of the first generation immigrants from their parents' country of origin. The mother's effect is particularly important and larger than that of the fertility of immigrant woman who were born in their father's country.

In Tables 5 and 6 we use parental place of birth and generational status in our model to assess whether fertility assimilation occurs within one generation or if relatively high fertility rates can also be observed for the children of immigrants. This is an important point to address since the second generation constitutes approximately 20% of the native born population. Hence, fertility rates of the children of immigrants, if different from the rest of Canadians, should have a role in determining future demographic projections. Information about parental immigration status is only available in the 2001 and 2006 census of population; therefore these estimates refer only to these two years of data.

In Table 5 we use the whole sample and differentiate individuals by generational status: native born of Canadian parents; native born with both or one foreign born parents (second or 2.5 generation) and first generation immigrants (with foreign or native born parents). Results illustrate that second generation immigrants have lower fertility than both third generation Canadians and first generation migrants. The relative ratio is the lowest when either both parents were foreign born or when only the mother was. Those groups represent 12% and 4% of the native born population (Table A2 in the appendix). However the differences in fertility across the second and the 2.5 generation are minor. This result is consistent with Belanger and Gilbert (2003), who show that the gap in the number of children under five across-groups shrinks substantially once demographic characteristics are included, and that in particular the gap between the second and the 2.5 generation is usually negligible.[14] The predicted number of children for a married-CL woman between 35 and 40 years of age (column II) in the second generation group is 1.63, whereas for a similar individual in the 2.5 generation the number is around 1.64. In contrast, immigrants from immigrant parents have 1.78 children, slightly above the predicted number of children for the native born (1.75). To properly interpret these differences in fertility, it is important to remember that a large share of the second generation women in Canada have European ancestry as opposed to those in the first generation, who are mostly Asian. This compositional effect does play some role in producing this gap. Still the model controls for major demographic characteristics that should matter.

Next we run these estimates on Canadian born individuals only to better assess the influence of parental background on the children of immigrant. Table 6 shows the relative fertility rate of second generation Canadians (Canadian born children of immigrant parents) to that of Canadian born to Canadian parents (usually referred to as third generation). We distinguish between the impact of having an immigrant father (column I) and an immigrant mother (column III).

The results indicates that the second generation has a distinctively overall lower fertility rate than the native born. This, however, requires some qualification, as the ancestry of Canadians seems to have a distinct influence on fertility. Controlling for age, individuals whose father was born in Mexico, central Europe or the Middle East have substantially higher fertility rates than the reference group (1.5 and 1.1 times higher respectively). All other groups show lower fertility rates.

[14] We introduce a finer distinction between immigrants, depending on the immigrant status of their parents. Immigrants with a native-born father and a foreign-born mother (only 1% of the migrants) have the highest fertility.

These are particularly low among Canadians born to Asian fathers. The effect of maternal place of birth is similar, but the effects seem weaker for Canadian born to American mothers, but still very large for daughters of Mexican women (close to 1.4). The main difference is for Canadians born to Middle East mothers which show a significantly higher fertility rate (1.15 times higher).

VI. Conclusions

In 2006, about two thirds of total population growth in Canada was due to international immigration. According to Statistics Canada's projections, natural population growth will become negative between now and 2056, and international net migration will be the only source of population growth. This is the result of sustained low fertility rates - below the replacement level - for more than three decades (Belanger et Al. (2005)). Slow population growth together with the aging of the baby boom generation implies a rising demographic dependency ratio: the number of children (0 to 14) plus elderly persons (65 or more) per 100 persons of working age (15 to 64), currently around 44. Hence, the evolution of Canadian demographics questions the ability of the current working age population to support the retirement of the baby-boom and to provide social services and maintain economic growth in the near future. Further, immigration appears to be only source of population growth that can mitigate this trend in the short run. Already, immigration is the main contributor to the Canadian labour force, with 70% of labour force growth attributed to immigrants.

In this context, the interplay of fertility and immigration rates has a central role in determining the future demographic trajectory of Canada. If the fertility of immigrants is sufficiently higher than that of the native-born population, even constant immigration rates may help boost overall fertility rates, particularly if fertility is transmitted inter-generationally. Our study shows that immigrant fertility is higher than that of Canadian-born women, but not by much. This result, however, uncovers substantial heterogeneity in fertility rates among immigrants, particularly regarding place of birth. Immigrants from Asia, China in particular, have the lowest fertility rates among the immigrant population, whereas South Americans and most immigrants from African regions have the highest. Most importantly, these trends seem to be transmitted to the second generation of Canadians, those born to foreign parents. Although the second generation of Canadians have, on average, similar fertility rates than the native born, fertility rates vary by place of origin of parents, with those of Asian descent having substantially lower fertility rates and those from Mexican, European and Middle East parentage having substantially higher fertility rates.

These results have important implications for social policy. First, in the years to come, the composition of the immigrant population will likely affect the future population growth of Canada, and will shape the need for the support of social services. Second, ethnic and cultural diversity in Canada will increase by even more than is already predicted by current immigration levels, since the groups that portray higher fertility rates and higher transmission to the second generation are mostly visible minorities. Finally, these results suggest that more research is needed in order to understand the interaction between fertility and labor market choices of immigrant women. High fertility rates resulting from poor labor market opportunities for immigrant women, or from costly child care alternatives that constrain individual choices, may affect the economic well-being of immigrant families and perpetuate traditional gender roles that impede the economic integration of foreign-born women.

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Table 1. Mean Number of Children for women aged 16-45 by census year and selected characteristics

	1991	1996	2001	2006
Non-Immigrant	0.89	0.88	0.84	0.77
Immigrant	1.18	1.11	1.08	1.03
Years since migration				
0 to 5	0.88	0.84	0.88	0.85
6 to 10	1.11	1.06	1.00	1.00
11 to 15	1.22	1.18	1.08	1.02
16 to 20	1.26	1.25	1.23	1.08
More than 20	1.41	1.36	1.35	1.31
Age at immigration				
0 to 5 years old	0.77	0.77	0.72	0.68
6 to 11 years old	0.84	0.77	0.69	0.57
12 to 16 years old	0.91	0.78	0.71	0.62
17 to 19 years old	1.32	1.16	1.07	1.00
More than 19 years old	1.43	1.34	1.35	1.32
Country of Origin				
US	1.13	1.20	1.23	1.12
Caribe	1.03	1.02	1.06	1.01
Mexico	1.63	1.72	1.52	1.42
Central America	1.39	1.33	1.25	1.18
South America	1.10	1.08	1.10	1.06
Northern Europe	1.24	1.16	1.16	1.21
UK-Ireland	1.09	1.10	1.14	1.16
Europe	1.25	1.15	1.11	1.06
Eastern Europe	1.09	1.04	0.92	0.86
Southern Europe	1.57	1.48	1.35	1.19
Middle East	1.34	1.30	1.21	1.11
China	1.02	0.85	0.78	0.74
North-East Asia	1.06	0.91	0.84	0.76
South Eastern Asia	1.03	0.89	0.94	0.95
Southern Asia	1.13	1.25	1.26	1.23
North Africa	1.37	1.39	1.31	1.23
Central Africa	1.15	1.14	1.21	1.21
West Africa	1.07	1.24	1.15	1.14
Southern Africa	0.97	0.98	1.00	0.94
Eastern Africa	0.99	1.01	1.19	1.19
Pacific	1.06	1.11	1.13	1.04
Observations	402,150	444,540	485,230	503,420

Table 2. Immigrant Fertility: the relevance of age at immigration and family structure

A. Relative Fertility Rate estimates			
	(I)	(II)	(III)
Immigrant FR	1.083**	1.101**	--
Additional family member[@]	--	0.832**	--
Immigrant with additional family member	--	1.005	--
Age @ immigration 0-5		--	1.005
Age @ immigration 6-11	--	--	1.050**
Age @ immigration 12-15	--	--	1.106**
Age @ immigration 16-19	--	--	1.194**
Age @ immigration 20-45	--	--	1.082**
B. Predicted number of Children			
	(I)	(II)	(II)
Immigrant	1.85		--
nuclear family	--	1.90	--
extended family	--	1.61	--
Native born	1.76		1.76
nuclear family		1.78	--
extended family	--	1.52	--
Immigrant @ age 0-5		--	1.73
Immigrant @ age 6-11	--	--	1.81
Immigrant @ age 12-15	--	--	1.95
Immigrant @ age 16-19	--	--	2.14
Immigrant @ age 20-45	--	--	1.83
Observations		1,835,325	

Panel A shows the results of the Poisson regression for number of children living at home for women 16 to 45 years old. The regression includes controls for age, marital status, province of residence, education and census year.

Panel B shows the average predicted number of children for married females between 35 and 40 years of age in each group based on the regressions in the same column in panel A and with the other control variables kept at the mean of each group.

[@] Additional family member is an indicator for a respondent with children living in a household with extended family.

(**) indicates significant at 1%, (*) indicates significance at 5%

Table 3. Fertility behaviour of immigrant cohorts

	Relative fertility rate	Predicted # of children
Immigrants from previous cohorts	1.109**	1.97
1985 cohort – 6 to 10 yrs in Canada	1.025**	1.97
11 to 15 yrs in Canada	1.044**	2.05
16 to 20 yrs in Canada	1.049**	2.07
21 to 25 yrs in Canada	1.042**	1.96
1990 cohort – 1 to 5 yrs in Canada	0.911**	1.76
6 to 10 yrs in Canada	1.010*	1.96
11 to 15 yrs in Canada	1.030**	1.97
16 to 20 yrs in Canada	1.043**	2.01
1995 cohort – 1 to 5 yrs in Canada	0.876**	1.68
6 to 10 yrs in Canada	0.977**	1.82
11 to 15 yrs in Canada	1.010*	1.89
2000 cohort – 1 to 5 yrs in Canada	0.874**	1.55
6 to 10 yrs in Canada	0.982**	1.71
2005 cohort – 1 to 5 yrs in Canada	0.854**	1.46
Observations	1,835,325	

The dependent variable is the number of children living at home for women 16 to 45 years old. The regression includes controls for age, marital status, province of residence, education and census year.

The second column shows the average predicted number of children for married females between 35 and 40 years of age in each group based on the regression in the first column and with the remaining control variables kept at the mean of each group.

(**) indicates significant at 1%, (*) indicates significance at 5%

Table 4. Country of origin and fertility behaviour of immigrants

	Relative fertility rate	Predicted # of children
Native born	--	1.76
Immigrant		
US	1.118**	1.88
Caribe	1.267**	2.23
Mexico	1.540**	2.71
Central America	1.467**	2.64
South America	1.087*	1.90
Northern Europe	0.982	1.68
Europe	1.027**	1.76
Eastern Europe	0.955**	1.57
UK / Ireland	1.000	1.74
Southern Europe	1.099**	2.02
Middle East	1.359**	2.31
China	0.824**	1.37
North Eastern Asia	1.002	1.61
South East Asia	0998	1.72
Southern Asia	1.166**	1.97
North Africa	1.270**	2.03
Central Africa	1.442**	2.38
West Africa	1.376**	2.34
Southern Africa	1.059**	1.76
Eastern Africa	1.275**	2.22
Pacific	1.046**	1.80
Observations	1,835,325	

The dependent variable is the number of children living at home for women 16 to 45 years old. All models include controls for age, marital status, education, province of residence and census year.

The second column shows the average predicted number of children for married females between 35 and 40 years of age in each group based on the regression in the first column and with the remaining control variables kept at the mean of each group.

(**) indicates significant at 1% (*) indicates significant at 5%

Table 5. Fertility rate by generational status (2001, 2006)

		RFR	Predicted # children
Third generation:	**Native born** – Canadian parents	--	1.75
Second generation:	**Native born** – Immigrant parents	0.964**	1.63
2.5 generation:	**Native born** – Immigrant father	0.971**	1.65
	Native born – Immigrant mother	0.962**	1.63
First generation	**Immigrants** – Canadian parents	1.063**	1.82
	Immigrants – Immigrant parents	1.063**	1.78
	Immigrants – Immigrant father	1.049**	1.74
	Immigrants – Immigrant mother	1.111**	1.92
Observations		988,640	

The dependent variable is the number of children living at home for women 16 to 45 years old. All models include controls for marital status, province of residence, education, census year and age.

The second column shows the average predicted number of children for married females between 35 and 40 years of age in each group based on the regression in the first column and with the remaining control variables kept at the mean of each group.

(*) indicates significant at 1% (**) indicates significant at 5%

Table 6. Fertility and Parental place of birth of second generation Canadians (2001-2006)

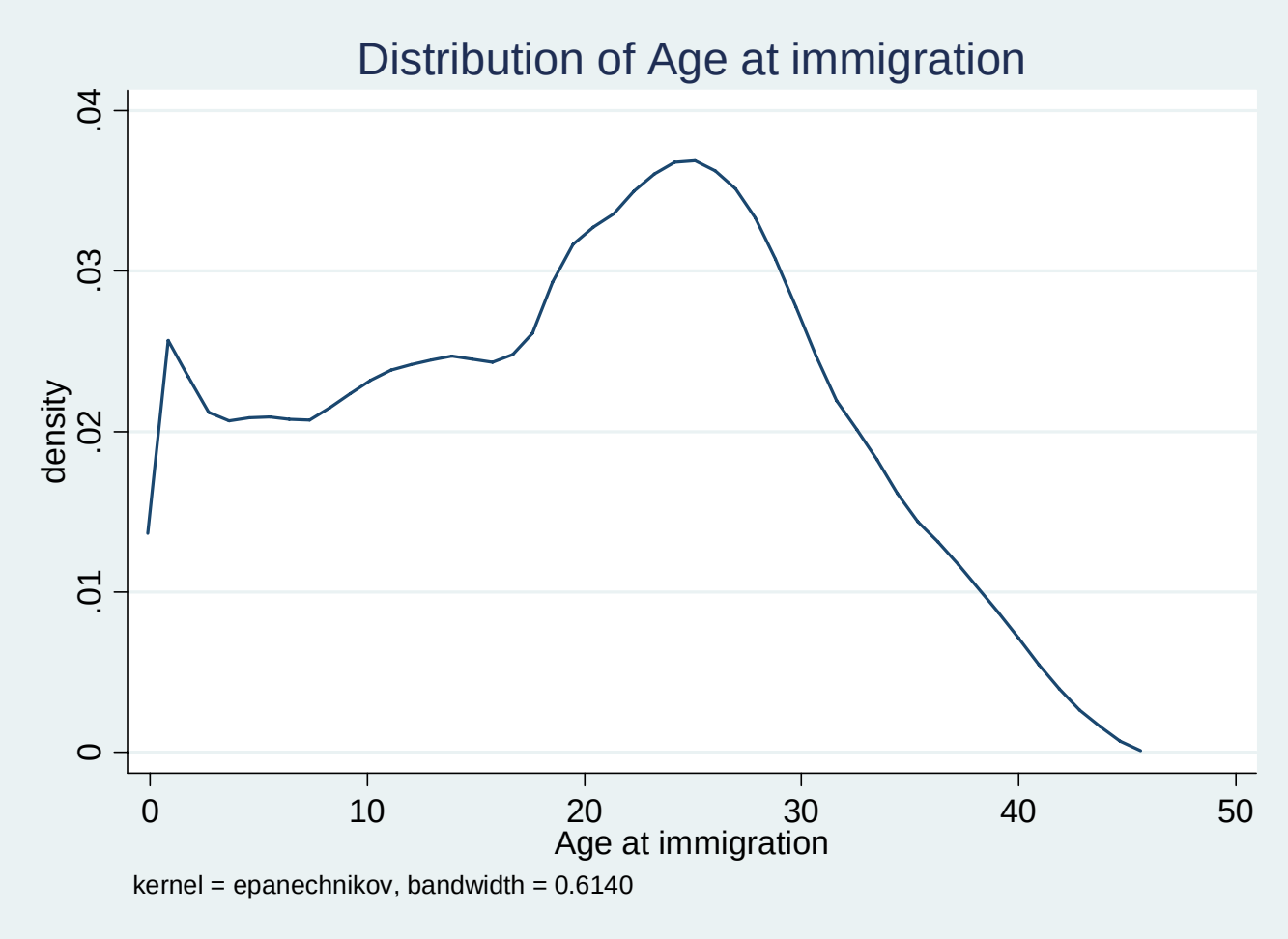
	RFR (I)	Predicted # children	RFR (II)	Predicted # children
Parental place of birth	**Father**		**Mother**	
Canadian	--	1.76	--	1.76
US	0.979	1.64	1.018	1.70
Caribe	0.940**	1.65	0.861***	1.51
Mexico	1.555***	2.69	1.387***	2.40
Central America	0.823	1.49	0.891	1.61
South America	0.926*	1.62	0.963	1.68
Northern Europe	0.949**	1.61	0.935**	1.58
Europe	1.101***	1.87	1.085***	1.84
Eastern Europe	0.965***	1.59	0.963***	1.58
UK / Ireland	0.941***	1.62	0.935***	1.61
Southern Europe	0.918***	1.62	0.927***	1.64
Middle East	1.094**	1.86	1.152***	1.97
China	0.683***	1.12	0.691***	1.13
North Eastern Asia	0.497***	0.79	0.549***	0.87
South East Asia	0.641***	1.09	0.674***	1.15
Southern Asia	0.663***	1.12	0.694***	1.17
North Africa	0.900*	1.45	0.942	1.52
Central Africa	0.780*	1.30	0.716	1.20
West Africa	1.030	1.75	0.947	1.61
Southern Africa	0.928	1.53	0.801***	1.33
Eastern Africa	0.550***	0.96	0.548***	0.96
Pacific	0.784***	1.34	0.760***	1.30
Observations		495,275		

The dependent variable is the number of children living at home for women 16 to 45 years old. All models include controls for marital status, province of residence, education, census year and age. In Column I, place of birth refers to Father's place of birth. In column II, place of birth refers to Mother's place of birth.

The second column shows the average predicted number of children for married females between 35 and 40 years of age in each group based on the regression in the first column and with the remaining control variables kept at the mean of each group..

(*) indicates significant at 1% (**) indicates significant at 5% ($^{+}$) indicates significant at 10%

Figure 1. Distribution of immigrants by age at immigration (1991-2006)



Appendix

Table A1. Classification of countries by region of origin:

Caribe: Cuba, Dominican Republic, Haiti, Puerto Rico, Jamaica, Trinidad and Tobago, Guadeloupe, Martinique, Bahamas, Barbados, Netherlands Antilles, Saint Lucia, Saint Vincent and the Grenadines Virgin Islands, U.S. Grenada , Antigua and Barbuda, Dominica, Cayman Islands, Aruba, Anguilla, Bermuda, Montserrat, Saint Kitts and Nevis Turks and Caicos Islands Virgin Islands, British

Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama,

South America: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Falkland Islands (Malvinas), French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela.

Northern Europe: Greenland, Denmark, Finland, Iceland, Norway, Sweden.

Europe: Austria, Belgium, Germany, Liechtenstein, Luxembourg, Monaco, Netherlands, Switzerland, France.

Eastern Europe: Bulgaria, Czech Republic, Slovakia, Czechoslovakia, n.i.e., Hungary, Poland, Romania, Estonia, Latvia, Lithuania, Belarus, Moldova, Republic of Russian, Albania Federation, Ukraine, U.S.S.R., n.i.e., Bosnia and Herzegovina, Croatia, Slovenia, Yugoslavia.

Southern Europe: Andorra, Gibraltar ,Greece, Italy, Malta, Portugal, San Marino, Spain, Vatican City State, Macedonia

UK Ireland: Ireland, Republic of (Eire) United Kingdom

Middle East: Afghanistan, Cyprus, Iran, Turkey, Armenia, Azerbaijan, Georgia, Kazakstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Bahrain, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen, Palestine/West Bank/Gaza Strip

China: People's Republic of china, Hong Kong, Macao, and Mongolia

North Eastern Asia: Japan, Korea, North Korea, South Taiwan

South East Asia: Cambodia, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand, Viet Nam

Southern Asia: Philippines, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan Sri Lanka

North Africa: Algeria, Egypt Libya Morocco, Tunisia, Sudan, Western Sahara

Central Africa: Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea, Gabon, Sao Tome & Principe, Zambia, Zaire

West Africa: Benin, Burkina Faso, Côte d'Ivoire, Cape Verde, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo

Southern Africa: Botswana, Lesotho, Namibia, Republic of South Africa, Swaziland

Eastern Africa: Eritrea, Uganda, Sudan, Kenya, Tanzania, Rwanda, Burundi, Somalia, Djibouti, Ethiopia, Comoros, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Reunion, Seychelles, Zimbawe

Pacific: American Samoa, Australia, Cook Islands, Fiji, Polynesia, New Caledonia, New Zealand

Table A2. Summary Statistics for Native Born and Immigrants.

	All		1991		2006	
	NB	IMM	NB	IMM	NB	IMM
Number of children	0.84	1.10	0.89	1.18	0.77	1.03
Age	30.41	32.93	30.08	32.91	30.31	33.04
Education						
Less than HS	0.25	0.22	0.30	0.29	0.19	0.14
High School	0.28	0.26	0.30	0.28	0.27	0.24
Trades	0.09	0.08	0.09	0.08	0.11	0.08
Non-University Post Secondary	0.19	0.16	0.17	0.15	0.19	0.15
University-BA	0.16	0.23	0.12	0.16	0.20	0.31
Graduates	0.02	0.06	0.02	0.04	0.03	0.08
Marital Status						
Divorced	0.04	0.04	0.04	0.04	0.03	0.04
Married (+ Common Law)	0.54	0.64	0.59	0.67	0.50	0.63
Separated	0.03	0.03	0.03	0.03	0.02	0.03
Never Married	0.39	0.28	0.34	0.25	0.44	0.29
Widowed	0.00	0.01	0.00	0.01	0.00	0.01
Additional Family in Household	0.02	0.06	0.03	0.06	0.02	0.07
Years since migration	--	13.39	--	14.61	--	12.92
Arrived 0 to 5 years ago		0.27		0.25		0.28
Arrived 6 to 10 years ago		0.20		0.14		0.20
Arrived 11 to 15 years ago		0.17		0.16		0.20
Arrived 16 to 20 years ago		0.14		0.19		0.14
Arrived more than 20 years ago		0.23		0.27		0.19
Age at Immigration	--	19.56	--	18.32	--	20.14
Between 0 and 5 years of age		0.13		0.16		0.12
Between 6 and 11 years of age		0.13		0.13		0.14
Between 12 and 16 years of age		0.12		0.11		0.12
Between 17 and 19 years of age		0.09		0.10		0.08
Between 20 and 45 years of age		0.53		0.50		0.55
Country of origin						
Canada	1.00	--	1.00	--	1.00	--
America		0.19		0.21		0.18
Europe		0.30		0.41		0.23
Middle East		0.06		0.06		0.07
Asia		0.38		0.30		0.44
Africa		0.06		0.05		0.08
Pacific		0.01		0.01		0.01
Generation Status						
Native born-- Canadian parents	0.79		0.80		0.78	
Native born-- Immigrant parents	0.12		0.11		0.12	
Native born—Immigrant Father	0.05		0.05		0.06	
Native born-- Immigrant Mother	0.04		0.04		0.04	
Immigrant -- Immigrant parents		0.97		0.97		0.97
Immigrant — Other		0.03		0.03		0.03
Observations	914,260	921,070	203,820	198,330	242,340	261,080